

# Biologists, Policymakers and Other Specimens

A Story about Collecting,  
Regulating and Social Interactions

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**Biologists, Policymakers and Other  
Specimens:  
A Story about Collecting, Regulating and  
Social Interactions**

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*Dedicada a*

*¡Los millones de especímenes que se encuentran  
en las colecciones biológicas del mundo!  
Actores no humanos que nunca leerán –como muchos humanos- ésta tesis.*

*A los viejitos  
Alfonso, Graciela, Mercedes y José  
Por su herencia cultural y biológica  
(Ellos tampoco la leerán)*

# Agradecimientos

I want to acknowledge every single branch of the tree of life that in some way or another help me to do *this*.

Quiero agradecer a cada rama del árbol de la vida que de alguna manera u otra me ayudó a hacer *esto*.

- **Family *Maestridae*** (especialmente a Olga Restrepo y Malcolm Ashmore).
- **Family *Sanguinidae*** (especialmente a Gloria Medina y Miguel González).
- **Family *Specimenidae*** (especialmente a las personas entrevistadas que accedieron a hacer parte de mi “colección textual” en ésta investigación).
- **Family *Suportidae*** (especialmente a Maribel Rey, Diana Piraquive y Edna Castillo).

## Resumen

Este documento es una historia de la regulación de las prácticas de la biología en Colombia. Se desarrolla, principalmente, en la primera década de este milenio y es construida mediante la exploración de diferentes *especímenes* que habitan diferentes ecosistemas en esta controversia sociotécnica: Noticias, videos, cartas, conversaciones, artículos científicos, foros e incluso situaciones ficticias. Esta historia de regulación de la ciencia tiene un “final feliz”, o, una victoria de la comunidad de biólogos cuando fueron publicados por el Ministerio de Ambiente y Desarrollo Sostenible los decretos 1375 y 1376, en el año 2013, los cuales regulan la práctica de coleccionar especímenes biológicos con fines científicos y las colecciones biológicas. Pero antes de que el proceso de creación de políticas fuera realizado con una participación relevante de biólogos, fue necesario configurar una *situación problemática*, llena de asociaciones las cuales ayudaron a los científicos a movilizar los recursos necesarios para promover un cambio en la normatividad que regula sus prácticas. Mientras se construía esta historia, se realizó un constante paralelismo entre el “mundo de la biología” y el proceso de hacer investigación sobre las comunidades de biólogos, generándose una tesis que no solamente habla sobre un cambio en el marco regulatorio de la biología sino también sobre *hacer trabajo de colecta y análisis* para entender una comunidad científica.

**Palabras clave:** colecciones biológicas, ciencia reguladora, diseño de políticas, estudios sociales de la biología, prácticas científicas, interacciones sociales.

## Abstract

This document is a story of the regulation of the practices of biology in Colombia. It unfolds, mainly, in the first decade of this millennium and it is constructed by exploring different *specimens* that inhabit quite different ecosystems in this sociotechnical controversy: News, videos, letters, conversations, scientific articles, forums and even fictional situations. This story of regulation of science has a “happy end”, or, a victory for the community of biologists when were published by Ministry of Environment the Decrees 1375 and 1376, in 2013, which regulate the practice of collecting biological specimens for scientific purposes and the biological collections. But before a process of policymaking was performed with a relevant participation of biologists, it was necessary to configure a *problematic situation*, full of associations which help scientists to mobilize the needed resources for promoting a change in the normativity that regulates their practices. While constructing *this* story, a constant parallelism between the “world of biology” and the process of doing research of communities of biologist is done, generating a thesis that does not only talk about a change in the regulatory framework of biology but about *doing collecting and analysing work* for the understanding of a scientific community.

**Key words:** biological collections, regulatory science, policymaking, social studies of biology, scientific practices, social interactions

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## Abbreviations, terms and translations

<b>Abbreviation</b>	<b>Term and translation</b>
<i>ACCEFYN</i>	ACADEMIA COLOMBIANA DE CIENCIAS EXACTAS, FÍSICAS Y NATURALES (Colombian Academy of Physical and Natural Sciences)
<i>COLCIENCIAS</i>	DEPARTAMENTO ADMINISTRATIVO DE CIENCIA, TECNOLOGÍA E INNOVACIÓN (Administrative Department of Science, Technology and Innovation)
<i>CPB</i>	CONSEJO PROFESIONAL DE BIOLOGÍA (Professional Council of Biology)
<i>ICN</i>	INSTITUTO DE CIENCIAS NATURALES (Institute of Natural Sciences)
<i>IAVH</i>	INSTITUTO DE INVESTIGACIÓN DE RECURSOS BIOLÓGICOS ALEXANDER VON HUMBOLDT. (Alexander von Humboldt Biological Resources Research Institute)
<i>MADS</i>	MINISTERIO DE AMBIENTE Y DESARROLLO SOSTENIBLE (Ministry of environment and sustainable development)
<i>PUJAV</i>	PONTIFICIA UNIVERSIDAD JAVERIANA (Pontifical Javeriana University)
<i>UAND</i>	UNIVERSIDAD DE LOS ANDES (University of Los Andes)
<i>UDEA</i>	UNIVERSIDAD DE ANTIOQUIA (University of Antioquia)
<i>UJTL</i>	UNIVERSIDAD DE BOGOTÁ JORGE TADEO LOZANO (University of Bogotá Jorge Tadeo Lozano)
<i>UNAL</i>	UNIVERSIDAD NACIONAL DE COLOMBIA (National University of Colombia)



## Prologue: A Biologist in a Biological Collection... and so?

Eleven, eleven of 2014. Half past eight in the morning and I am in a big office surrounded by thousands of different specimens in bottles with substances for – I know- their proper preservation: Lizards, snakes, frogs and tadpoles everywhere, which are part of the herpetological collection of the Institute of Natural Sciences (now on ICN, by its acronym in Spanish), a scientific institution belonging to *Universidad Nacional de Colombia* (UNAL) and the repository of the main biological collection of the Republic of Colombia. In the room, I am not alone with these *non-living-actors*. Sitting at a desk crammed with papers, there is one of the main people responsible for the constitution of this huge collection and its constant increase: John Lynch has been UNAL professor since the seventies. A North American biologist who decided to locate permanently in Colombia due, in part, to its great biodiversity of what biologists call herpetofauna (reptiles + amphibia), a taxonomic group of which Lynch is a world expert. But *biodiversity*, regardless of whether it refers to the number of species of a determined region or some other kind of diversity (ecosystemic, genetic, morphologic, etc.) is something that has been built by different actors –like Lynch- in contingent ways. Something whose existence is dependent on what people write, think, say, see, explain, describe, *collect*. From this perspective *specimens* are not things that are simply out there waiting to be discovered by scientists. Their names, their nature, their biological characteristics are not *independent stricto sensu*. Similarly, *scientists*, their practices, their perspectives, their discourses are also diverse, contingent, research-dependent. They are not just out there, and *they* are the reason why I am here.

I am in this familiar place neither for doing some biological research -an expected and noble reason for a young and capable biologist like me- nor as a naïve young anthropologist in a new place with foreign people with exotic behaviour, looking for devices, transcriptions, taking notes about descriptions of what this specific tribe of scientists *really do* in this place of knowledge production and trying to write an analysis

about their *Laboratory Life*<sup>1</sup> or, for this case, what we could call their *Collection Life*. No. My intentions are different but in some sense similar to those of the naïve anthropologist and also to those of that student that has just arrived, who says *hello* with familiarity to Lynch, who goes directly to a specific place of this bottling office, sits down in front of a stereoscope<sup>2</sup>, gets prepared in a ritualistic manner for his work of today, using a machine to look with *more detail* at what is –I know- a tadpole. He observes. He describes. And right now, this text you are reading is becoming a description about a description. Of course, before describing, before writing, before publishing, biologists do some *collecting work*. He certainly is describing something that has been collected from another place. What for? Analysing? Explaining? Associating? Doing some taxonomy? Doing lab work for his thesis? Trying to increase knowledge about Nature? Trying to build a social position for him via his esoteric products? All *this* occurs when I go directly to a specific place of this bottling office, sit down and extracting my recording machine<sup>3</sup>, get prepared in a ritualistic manner for working of today, using a machine to record in order to analyse, afterward, with *more detail*, what is –I know- a biologist. I am certainly describing something I have collected. What for? for assembling *the social*? for explaining and associating ideologies, contexts, places and events that influence actions of a particular, situated, with multiple ontologies, scientific community? for trying to increase knowledge about Nature and also about Culture? for building a position for me via this esoteric thesis?

I am a biologist trying to write something that could be classified as a social study. In fact, I want to be classified as a sociologist or something like that in the near future. Of course, writing one single paper is not going to be enough for my taxonomic intention. I want to be also a *sociologist* but would not be enough my biological perspective for understanding biologists? What could do a sociologist in this temple of knowledge production full of bottles with biological specimens? A research field call *Social Studies of Science* could tell us many possibilities; anyway it has collected -and co-created- a lot of *stories* about

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<sup>1</sup> For reading a classic book about that, I suggest *Laboratory Life*. The construction of scientific facts. (Latour & Woolgar, 1979)

<sup>2</sup> A device with lens used for zooming *not-too-small-but-small-enough-for-eye-man-objects*. It is something like a microscope but less “powerful”.

<sup>3</sup> A device used for recording *not-too-small-but-small-enough-for-ear-man-sound-waves*. It is something like hearing a conversation but more “powerful” because you can stop it, return it, copy it, and many other possibilities.

Science and Society: some of these stories have been considered pioneering in the field, like the way a doctor named Ludwig Fleck told us how the solid scientific facts are *created* as in the case of Wassermann's reaction and Syphilis (Fleck, 1979); some others have erected *technologies* for the production of matters of fact taking into account linguistic practices (Shapin, 1984); some stories have pointed our attention to laboratory life (Latour & Woolgar, 1979) and other places for consolidating a scientific fact/interest and moving the world via extending the labs and scientific ideas of its traditional places (Latour, 1983); the importance of texts, discourses, even for studying biochemistry has been another significant contribution (Gilbert & Mulkay, 1984); others stories even reminded us of childhood fairy ones, where non-human actors -like those frogs in bottles I see in this place- *talk*, mobilize, enrol. To sum up, these stories have allowed non-humans to be also *actors* for social action (Callon M. , 1986); and, of course, there are have been stories that have shown that *Science* is not "all good" or "all bad" but a growing *Golem* with strange behaviours and uncertain outcomes (Collins & Pinch, 1993). Those varied *technoscientific stories* mentioned are only the tip of the iceberg and are based on *other stories*, or, as Mulkay (1985) points out, *secondary texts* which can allow multiple interpretations and, if fortunate, induce the production of many other texts. So, as a *protosociologist* looking for a social study of science, I am here for the writing of another story which involves biologists, lawyers and other specimens, but before doing that, I first have to do something: *to collect*.

Part of what was collected will be revealed in the following chapters and we will come back later to "eleven, eleven of 2014", at *the bottling office* with Professor Lynch and many other specimens. But right now, let us be clear about the purpose of this thesis which is what I expect you, my invaluable reader, expect me to do in the first part of an expected highly planned and structured thesis.

On June 27 of 2013, decrees 1375, *whereby regulates biological collections*<sup>4</sup>, and 1376, *whereby regulates the collecting permission of wild species of biological diversity for non-*

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<sup>4</sup> "Por el cual se reglamentan las colecciones biológicas" (MADS, 2013a).



*commercial scientific research*<sup>5</sup>, were published by the Ministry of Environment and Sustainable Development of Colombia (*Ministerio de Ambiente y Desarrollo Sostenible, from now on, MADS*). These decrees were presented by some Media – university newspapers mainly- like a symbol of victory of scientists that had to go out of their labs, stop their biological research, suspend their daily activities, to focus on doing some *political work* in order to change the norms that govern their scientific practice which in this case is an old one: Collecting biological specimens.

This thesis intends to analyse some specimens –News, interviews, videos, decrees and other material- to build a story about the influence that had perceptions, places and events which help to generate a *problematic situation* and the posterior production of decrees 1375 and 1376 of 2013, which rules biological collections and collection permission of wild specimens in Colombia, as part of a solution for the obstacles faced by scientists. Though the initial motivation for doing this research were the mentioned decree changing that regulates biological collections and collecting for research purposes this thesis will not be an analysis of development of biological research regulation in Colombia. I am not going to explain a *wider frame* for policy construction in matters of biological research or to follow the legal entanglement surrounding these policies. Instead of focusing on decrees endogenously, I have chosen some events, ideas and interactions, related to the general topic of *collecting*, its importance for a scientific community and its usage for sustaining some discourses and interactions. So, in this text I expect to do things like: *propose actors and their multiple performances* that were involved in problematizing, negotiating and generating consensus in order to change the regulatory normativity of a scientific practice and had as one consequence the birth of decrees 1375 and 1376 of 2013; *to suggest places, events and tactics* used by actors and that influence policy changes; *to write a script about perceptions, ideals and arguments* that actors put forward in different ways to change, to base on, or to react in front of the normative changing. All this for building a story which its main product is the whole thesis content and structure.

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<sup>5</sup> “Por el cual se reglamenta el permiso de recolección de especímenes de especies silvestres de la diversidad biológica con fines de investigación científica no comercial” (MADS, 2013b)

Something is for sure. If you are expecting that I am going to conclude things like “and this is how Science must be involved in process of policymaking”; “Scientists in this case did the best they could do”; “Government and Society must learn from Science and should uses its methods for resolving social and practical problems”; then, you can save time, and direct your attention to another kind of writing. On the other hand, if you are expecting that I will conclude things like “And this is why Science must not pretend to involve a lot in process of policymaking”; “Scientists in this case did all the wrong things we have seen in other cases”; “Government and Society must be really careful of Science intervention”; then, you can save time, and direct your attention to another kind of writing. What could you find out in this thesis then? Well, being honest with my epistemological perspective, that is *your* homework, or better, your interpretative work, and you are going to find it once you read it all. I just can state for now that my intention is that you could find different topics interlaced: collecting, policies, ministries, biological collections, scientific community, indigenous and environmentalist communities, illegality, universities, biological research, sociological research, Antioquia, consultation, matters of purposes, rhetorical dispositive, discourses, newspapers, bugs, experts, policymakers, Bogotá, real events, fictional and not-so-fictional events, decisions, matters of fact, heroes, forums, and many other specimens. This thesis involves empiricist’s approximations, fictional ones, theoretical considerations, ironies here and there, and many meaningful gaps that were not taken into account. My expectation is that *this* will make you wonder about Science, Decisions and Society, in one or another way, nothing else.

Biological collections are highly ordered structures, depositories of biological specimens, arranged in ways to provide a systematic assemblage which want to promote research efficiency and establish a coherent structural classification. *Theses* are also expected to be arranged in a similar way. So, let us start introducing my reader into some general aspects of its structure: First chapter will be about *doing taxonomy*<sup>6</sup>. In this initial part of the text I will consider what some *regulatory tales* have said about hybrid

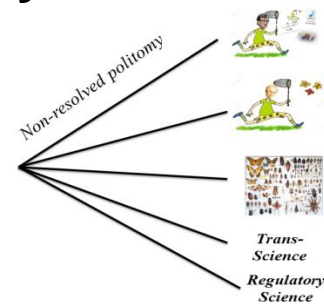
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<sup>6</sup> I am in debt with Professor Olga Restrepo for this expression. She used to use it in class sometimes as a way to point out that “doing taxonomy”, or just doing “this case is A or Y”, or “this fits very well on this concept”, is not enough for a proper analysis. I am sorry if I misunderstand you Professor Olga and sorry for using an expression without asking for permission but those are things that you *collect* in magister domestication processes and sometimes you use.

controversies where scientists are interested in changing a particular state of the world in order to favour their practices and discourses. In the second chapter I will present some general issues about *collecting work* in a double sense: collecting for this thesis (some general information about methodological aspects and sources of information use in it), and collecting for biological research, taking into account –redundancy worth it- *accounts* from biological and human sciences perspectives. Chapter three and four introduce some *Bad News* mobilized in different media about problems for doing Science in Colombia but for presenting the problematic situation on the News I will sustained a way for structuring my narrative via talking about a method used by biologists. That is why the third chapter will be about a *Systematics of News*. Before explaining what News say then I will explore a *risky* methodology for classifying News in order to build one narrative to guide my own analysis. This method will make you wonder -I hope- about classification in sociology but also in biology. I will show some associations between a scientific practice with topics such as development, participation, and even mining, considering traits of my textual specimens and a way for structuring my own discourse by means of what I will call a *Systematics for News*. Fifth chapter will expose a sociological analysis in a *non-conventional form*, that is, I will not use a traditional impersonal monologue and empiricist expressing format, but a *fictional story* about some biologists and non-biologists that were involved in a controversy for collecting specimens without the required research permission they had to request to environmental authorities. Although this section is fictional *strictu sensu*, *in fact*, is *not-so-fictional*, due to this narrative is build based on interviews and documents of a *real event* (for more explanations you can visit the respective chapter). Chapter six will associate two videos, two actors, two letters and two forums and their roles in this controversy (and with things that are not multiples of two). The final chapter will focused on the engagement of some scientists on regulatory process in the case of co-production of decrees that regulates biological collections and research permission on biodiversity. In this chapter will be explored the different roles, perceptions of some of the actors involved, the products achieved and the new challenges of a victorious scientific community involved in policymaking. The final chapter is for *Victory* and victory, in a normal story, constitute one way for closing it.

Oh! One clarification before starting: As you have already notice I have started this thesis with an anecdotic style, for many, a non-appropriate way for exposing a serious sociological analysis for a master thesis. Fortunately, some authors from Social Studies of Science, and other fields of knowledge, have already done it (and they still look very academic!). So you will see in this text different styles for talking and analysing about an issue. I am in specially debt with Professor Malcolm Ashmore and Professor Olga Restrepo because they have persuaded in their subjects, their students for doing sociological analysis in unorthodox ways. But I have to admit that one of the main motivation for using different forms of sociological analysis in some parts of this thesis is the 30 + 1 year old book of Mike Mulkay, *The Word and The World* (Mulkay M. , 1985). So, thanks Mike! Be patient because the journey is not short and let us start.

# 1. Doing Taxonomy



To utter that “Colombia officially remains the most diverse bird country on the planet (ProAves, 2015)”, and sentences like that, implies a great effort of traveling, asking for money, training, collecting, standardizing, doing morphological, behavioural, ecological, genetic... research, looking through microscopes, stereoscopes, doing Polymerase Chain Reactions, sending specimens one laboratory to another, phone calls, the publication of many papers with titles like “Description of new birds from...”, etc. Although many of these activities enable the existence of the utterance in question, another more simplistic way to explain its existence is by using the formula *collecting +doing biological collections + doing taxonomy*, or, in other words, first *we catch it*, second *we keep it*, and third *we say what it is*. Of course, doing research and making possible an utterance like “Colombia officially remains the most diverse bird country on the planet”, is more complicated than this three stage oversimplified formula. However, collecting, keeping and, taxonomising is, for many- if not all- biodiversity researchers, important steps for the construction of biodiversity utterances. One of the variables of the formula, *doing taxonomy*, permitting one to say that a collected specimen belongs to “X” or “Y” taxonomic category (*Vultur gryphus*, *Plantae*, *Spinosauridae*...) implies a great effort of boundary work and scientific competence. And one more time, this process is not exclusively the work of biologists.

As will be mentioned in next chapter, I have taken into account many different issues involved in the change of the normativities of biological collections and have collected from quite different sources of information –habitats-, which involved the capture of different sociological specimens and the constitution of a textual collection. But as a

trained sociologist “collecting for collecting” is not enough<sup>7</sup>. Required also, is an immense effort in *doing taxonomy*, that is, classifying my own specimens in already known categories (creation of a new category being a preferred output), like accounts, concepts, theories, and associations well-known to scholars in Science and Technology Studies (STS) and its academic allies (in fact, I use other exoteric categories as well but *STS categories* for an STS thesis are as important as considering known family names for an ornithologist). Of course, doing taxonomy is not something I will do just in this section (and being coherent with Actor Network Theory is not something that shall be a major goal for any research process); instead it is a constant process that can unfold while I write this thesis (and you read it), with every single utterance, metaphor, conceptual discussion, and establishment of facts.

On the other hand, besides establishing *what this is* (something will unfold as I have said), it would be useful to establish some delimitations of my case under study, by saying *what it is not* (which is, of course, another way to categorize) and *what it looks like*.

## 1.1. Scientific Hybrid Controversies and Regulation Processes

Scientific controversies, especially those that involve processes of regulation and the giving of scientific advice on multiple problems, are very popular in science and technology studies (Turner, 2001, pág. 475; Wynne, 1992). Inside these controversies, the cognitive authority of scientists has been questioned, as they assemble boundaries constantly between Science, Politics and other fields of knowledge (Gieryn, Bevins & Zehr, 1985; Jasanoff, 1987; Gieryn, 1999). Some social studies of science have involved controversies in which non-scientists are *acting*, who are labelled as members of multiple categories as “laypeople”, “lawyers” “policymakers”, “environmentalists”. These studies have been about *polemical topics*, mainly environmental and health controversies which

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<sup>7</sup> Perhaps “describing for describing” will be enough. For an argument on why “mere describing” is important and one “mantra” of Actor-Network Theory, you can read an interesting dialogue among one professor and a “lost student” looking for a conceptual framework for his doctoral thesis. See (Latour B. , 2008, págs. 205-224).

have been an important source for the study of hybrid controversies (Callon, Lascoumes & Barthe, 2004), and, of course, matter of public concern. These controversies have exposed science intervention in public issues and have questioned the role of scientists as lone advisers for taking decisions considering that “lays” can have relevant information about a topic under discussion taking into account local and historical knowledge fundamental for its involvement (Wynne, 2004). *My case* does not talk about issues that are *so popular*, like biological effects of radiation (Weinberg, *Science and Trans-Science*, 1972), nuclear waste disposition (Macfarlane, 2003), human embryo research (Mulkay, 1993), the regulation of pesticides in agriculture (Rothstein, Irwin, Yearley & McCarthy, 1999), the evolution *v.* creationism debate (Gieryn, Bevins, & Zehr, 1985), the regulation of modified genetic organisms (Murphy, Levidow & Carr, 2006), or other “sexy topics”<sup>8</sup>. Many of these cases involve one group in controversy, “the experts”, which are associated to “a scientific community”, and on the other hand, “the laypeople”, associated to a heterogeneous group of “citizens”, “parents”, “peasants”, “patients”, “fishers”, “believers”, etc. These cases also tend to conclude -though normative intention is often inexplicit among STS scholars- with this thought: “experts should take into account, in one way or another, lay, local, multiple, ignored experiences and interactions of non-scientists. Listen very well scientists: ¡other people do important things!”

In regulation processes, when a technological or scientific innovation is going to “see the light” after leaving laboratories (drugs, food, technology, etc.), multiple actors are involved in sets of increasingly controversial processes that change rapidly. On the one side, the regulation of complex phenomena without considering Science looks to be, year after year, odder. On the other side, the increasing growth of dependence on Science, as exemplified –as usual- of what has happened in USA (Schmandt, 1984, p. 33), and certainly in many European countries (Irwin, Rothstein, Yearley & McCarthy, 1997), has required the emergence of specialized agencies, external consultancies, scientific panels, and an increase in costs of research and regulation management, an increase in bureaucracy, and many other effects that explain the existence and growth of a triadic relation between Science-Regulation-Society, interactions in which scientific contestation

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<sup>8</sup> Another “sexy expression” I have stolen from Professor Olga Restrepo.

has a progressively more relevant role. In the United States, regulation gets born as a way to provide oversight of industrial and commercial activities, and they came to cover, by the end of last century, fields of public interest that are mainly concerned with health and environmental problems (Schmandt, 1984; Callon, Lascoumes & Barthe, 2004) and many regulatory institutions have emerged as agencies for regulation process, mainly since the 1970s (Jasanoff, 1990). As we noticed earlier, these sexy and controversial topics have been a good source of research for scholars of STS, in fact, our own mentors advice us to take a look on these controversies because they can constitute places where “the social” can be seen in the making (Latour, 2008).

Though regulation sectors have changed, from regulating only commerce to regulating scientific products (medicines, transgenics, nuclear energy, insecticides, etc.), the purpose in all cases -following Schmandt (1984)- appears to be the same: to assure that industry can produce wealth without damaging society. These regulation processes involve different analytical activities: Scientific determinations, economic analysis of impacts and decision processes, which contain economic, social, scientific and politic information, identifying options, advantages and disadvantages (Schmandt, 1984, p. 28). In this centralized perspective of decision-making processes all dimensions are the function of a regulatory entity, which must do a titanic work of understanding, integrating and articulating among different topics in order to identify the best or optimal option to take in a specific situation.

A model for describing a process of regulatory science developed on the case of agrochemicals in Great Britain, consists of the following stages (Irwin, Rothstein, Yearley, & McCarthy, 1997): first, speculative research leading to the development and validation of regulation exams. Second, an evaluation of regulation compliance looking to state how problem's solution is in place at a specific moment. Finally, a definite implementation and observance by the regulated entities. This frame is considered by the authors as hybrid and heterogeneous, one which crosses institutional boundaries and specializations. This is quite similar to the phases stated earlier by Jasanoff (1990) (quoted on Macfarlane, 2003, p. 798): a stage of knowledge production relevant for regulation, a synthesis and evaluations,



and finally a stage in which knowledge is used in order to make predictions about inherent risks to the regulation process itself.

It is recognized that plural participation is needed in these processes which involved science, society and regulation. Ludwig and collaborators (2001) recognized that not only scientists have *the* answer for questions that appeared when no consensus is achieved by experts, so instances of decision-making must be diverse. Similarly, for Macfarlane (2003, p. 803), considering the case of nuclear waste disposal, residents' opinion is an obligatory perspective and not only expert advise. For Wagner (quoted on Rykel, 2001) development of policies must be open to public scrutiny and not to stay hidden in agencies (no black boxes!). In fact, earlier for OECD [Organization for Economic Cooperation and Development] scientific regulation has been seen as an alternative congruent to a "more explicitly democratic forms then coming into favour, particularly in the USA" (Dickson, 1988, p. 268).

As you will see in the following chapters, the heterogeneity of any research case will highly depend on what was collected and on the taxonomic units you use to classify the specimens you find (e.g. "this is a biologist", therefor "she is an expert in biological issues", and "this is a lawyer", which make him a "non-expert on biological issues" but, surely he is an expert on something, relative to his role in a specific situation). These cases then have revealed that it is not so common that controversies come to an end simply because "the expert" gets involved and, via arguments, facts and scientific methods, solves the problem, teaching society how to behave in similar problematic situations. This case involves hybrid instances, because it is inhabited by biologists, lawyers, politicians, environmentalists, journalists, and other actors whose accounts are given less weight here. Its heterogeneity involves also institutional diversity, comprising universities –public and private-, government departments and other institutional actors whose accounts are less important here. The following sections will focus on some discussion about controversies and concepts involved in regulatory tales where a lot of boundary work is done.

## 1.2. Trans-Science and its Limits

One of the physicists associated with the *Manhattan Project*, Alvin Weinberg, published in 1972 an article entitled *Science and Trans-Science*. This article established that relationships among Science and entities related to policymaking are more complicated than might be expected. Scientists are not just providers of technical advice, or *means*, which are then used by policymakers to decide a particular sociotechnical issue. For Weinberg, there are questions that *transcended* Science (Weinberg, 1972, p. 209), that cannot be answered by scientists even if they have “content” or “scientific” language. These complex questions are those related to: *i*) phenomena that cannot be handled in a proper experimental way in order to have statistical significance for making a “proper scientific assessment”, because of incomplete data, or a lack of money or time; *ii*) technological devices or scientific products whose effects cannot be tested until long time has passed; *iii*) social subjects which are unpredictable by nature; *iv*) scientific values and judgements that cannot be taken into account by strict scientific knowledge. These complex issues, following the physicist, demands a different role for scientist, and with it the generation of a new domain of action, *Republic of Trans-Science*, inhabited by controversies, uncertainties and stakes, characteristics that look to be absent –for the physicist and many others- from the *Republic of Science*<sup>9</sup>, which must try to mitigate the disorder affecting the new Republic which, of course, is under the toxic influence of its other chaotic sister: the *Political Republic*. The first Republic, the scientific one, is the domain of the deterministic; the second, supposedly more political, the reign of uncertainties: “One must establish what the limits of scientific fact really are, where science ends and trans-science begins” (Weinberg, 1972, p. 216).

Both republics are different, not just in the questions but in the procedures that they must follow in order to take decisions: if the question is scientific, then we use debates among experts and *peer review*, and other Science-like methods; if the questions are trans-scientific, procedures of the ordinary political processes –identifying priorities and values in a determined social context- or adversary procedures – where advocates of different

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<sup>9</sup> An expression Weinberg stole from Polanyi, Michael, "The Republic of Science: Its Political and Economic Theory *Minerva*, I, 1 (Autumn, 1962), pp. 54-73.

positions direct their arguments in front of a body or person empowered to decide- are the most convenient. Another way to solve these questions about a technoscientific issues, following Weinberg's delimitations, is by improving technology, so it can solve the problem by a technical movement (e.g. if there is controversy about the emission permitted by nuclear plants, then building new infrastructure that decreases this emission could solve the controversy).

Science, for Weinberg, can be damaged by public "intrusion" (that is, an aggression from Republic Trans-Science!), and this should be allowed only when "all the facts are in" (Weinberg, 1972, p. 221). This "intrusion", which can promote political pressure and the taking of improper decisions, is, somehow inevitable, and increasing in controversies and in more democratic societies, as the author uneasily recognizes:

The republic of trans-science, bordering as it does on both the political republic and the republic of science, can be neither as pure as the latter nor as undisciplined as the former. The most science can do is to inject some intellectual discipline into the republic of trans-science; politics in an open society will surely keep it democratic (Weinberg, 1972, p. 222).

Now, if Science cannot know with 100% certainty something about a given phenomenon, this can be problematic for the regulator, the person who will have to take a decision even if there are uncertainties. The regulator's decision, in this context, is what Weinberg will call later the Regulator's Dilemma (Weinberg, 1985, p. 257).

As a response to those sociologists of knowledge who started to say that science is "constructed", that scientists "hold different non-scientific beliefs", that they have "aspirations" and "negotiate" truth, to sum up, that science is not the way many philosophers and scientists believe it is, Weinberg postulates a "new branch of science" to tackle these questions and critiques.

One way to deal with these assaults on scientists and scientific truth would be to define a new branch of science, called **regulatory science**, in which the norms of scientific proof are less demanding than are the norms in ordinary science (Weinberg, 1985, p. 264)

Following Jasanoff (1985, p. 201), this concept- *Trans-Science*-, can be used as a kind of justification in order to reaffirm scientific professional authority, suggesting that the uncertainty that arose from regulation processes is not part of Science, but are beyond its

boundaries. For Jasanoff scientists' authority is jeopardized when they are involved in policymaking because it is quite often that agencies, looking for scientific advice in controversial issues, ask questions about *facts* that are not as solid as required for scientific determinations. In policymaking process there is a process of deconstruction of science, which involves the exposition of uncertainties and possibilities that were "hidden" in non-controversial events. In Colombia, as in USA, the regulation process is done by administrative agencies, like Institute Alexander von Humboldt (IAVH), a dependence of MADS, in the case of biological collections. As these agencies have to handle with multiple actors and problems that touch different topics of interest, there is always a need for "overlapping" processes, from Science and Law.

Governmental regulation of risk in the United States thus creates a partial overlap between the processes of scientific and legal inquiry and gives rise to competing claims of authority between science and government, particularly concerning the right to interpret the findings of science. (Jasanoff, 1987, p. 198)

Both, lawyers and policymakers, can judge scientific cognitive authority, but there is a lack of reflexivity, Jasanoff says, among science community itself about its own limits and political influences in the Republic of Science, so, distinctions made by scientists and others in controversies and regulatory processes are "politically charged" (Jasanoff, 1987, p. 224).

For Weinberg, we have to make emphasis in differences among Science and Trans-Science, meanwhile Jasanoff denied these solid republic's frontiers. In her book *The Fifth Branch* (1990)<sup>10</sup>, Jasanoff –quoted on (Macfarlane, 2003, p. 798)-, says that basic science is differentiated from Regulatory Science due to its place of production: the first one is done at universities, published in specialized journals and under peer review; the second, is generally built on governmental institutions, industries and other non-traditional places for scientific knowledge production. Its product is not generally published but collected in reports.

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<sup>10</sup> The Fifth branch would be constituted for the *technical experts*, an emergence branch of political power with an increasing role in modern society due to the involvement of Science and Technology in "big issues", economic support from governments and industry, and higher cognitive authority as provider of truth and technical solutions.

Under the heading of science policy, McGarity included three broad types of issues: first, questions that are cast in scientific terms, but are inherently unanswerable by science for practical or moral reasons; second, questions that cannot be answered because of insufficient scientific data, but are theoretically subject to resolution given adequate time and resources; and third, questions characterized by expert disagreements about either the interpretation of scientific studies or the inferences drawn from them (Jasanoff, 1987, p. 204).

The constitution of credible scientific advisory committees for the production of reports is also important for making policies for Science. These committees are considered quite important today for governments (as will be shown for our case in subsequent chapters), but in some instances, regulation processes have been considered “an obstacle for development and technological innovation” (Jasanoff, 1990). These obstacles for science and development will be an evident matter of concern for our own actors.

Jasanoff practically equates Weinberg’s “Trans-Science” with McGarity’s “Science Policy”. For her, there are characteristic share among them, but the last expression is most frequently used in discussions “of science-based regulatory decisions” (Jasanoff, 1987, p. 204), and can be considered a subfield of policy-in-general<sup>11</sup>. On the other hand Jasanoff consider *Science Policy* as different from *Regulatory Science*, the latter will be explain in a later section, the first associated to policies for “encouraging, fostering, and promoting science” and also for the “use of scientific information in public policy” (Kurihara & Saio, 2011, p. 179). But, in any case, if there is an absence of definite assessments, then, we are in the reign of “science policy”/ “trans-science, following Weinberg. But for other authors in Science Policy the boundaries must be defined by regulators, not by scientists, because the former are the ones that have to decide at the end of the regulatory process. But of

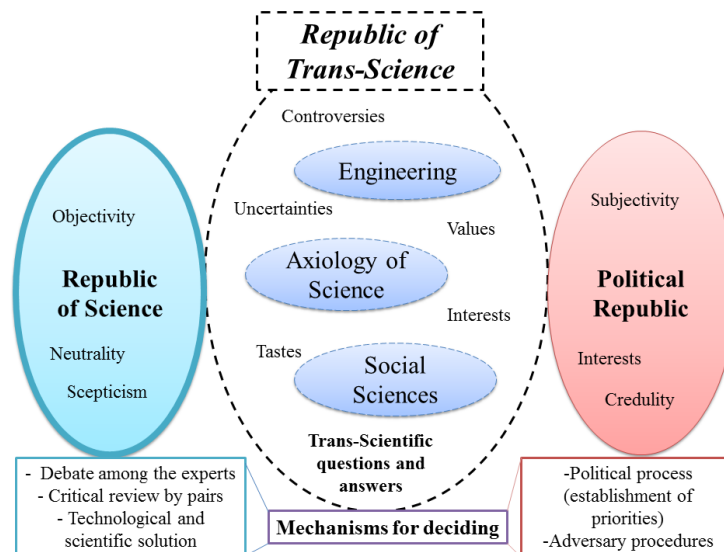
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<sup>11</sup> In fact, *Wikipedia*’s first description about *Science policy* is a categorization in the way mentioned above: “Science policy is an area of public policy which is concerned with the policies that affect the conduct of the science and research enterprise, including the funding of science, often in pursuance of other national policy goals such as technological innovation to promote commercial product development, weapons development, health care and environmental monitoring. Science policy also refers to the act of applying scientific knowledge and consensus to the development of public policies...Science policy thus deals with the entire domain of issues that involve the natural sciences. In accordance with public policy being concerned about the well-being of its citizens, science policy’s goal is to consider how science and technology can best serve the public”.

course controversies unfold many different kinds of authorities which in varied instances co-bound limits of Science and Policy, when treated as essentially different phenomena.

Following this delimitation debate, a natural question arises: Can Science really delimit its functions in process of policymaking?, Can it be immune to those supposed “external” political influences?, Can it be apolitic? Is it credible that Science, if it could be isolated, would have this solidity? Does it inhabit *Certainty Kingdom*? These questions have been handled in distinctive ways by STS scholars; however, what STS scholars believe is not the same as many other actors. This delimiting of the Republic of Science is useful, not because I believe there is such distinction “in reality”, but because it can be understood to be a result of the boundary work that actors undertake in circumstances where Science, Society, and Politics collide.

**Figure 1-1: Trans-Science Model.** The “Republic of Trans-Science” has elements of the “Political Republic” on the one hand, and the “Republic of Science” on the other (Weinberg, 1972, p. 218). For Weinberg the delimitation effort is mainly a responsibility of scientists. Each Republic has different associated characteristics (e.g. “Objectivity” inhabits the “Republic of Science”, meanwhile “Interests” is appropriate for the “Political Republic”). As Trans-Science is in between the others, it reflects this mixing nature and is constituted by “States” like “Engineering”, “Axiology of Science” and “Social Sciences”, so, this means it cannot have Science’s authority because of its Political influence. The wider bold line of “Republic Science” reflects Weinberg’s and others belief about Science’s independence and strong “walls” which protect it from the other Republics’ attacks and intrusions (Figure based on Weinberg 1972, 1988; and own considerations).



### 1.3. Complexities in Regulatory Processes

Many controversial cases in which there have been demands for the regulation of Science, or processes that involved scientists, have emerged as an issue of wide public concern. This can be a reflection of seen scientists as the ones “first to perceive effects and processes that may be harmful to humans” as a “warning system... the human equivalent of the canary in the coal mine”. (Rykiel, 2001, p. 436). Complex phenomena and the increasing technological and scientific innovations can produce fear in publics, so, scientists are demanded to be aware of the regulation of their own activities.

Cases where scientific advice is given for making policies or regulating different social activities “has been one of the classic themes of science studies” (Wynne, 1992, p. 745). *Scientific regulation* “was born as a form of regulation that is simultaneously caused by science and dependent on science in the search for relief” (Schmandt, 1984, p. 26). There is also a global interest for standardizing regulation across countries. This has seen the emergence of movements of actors who go from laboratories to industries, from one country to another, looking for universalization of regulatory norms. Success in this endeavour can have effects as such as promoting trust between nations, and between different sectors of society, as mentioned for the case of the Europe wide regulation of agrochemicals (Rothstein, Irwin, Yearley, & McCarthy, 1999).

If scientists are asked to give advice, what is required of them on the part of traditional policymakers? Possible answers are: *Certainty, Security and Veracity*. The first point to be considered, one that makes the advisory process difficult -following Ludwig, Mangel, & Haddad (2001)- is about uncertainty: scientists do not always can make predictions, as they can recognize without problem, but this lack of certainty seems to be attributed to: *i*) the absence of good methods; *ii*) external noise (from uncertain sources); *iii*) the appearance of complex phenomena, like climate change, whose nature is uncomfortably unpredictable.

Whatever the cause, lack of predictability can decimate scientific credibility, an *outcome* nobody in the Republic of Science wants. In fact, what policymakers and others ask from

Science is factuality (Callon, Lascoumes, & Barthe, 2004). How can this be solved? Well, Ludwig & Cia (2001) suggest a “method answer”: a complex era requires more complex scientific methods, that is, the answer is *the method*, a complicated one of course (the usual answer of many scientists: “do you need good answers?, then you need a good method”). Analogously, Schmandt (1984), considered that the complexity of phenomena is a problem for science regulation: if the effects of chemical products are extremely long-lasting, how can we regulate their use, production or disposal? How many unidentified products have health effects and we still do not know? How much money and time should be spent on developing new knowledge than can help us regulate scientific products? What are the synergetic effects of substances which make them more unpredictable? Those questions are important and constitute different sources of uncertainties though they aside the effect of economic or political beliefs as sources of uncertainty and inefficiency. On the other hand, Ludwig, Mangel & Haddad (2001) also suggest that ecologists – a concerned group for the authors- must enlarge their cognitive frontiers and get ready to learn about law, psychology, history, etc., so they can have a better perspective about these complex issues. Though this advice takes into account plurality of disciplines and topics, multidisciplinary does not mean that multiple interpretations are bound to be considered; in other words, an ecologist with multiple pieces of knowledge from different field is not an adequate substitute for the participation of different actors in any one case of interest.

Certainly, uncertainty is not a characteristic that lives exclusively “out with Science”, but exposing unpredictabilities, controversies and undeterminancies can “undermine public confidence and raise troublesome questions about whether scientists really deserve the symbolic and material rewards they have claimed from society in this century” (Jasanoff, 1987, p. 199). Moreover, Callon et al. (2004), think that *hybrid forums*, those that allow participation of multiple “lay” or “experts” actors are important to express those uncertainties that help scientists and concern groups to think in other *states of the world*, to ask different questions, to take into account local knowledge, personal expertises, to think in different problems of a given solution. So, instead of hiding uncertainties we can take advantages from multiply them.



According to Ludwig, Mangel & Haddad (2001), another issue to take into account in the process of taking decisions is that of *communication*. If the language is too technical, it must be softened and compressed in an appropriate way in order not to be distorted. If there is a meaningful distortion of the science's messages, places like industries or government institutions, from this perspective, can go against scientific interests. Scientists then must make a great effort to communicate their messages properly so stakeholders can understand the content enough to make a good decision. This communication issue was also recognized by the *Ecological Society of America* which held a symposium in 1999. One of its multiple goals were to understand if communication among scientists and non-scientists is influenced by values and language, and to explore how scientific information is "translated" in legislative and management decisions (Rykiel, 2001). Following Wagner (quoted in Rykiel, 2001, p. 434) the best thing scientists can do is to be as neutral as possible in playing the role of analyst to environmental policymakers. Meanwhile other scientists such as Mooney & Ehrlich (1999), consider that scientific intervention must not be passive and should reflect what they consider most adequate for people and ecosystems (Rykiel, 2001, p. 434). Therefore, scientists must have a political position, even if it is uncomfortable and risks a loss of credibility in public sphere.

Nevertheless, Rykiel, though recognize that science is permeated by politics and values, asserts that "the best that scientists and anyone else can do is separate, to the extent possible, what they believe to be objective reality from interpretations coloured by their value systems" (Rykiel, 2001, p. 434). This denaturalizing exercise is an ideal that many scholars from STS would consider impossible, due to their perspective for considering politics and values intrinsic to the enterprise of Science itself just like any other human activity. The suggestions of Rykiel and others are based on their belief that if scientists show a political agenda, or other science-extrinsic interests, during the advisory process, their credibility would be doomed and "compromise the integrity of the scientific process and its potential contributions to society" (Rykiel, 2001, p. 436). Taking decisions in regulatory processes can be also affected by an argument's provenance (Do they come from Governments? From Universities? From industries? From churches?), rather than its

contents (Irwin, Rothstein, Yearley & McCarthy, 1997). This constitutes another element to take into account for policymaking in order to ensure the beloved unbiased positions.

Naturally, when *contesting objectivity and scientific honour*, especially from a relativist understanding of the production of Science, questions from some authors arises: Rykiel (2001, p. 434) states that “if there is no objective reality; if there are multiple, equally valid objective realities; or if there is no way to separate objective and subjective realities, then there is no point in trying to be objective and claims of objectivity are therefore false”. Opposed to what they see as a *postmodern attack*, Ludwig, Mangel & Haddad (2001, p. 505) state that “in the context of our main discussion, words about words may contribute little to the solution of wicked problems. Indeed, not all aspects of the social sciences will be helpful in finding solutions, and we need to think carefully about which aspects of the social sciences can contribute (or at least not make things worse)”. So, besides insisting that Science is something that must be politically cleansed, these authors also delegitimise other scholar’s critics as vacuous, or as obstacles for finding solutions and taking decisions. Science (meaning the Natural Sciences) appear as a model to follow, where policymakers must deal effectively, at least for environmental problems, “with scientific data that are accurate but not precise” (Ludwig, Mangel & Haddad, 2001, p. 505). This humble observation armours Science against critique, reflexivity and deconstruction. So, if the objectivity of science is put at risk, it is because it is been influenced by the decisions made in other republics. Science is always innocent.

Questioning objectivity is natural in Science discussions but, if scientists are involved in these *other* topics that inhabit other republics, then questioning objectivity becomes inevitable.

Experience has shown that when science is used to support policy-making, both the science and the policy are altered in fundamental ways. The idea that science can be completely objective and value-free cannot be supported in such a context. The closer the issue is to fundamental human goals and aspirations, the more difficult it is to separate scientific conclusions from other influence. Scientists cannot expect to be granted a privileged position in environmental deliberations; they will have to devise ways of communicating their insights to a variety of people, some of whom may have quite different values and ways of knowing, and opposing interests (Ludwig, Mangel & Haddad, 2001, p. 505). [Highlight is mine].

This quotation exemplifies Weinberg's perspective in which Science, when it leaves *its proper place*, risks losing objectivity, but it also states that Policy can be changed by this interaction. It has been shown that scientific knowledge influences political decisions and, to the contrary, that political decisions can constrain or alter scientific knowledge production, as exemplified with disposal of radioactive material in *Yucca Mountain* in United States (Macfarlane, 2003). But if there are passions and interests on the middle of Science and Politics, then there are problems in order to know what the "scientific part" is. So scientists, for supposedly being in a *superior epistemic position*, look also to be in a *superior moral position*. Therefore, they must learn how to contend with "interested people" who can be obstacles or divert scientists from their correct scientific way of doing things. In that regard, if one decision has a "bad effect", even if this decision was taken considering the best scientific knowledge at disposal, the scientific quality of this knowledge cannot be judged by this effect, because in regulatory processes "the political" will always have a dominant character (Schmandt, 1984, p. 33). It is in "the politic part" of the interactions where mistakes are expected to abide.

The previous perspectives show us a treatment of Science as something that "get dirty" by being involved with values, interests, prejudices which are present in taking decision-processes. So, the image of Science is that of a value-free and politics-free system, with the responsibility for giving a clear language in order to be understood by lay people to avoid misunderstandings. This is the "deficit model" for the public communication of Science, which consist of a group of experts trying to explain "difficult issues" to an ignorant group with no participation in knowledge production (Bensaude-Vincent, 2009). These positions also suggest the necessity of distinguishing between facts and interests, content and values, science and politics. Such delimitations intend to avoid compromising scientific credibility, and thus legitimate the notion of Trans-Science proposed, a long time ago but still relevantly, by Arvin Weinberg.

## 1.4. Perspectives in Regulatory Science (family *Regulatoridae*)

*Rather than simply defining regulatory science by its purpose, we see that it can represent a specific set of assumptions and practices. The implication is that, far from offering a universal and objectively determined basis for common standards, regulatory science can vary substantially across policy settings and decision-making processes.* (Rothstein, Irwin, Yearley & McCarthy, 1999, p. 243)

For me a definition is not as important as *perspectives and effects* associated to a specific expression. Writing this thesis we have read expressions considering topics of Science and Policy, like “scientific regulation”, “Science policy”, “Policy for Science”, “Policy-Relevant-Science”, and “Regulatory Science”, and surely there are many others alike in literature that compress what I call *Regulatoridae* family<sup>12</sup>, which can be understood as group of perspectives to understand relations on Science, Policy and making-decision processes. Here I am not going to give definitions of each of them, delimitate them, and choosing the better option for analysis. A practical and not-so-academic election was already made: *Regulatory Science* for the moment has been explored briefly.

*Regulatory Science* is sometimes defined as different from *Academic Science* and “suggests some of the key scientific and institutional challenges of our age. Its hybrid and heterogeneous nature should not disqualify it from academic treatment but rather serve to reinforce its significance for future research and policy-making” (Irwin, Rothstein, Yearley & McCarthy, 1997, p. 30); It represents a specific subset of practices and suppositions that can vary depending the political context, and local decision processes (Rothstein, Irwin, Yearley & McCarthy, 1999, p. 243). For authors as Schmandt (1984, p. 26, 33), Regulatory Science “through the accumulation and interpretation of data, has the task to link policy concepts to scientific evidence in a responsible and verifiable way” and “delineates the problem and the range of possible action, and it provides a vehicle for the rulemaking process. As a result, science assessments and other regulatory analyses are prepared as a regular and integral part of rulemaking, requiring large agency resources, and involving large numbers of agency staff and consultants”. For Dr. Mitsuri Uchiyama –

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<sup>12</sup> A *family*, for taxonomists, is a categorical rank between *order* and *genus*. When designating family name, it is use latin suffix *-idae*. Members of any family must share some characteristics in common (for example, humans and gorillas belong to the same family *-Hominidae-* in part because are tailless primates). Though a posterior research will have to involved a wider research in members of *Regulatoridae* family – such as Science Policy- no significant bibliography was consider for this thesis from this other family members.

a proponent of Regulatory Science concept from Orient- it can be understood as “the science of optimizing scientific and technological developments according to objectives geared toward human health” (Kurihara & Saio, 2011, p. 168), so it would be the way to use basic and sound knowledge for society interests. Shackley and Wynne (1995) have argued that regulatory science should be seen not just as a “sort of hybrid of science and policy” but as part of a larger process of “mutual construction.” According to this perspective, science and policy do not simply interact on occasions but instead build upon one other so that political assumptions form a key but unacknowledged element within scientific risk assessment, and scientific assessment in turn serves to frame policy (Rothstein, Irwin, Yearley & McCarthy, 1999, p. 243).

The importance of this member of *Regulatoridae* family is so high today that there are even many programmes for educational training on the field, of course, multiple interpretations are expected. For example there have been created places for specific training like the International Center for Regulatory Science of University of Southern California which also offers an MS and Doctorate programme in Regulatory Science. The Thomson Reuters Centre for Innovation in Regulatory Science (CIRS) which was born to show “the important role of providing a neutral forum in which senior executives from pharmaceutical companies, government regulatory agencies and academia could discuss current issues in an open-minded, intimate, and interactive environment” (CIRS, 2015). For the University of Southern California (USC), professionals in this area are of increasing importance because: 1) “There is a global need for medical products that ensure safety for all consumers”; 2) need to take into account knowledge from different field and “build on existing skills”; 3) need to “connect with experts in the industry”; and, 4) it is a field of complexity due to “standards of medical care vary, and affect the way products are used”. For USC “Regulatory Science relates the regulatory and legal requirements of biomedical product development to the scientific research needed to ensure the safety and efficacy of those products”. They define it as an emerging and growing profession, thanks to pharmaceutical growth. Regulatory Science looked to be of higher importance, mainly for pharmaceutical industries, and related to their own legal and scientific need, but also to food related sectors (see Box 1).



## Box 1

### Regulatory Science following FDA (Food and Drug Administration of USA)<sup>13</sup>

For FDA Regulatory Science is a theoretical and methodological frame with important application aspects. For them, this field implies the science of developing new tools, standards, and approaches to assess the safety, efficacy, quality and performances of regulated products (Breckenridge, 2014) (FDA, 2010, p. 3). In other words, Regulatory Science allows innovation, universalization of protocols, in order to determine if a product is good for consumers. These are requirements asked for publics and governments.

In a *youtube* video named “What is Regulatory Science?” the FDA launches very important people (majority of them with PhD of course) answering this “very important” question. Let us consider some of their answers (highlight is mine).

**Margaret Hamburg (Commissioner of Food and Drugs).** One kind of science that touches your daily life and is the foundation at everything we do at Food and Drug Administration is called regulatory science... Thanks to regulatory science at FDA you can expect that the drugs your doctor prescribes or the contact lenses you wear are as safe and effective as you expected to be... We call it regulatory science or whatever you call it it’s making a difference in all our life’s every day.

**Vicki Seyfert-Margolis, PhD. (The video does not mentioned in which area she received PhD, perhaps Medicine, but it does not matter, She is a PhD!):** When most people think about medical research in science they think about the scientists discovering new genes, proteins, networks or cells that are involved in maintaining health or propagating disease but most people don’t think about or appreciate all over the science and innovation that it takes to turn these discoveries into a new therapy for patients or understand how well these therapies work in larger populations or to evaluate the safety, effectiveness and quality of these products this science is regulatory science.

**Steven Musser, PhD (Another PhD!!).** You should be concern about regulatory science because it keeps your food safe. For example, FDA is using whole-genome sequencing much like the FBI uses it in tracking down criminals, we use it to track down pathogens, and we do that because it follows a fingerprint from the path that let us keep your food safe. We can trace the rare occasions where villainous weather Salmonella or Listeria or other deadly food pathogens were quickly, back to the source keeping your food safe, so that when you go into restaurant, you are going to a grocery store you can be assured that their food is safe.

**Douglas Throckmorton M.D. (Poor one, he is not a PhD).** We should all care about regulatory science because it’s an important part of developing new medicines for important diseases like Alzheimer’s, Cancer and Diabetes. First, it help us to identify what patients are likely to benefit from the uses of new medicines; help us identify those earlier with better precision. We’ve recently been able to use regulatory science to identify what patients with viral hepatitis and certain

<sup>13</sup> This box is designed thanks to FDA video answers to the question “What is Regulatory Science?” (You can see it in <https://www.youtube.com/watch?v=Ei38dgvaXp0> or for a shorter version <https://www.youtube.com/watch?v=yKq8WZOZnDSU>).

kinds of cystic fibrosis are gonna benefit from the uses of new medicines and approve those medicines. Second, regulatory science is giving us new tools to predict the safety of drugs earlier so that the adverse effects don't happen to patients and if they do they can be treated more quickly.

**Steven Pollack, PhD.** I'm excited about regulatory science in the promise it holds for public health. We are involved in working with an artificial arm. The conventional artificial arm can lift an object, can hold an object but the patient cannot feel anything. If we can get an arm that also give sensory feedback, that tells the patient that is a hard object, a soft object, that's gonna be really enhance their life and their ability to interact with the physical world. To do that, we need to have a way for the artificial limb to talk directly to the brain. We are involved in research that ensures that that connection is stable and that the signals are always free and the last for the life of the patient. If we can achieve that level of connection over artificial limb to the brain, patients that have lost a limb, or who have had an injury, have a much better quality of life. For me that's very exciting.

**Steven P. Spielberg, M.D., PhD. (Do not confused with E.T's Director).** A growing understanding the human genome has opened new horizons for understanding the mechanisms of disease for developing new diagnostic test to uncover the cause of individual patient's symptoms and for developing new medical products targeted to specific causes of illness. This is the heart of personalized medicine; the right dose, the right medicine for the right indication for the right patient. Regulatory science hopes us convert therapeutic innovation into practical approaches; the speed the development of new products to assure the efficacy of those products and to improve the diagnosis and treatment of all patients.

Regulatory Science, for FDA stuff is a genuine Science; it is highly related to drug, food and science production; it allows innovation; it ensures safety; it helps to fight mainly microscopic "villainous"; to get certainty about products characteristics; important for public health issues; it is something that catalyse new methods for doing good and expected things; it is present in your daily life (even if you have never heard about it) and you should be concern about it (and presumably, finance it), nothing bad is related to this important field of knowledge, then...

**Juan Pablo González (just a biologist candidate to a Social Master degree).** Regulatory Science is everything a group wishes! (considering historical and cultural constraints).

Contrary to those FDA scientific-fan-comments, Sheila Jasanoff (1985, p. 196) have criticised the authoritative status of science as a truth provider. For sociologists of science facts are socially constructed, the truth is a certified consensus by a community, methods and theories are chosen not just by the force of the arguments, and knowledge is contingent and relativistic (Jasanoff, 1990). If Science itself has been put under question respecting to its nature, power and form, we can doubt about Regulatory Science, or similar, as the universal remedy for all ills: if science is not the holy grail, then we cannot expect that one of his hybrid sons is going to have that role.

In an interview made by Japanese scholars Chieko Kurihara and Takeo Saio in August 25 of 2010, Sheila Jasanoff, whose work has focus on controversies in regulatory processes in United States and is well recognized as an important academic of Science and Technology

Studies (Also a PhD!), made some clarifications about the concept of Regulatory Science. In first instance, Jasanoff differentiates *Trans-Science* concept from *Regulatory Science*: the first was an effort to define an area where Science cannot give answers (an area that, at the same time, will served as a shield from attacks to Academic Science, so diminishing responsibility in controversial decisions); the latter, Regulatory Science<sup>14</sup>, looks to give answers to questions in order to advance in policymaking, it is the knowledge required by agencies demands requiring “standard setting based knowledge” (Kurihara & Saio, 2011, p. 169), and in fact, scientists are ready to give advices for policymakers (or even *becoming* policymakers, as I will show later in my own case). In process of Regulatory Science, there is always bias, even in pure Science as STS scholars have said. “it’s a mistake to say that pure science has no biases and that policy introduces biases into science” (Jassanof in Kurihara & Saio, 2011, p. 169). For the author, Regulatory science purpose is not to give “the truth”, but a “serviceable truth”, that is, a knowledge that allow you to do a specific job, which in this case consist in serving for regulatory decision making. Its knowledge is produce in a different context (e.g. in regulatory agencies), with different requirements, and involving heterogeneous people. This does not mean that research science is out of context and composed of homogeneous teams. But, some characteristic of its productions are different (places, publications, people, interests, methods) and is constraint by “very specific legal requirements”. *Research science*, is practiced at universities, stays a place of relative consensus and paradigms (very relative I can add) and their methodologies are relatively clear (*Ibid*). On the other hand, regulatory science is most controversial, constraint by less time and more diverse stakes and “subject to political considerations” (Jasanoff S. , 1995, p. 282). But let us remember that Science, the pure one, is not so pure, it is also controversial and “subject to political considerations”, an aspect Jasanoff and other STS scholars believe (for a wider comparison among these “Sciences” see Table 1-1).

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<sup>14</sup> Jasanoff presented herself as the creator of the expression *Regulatory Science*, a term she recognizes could have been used by other authors previously but not in the context of Science and Technology Studies. Here the origin of the expression and its pioneers is of any relevance.



**Table 1-1:** Comparison among Regulatory Science and Research Science (Based on Jasanoff, 1995). Words on blue are additions made by me to Jasanoff original work. Some of these “adds” will be justified later on developing my own case.

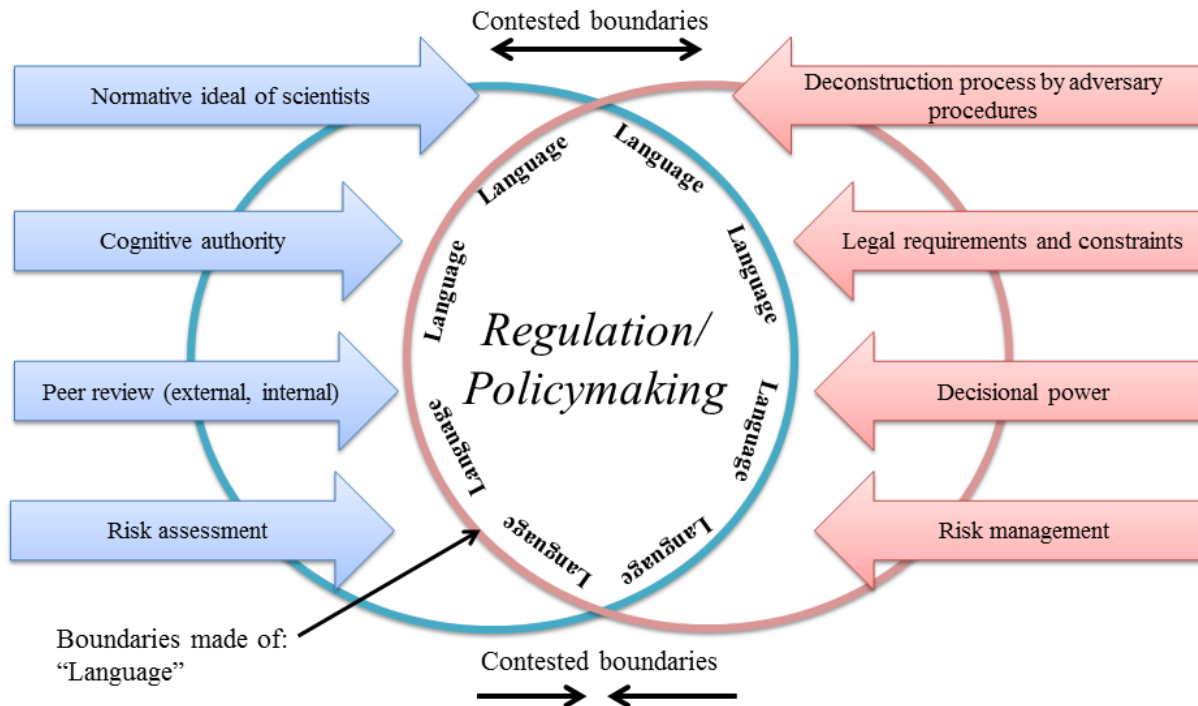
	<b>Regulatory Science</b>	<b>Research Science</b>
<b>Goals</b>	“Truths” relevant to policy	“Truths” of originality and significance, and relevant to institutions goals (universities, colciencias)
<b>Institutions</b>	Government, industry, Universities	Universities, Centers for research
<b>Products</b>	Studies and data analysis, often unpublished, news, web notifications, public announcements	Published papers, mainly positive results, divulgation articles, institutional informs, laboratory informs, negative results, colossal non-processed data, specimens
<b>Incentives</b>	Compliance with legal, industrial, scientist, public requirements, and advancement	Professional recognition, compliance with funding institutions and advancement
<b>Time-frame</b>	Statutory, timetables, political pressure	<del>Open ended</del> , institutional pressure, timetables according to projects, non-humans factors associated (when studying biodiversity)
<b>Options</b>	Acceptance of evidence, rejection of evidence, waiting for more data, all previous	Acceptance of evidence, rejection of evidence, waiting for more data, all previous
<b>Accountability institutions</b>	Congress, court, media, professional peer	Professional peer, media, non-professional peer (e.g. scientists from other fields)
<b>Procedures</b>	Audits and side visits, regulatory peer review, judicial review, legislative oversight	Peer review, formal and informal
<b>Standards</b>	Absence of fraud or misrepresentation, conformity to approved protocols and agency guidelines, legal tests of sufficiency (can include statistical procedures)	Absence of fraud or misrepresentation, conformity to methods accepted by peer scientists, statistical significance

In development of regulatory processes, there is a constant work to delimitating where Science ends and Policy starts. Science gives advices and Policymakers makes decision? In some instances, however, Scientists influence non-technical issues in a specific case.

Contrary, agencies, policymakers, and industries can delimitate things like research design (how many money, time, structures is going to cost?) that supposedly is a criteria merely scientific (Jasanoff, 1995). On the other hand, another aspect to take into account is the constitution of *the forum*, that is, the people, including scientists, who must be involved in process of advising and policymaking. If people “out the forum” consider that its constitution is political charged, it can be problematic for conflict resolution. One strategy to handle this issue is to elect a “representative range of scientific and philosophical positions” (Jasanoff, 1995, p. 290), which is consistent with a constructivist point of view, due to this election considers precisely that many scientists have particular bias due to their own particular perspectives, which implies that one scientist “A” is not the same that a scientist “B”, just because they belong to “Republic of Science” and supposedly act neutrally, based on a single scientific method, and just looking for what Nature says. If a forum for decision and advising is considered biased, or if positions are very different, controversy will emerge, and the process itself could be delegitimized.

Another important aspect in these regulations processes is that of establishing *objectivity*. For different nations there are differences in order to establish solidity in controversy, considering issues like incidence the kind of methods used by independent expert advisers (USA), the social status of those who giving advise (England), or the collective witnessing of demonstrable facts of representative of different political factions (Germany), all those factors being important in order to stablished the *objective* and as an argument –due to its variability among nations- to consider objectivity as “a cultural product” (Jasanoff, 2011). A common problem is deciding which knowledge is *objective* in Science, and once established, which interpretation for doing policies is also objective (Jasanoff, 2011). Of course both scenarios –mere scientific or politic or likely both- can be contested and both arises controversies. But, one more time, Science, with its prominent cognitive authority, render the whole process a little more confidence that if it is absent.

**Figure 1-2:** Regulation/Policy-making Model. When regulation or policymaking processes are demanded, it emerges a series of delimitating work from different actors in order to define roles and authorities. These contested boundaries are continually made by means of language. In this model it is considered factors from different expertises which characterize historical disciplines but no clear delimitation or influences are considered. (Figure based on Jasanoff reflections, 1987, 1995 mainly and my own considerations).



Concerning those previous issues about regulation, policy and science, rests the general topic about taking decisions. How people chose to do what they do? How is the conformation of heterogeneous forum in order to affront a complex topic? What are the mechanisms in order to establish a way, a method, to decide? Who decide for us? Those questions are not easy to solve, and will be determined in part because of our categories we use in order to describe, analyse, and write about a particular case. So, *answers* are situated on space-time, on context, and are also contingent. Summing up, and reminding this is an exercise for "doing taxonomy", we can say that, and I hope you will *see* it in following sections, that our concern case is an *hybrid controversy* because it involves different actors other than scientists that experiment moments of tension, differences of expertise and opinions, and in some instances using diverse attacks in order to change a state of the world. I will mention policymakers, lawyers, environmentalists, indigenous people, and administrators but more specifically, I will consider interactions with lawyers,

and biologists. Being more precise, and as mentioned before, biological collections regulation and permissions of collecting is going to be central in this thesis. This case involves a scientific practice –collecting- and a series of actions that promoted a change in his regulation; so, we can classify it initially as a *regulatory case*, a member or *Regulatoridae* family. On the other hand, though this would be a case exemplifying *trans-science-in-action*, I will do an effort in order to show that what I have named as Weinberg's Model is naïve, and, that in fact, some of the models and perspectives about regulation of science mentioned before are linear, deficient and cannot be applied easily to mine research case. So, my case will not be put under Weinberg's taxonomic group, but, it will be useful in the sense that many actors of my case could think it is a proper taxonomic classification for it (especially by means of their boundary work). Some discussions about a specific member of *Regulatoridae* –Regulatory Science- is going to be into account, without pretending to fit my case in this taxonomic unit without doing work. As I will try to do next, regulatory process does not involved just the process when advisers and policymakers join together in order to change a state of the world. Instead, I will mention some other interactions that look fundamental so that a new way for doing things is established. Of course, others taxonomies will be put by you, my invaluable reader, and you will get it not until you read the complete document. But before that, it will be necessary to point out some aspects about why biologists –and some non-biologists- legitimate the scientific practices and the objects under discussion: Why is it important to collect and create biological collections to begin with?

## 2. Collecting for a Dream



*Latour and Mutis collecting*

When a biologist goes to field work (S)he generally collect specimens<sup>15</sup> from specific taxa<sup>16</sup> depending on his/her research or educational purposes (collecting can also be accidental, that is, sometimes non-pretended specimens “fall” on traps not design for them). It would be very odd to see Professor Lynch, for example, collecting grasshoppers, bats or hummingbirds, because -as everybody knows (in our reduce peripheral biological circle in Colombia)- his taxonomic interests are *herpetofauna* and not quite often researchers, including those dedicated to taxonomy and systematics, change their “organismic interest” (of course, changing in biological interests is allowed, but in an Era with “specialistis”, this is becoming quite uncommon). Undergraduate students, on the other hand, in their processes of learning about different biological groups, in their introductory courses for acquiring knowledge about biodiversity, systematics, taxonomy, capturing techniques, and learning habits of proper behaviour in the field, are engaged in collecting everything it moves. As professor Lynch told me - in his soft voice but harsh style- about his young students’ behaviour in the field: “they collect even garbage” (a pejorative expression for denoting a lack of criteria for collecting good or interesting organisms surely due to lack of expertise).

<sup>15</sup> The word *Specimen*, sometimes can be interchangeable with the word organism, to making reference to an individual of any particular living being. But considering the definition stated in Decree 1375/2013, *Whereby regulates biological collections, Art. 3*, a specimen is “any organism of the biological diversity, alive or death, or any of its parts, products or derivatives” (*Fragment originally in Spanish, translated by me*).

<sup>16</sup> *Taxa* is the plural form of *taxon*. In a half century old article entitled *So What is a Taxon*, published in a journal named *Taxon*, H. W. Rickett (1958), says that a *taxon* is something that has no proper definition, in which taxonomist differ, but, in any case, it cannot be just a category, an abstract entity. For him, “one individual species - named, for instance, *Quercus robur* - is not, I hope, wholly conceptual. It is not an abstraction, except as all scientific data are abstractions from the raw material of our senses. It is composed of plants, distributed in space and time, having what we call objective reality; it is a population; if it is not this it is nothing” (Rickett, 1958, p. 37). For Wikipedia, “a *taxon*, a *taxonomic group* or a *taxonomic unit*, is a group of organisms that a taxonomist judges to belong together”.

*Doing collecting* is not for the *art of collecting*; at least, that is what we biologists believe. There is a *purpose* -at least in our dreams-, a meaning for all this collecting work which is in function of knowing, but also becoming, something new.

## 2.1. Collecting for *this* Sociological Research



This thesis –taking a text from different context- is a “contingent product of various social processes” (Woolgar & Ashmore, 1988, p. 1), which involved the analyst travelling to different *habitats* which constituted his sources of information: Newspapers (especially from UNAL university), recordings, (of a forum, a radio programme, a symposium and nearly a dozen interviews I made, mainly, to scientists but also to lawyers involved in decree changing and to biologists involved actively in collecting work), instances of talk-in-interaction (just talking with people here and there that in one way or another affect what I have written), normative inspection (Decrees 309/2000, 1375/2013, 1376/2013 mainly), and relevant scientific articles and books. For a timeline perspective of this material and some description of these habitats you can see Figure 2-1. For this thesis, I, as the biologist, had to collect my own *specimens*, which I define as *any text or conversation of the sociological diversity, alive or dead, or any of its parts, products or derivatives as actors, discourses, metaphors, contrast, ideologies, contexts, versions, institutions, places and so on*. For the capturing process I used easy manual techniques, which involves searching documents on official web pages (mainly from universities and MADS), doing interviews, using recording machine, and talking and writing *in situ*. These specimens constituted my own *Textual Collection*, that is, -just for the sake of giving a definition- *a set of specimens of sociological diversity preserved under specialized textual standards for each deposited groups in it, which must be duly catalogued, maintained and organized*

*taxonomically, in conformity with the methods established in the corresponding thesis protocol and that are under the management of a natural or juridical person, such as libraries, databases, catalogues, virtual repositories, and others that the Master in Social Studies of Science of UNAL considers relevant*<sup>17</sup>. Of course, this *Textual collection* is necessary incomplete, a process of selection, a constraint that all researchers -biologists or sociologists- have to deal with (so, you will not find a real *complete* chapter or an exhaustive *story*). This collection also is part of the material for creating a natural-sociological history, full of sociological and ecological interactions which can give us a glimpse of a scientific practice – collecting- and the kind of habitats, specimens, and functions –roles- that were involved in regulating it in recent history of biology in Colombia.

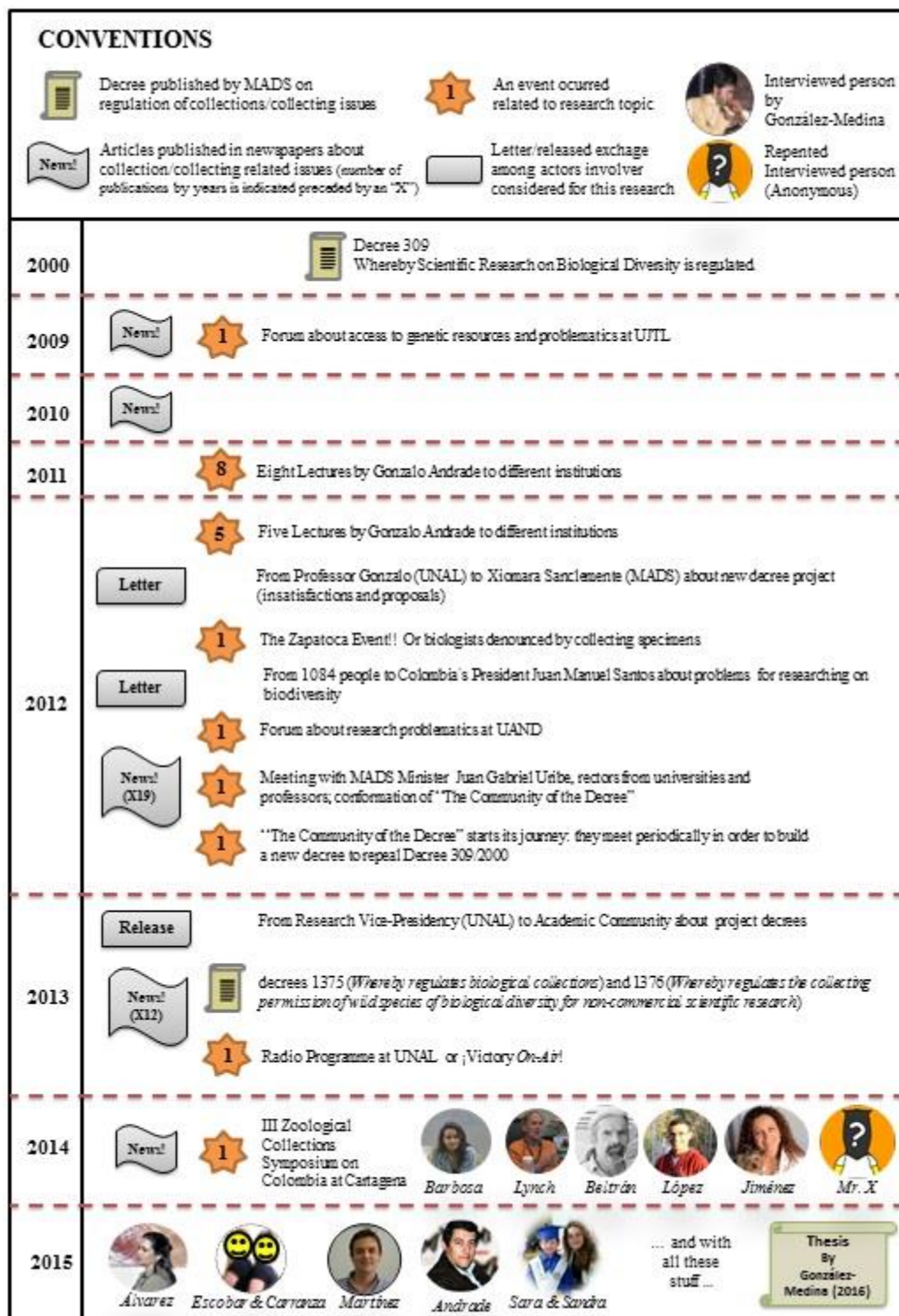
The *Textual collection*, as with a *Biological collection*, only will be useful and of any interest if its components show relationships, connections and traces. That is, if their complex and hopefully initial unknown interactions help me to construct an ecological scenario, in which specimens have roles, or, have different ecological niches which change but consolidate a set of beliefs, tensions, differences and common factors in the case of my study.

But before being even more “ecological” let me share with you a little bit of the work on categorizing taking into account some discussions about regulation, expertise, collecting work, and other issues. *Doing taxonomy* has been done by other scholars who have done studies in scientific controversies (with different approximations) and doing taxonomy will be a requirement for ordering my specimens, perhaps, to postulate new categories considering rhetorical-theoretical discussions, but mainly, for imposing a way to describe my own specimens.

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<sup>17</sup> Similarly, the already quoted Decree 1375/2013, defines a *biological collection* as “the set of specimens of biological diversity preserved under specialized curatorship standards for each deposited groups in it, which must be duly catalogued, maintained and organized taxonomically, in conformity with established in the corresponding management protocol... and that are under management of a natural or juridical person, such as herbariums, natural history museums, germplasm bank, tissues bank and DNA, (genoteca) gene center, strain center (cepario) and other that the Ministry of Environment and Sustainable Development considers relevant” (originally in Spanish and translated by me).

**Figure 2-1:** Some specimens on Timeline considering different sources of data and events about this research case. Though not all material quoted above was considered directly for purposes of analysis (for example the lectures given by Gonzalo Andrade in different institutions) I have consider three decrees, four letters/mails, three events and the information gained by a dozen interviews with biologists and lawyers involved in collecting practices or in the changing of decrees. Do not consider the timeline above as describing “all-what-happened”, ;it’s just a guideline!





## 2.2. Collecting Specimens for Biological Research



When being trained in many of my biology undergraduate courses, it was evident the huge quantity of methods developed by natural scientists for getting information, doing measuring, processing data, determining accuracy, detecting substances or specimens, transforming or manipulating life. Biochemical essays, microscopic techniques, statistical inference methods, species richness software, phylogenetic analysis, taphonomy *tecne*, etc., are important for constructing biological knowledge. But many of these methods look to implied previous work, or, a fundamental method: going to the world “out there”, to *Nature*, for collecting and preserving biological samples. After doing that, we could treat “all these natural data” in many different ways for doing systematics, molecular biology, genetics, ecology, bioinformatics, conservation biology, etc. depending on professional interests, and, if lucky and –competent of course-, using all these information and doing theoretical work to write an important article and publishing it in a prestigious journal (¡like *Nature*!).

Collecting, classifying and preserving were a series of activities intensified after Renaissance, in part, due to medical and pharmaceutical interests for getting, by hand of naturalists, to material from different parts of the world, thanks to increasing journals with commercial and expansionist purposes (Botnariuc & Jahn, 1990). Lemaitre (2002) associates increased constitution of collections as an aristocratic hobby, guided for the interest of rich people to collect “rare” natural objects from different parts of the world. In fact, the mere constitution of collections reveals “a rich story of imperialism, international scientific relations, and power structures throughout the nineteenth and twentieth centuries” (Quintero, 2012, p. 39). Explorations could have started for acquiring new lands and establishing new routes for commerce. But it was also important to establish resources that can activate economy of Empires as a result of a strong competence among European

metropolis mainly, which causes that, for the Spain case for example, that king Carlos III order to his viceroys in their colonies to promote and to collect natural history objects (Castro-Gómez, 2013, p. 104). So, constitution of collections, even with scientific purposes, have implied the action of quite different actors and interests, being science one interesting point of departure for analysing how collections and the collecting are interlaced with other realities that look sometimes far from Science.

Collecting organisms of course talk about the multiple interests and uses we attribute to *the living* –even when they are dead- as spiritual, economic, scientific, social, gastronomic nodes of multiple and overlapping networks of meaning. In Science Republic, of course, collection for scientific purposes is not often isolating (could it be?) to historical and cultural dynamics that make possible the practices and the products that constitute Science itself. Quintero (2012) exemplify how “birds, as well as plants and animals in general, become as important as the indigenous past or popular folklore in defining what it meant to be Colombian” (Quintero, 2012, p. 8). In his research case Quintero shows how the birds were one key node around which many interests and changes could be possible especially in twentieth century in our country. Trade of feathers (a collecting activity with commercial purposes) for millinery due to increase of women’s vogue demand influenced the relationships among different countries not only commercially, but on how people related to the rest of nature (for example the local hunters and native birds demanded in Northamerica and Europe), changing local economies and even ecologies (due to the diminishing of local population varieties in overexploited areas).

Expeditions of American Museum of Natural History in early twentieth century, following Quintero, were possible to the increased closed relationship among USA and Colombia, even after hard diplomatic moments due to Panama’s secession on 1903 allow USA, and help to mobilize interests through these fluxes of people and other biological specimens. For some these were messianic missions to convert people in South in order to promote their development. Thought collecting was profitable for many locals in Colombia, if possible, the scientists themselves must go to do field work to assure a good collection not only of specimens but of places, habitats, climate, to understand the environment where

organisms are collected (Quintero, 2012). That is, the specimen cannot be naked: it must contain as much as information as possible to increase its scientific value. These expeditions allow Northamericans to build big collections<sup>18</sup> of our local flora and fauna, which constitute a big flux of specimens collected, something similar to what happened with the interoceanic travel that suffer thousands of specimens in colonial period.

In what we call now Colombia, an old Spanish colony, this collecting work has been done since times of *The Royal Botanical Expedition to New Granada* (1783-1812) in a systematically way and with *scientific purpose*, besides others. This expedition was led by Spanish naturalist José Celestino Mutis, without doubt, one of the most remarkable figures of our “scientific past”. What did allow this very well-known expedition? Following Díaz-Piedrahita (1999) this was a first stage for natural sciences in our country, besides having the goals of characterizing biological resources, its possible utilities, it constituted a scenario for educational and research ends. This expedition has been considered of exceptional importance in development of Science in Colombia, and National University of Colombia (UNAL), since its creation at 1867, gestate the *School for Natural Sciences*, whose mission was to continue Mutis’ Legacy [this *School* evolved in a “Department of Botany”, and posteriorly at Institute of Natural Sciences (ICN) as we know it today (Díaz-Piedrahita, 1999, p. 519)]. Some of these academic institutions got born in liberal governments as a response to find a national identity by studying, protecting and showing our natural and cultural treasures (Quintero, 2012). Collections around the world proliferated and Colombia was also recognized, especially since nineteenth century, as a place with great potential for filling the ambition of collectors with different interests, as was the case of ornithologists (Quintero, 2012). The first registered biological collection in Colombia born at *La Salle* Museum (Bogotá) at 1904, the Colombian National Garden (UNAL, Bogotá) opened its doors at 1929, and also the biological collections administered by the today-non-existent National Institute of Renewable Natural Resources and Environment (INDERENA by its acronym in Spanish, *Instituto Nacional de Recursos Naturales Renovables y del Ambiente*) (Soacha & Orrego, 2014). More recently, as a

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<sup>18</sup> Following Quintero (2012) the Academy of Natural Sciences in USA had the biggest collection of birds of Colombia on the world by mid of twentieth century.

demand from Law 99/1993, Alexander von Humboldt Biological Resources Research Institute (IAVH) was consolidated and with it, its responsibility for taking under administration biological collections from INDERENA but also helping to regulate all biological collections in Colombia and diffusing its information for conservations and decision-making processes. *Collecting, preserving and doing taxonomy* are scientific practices now widely common in our periphery scientific world, and its importance has been recognized in our Stories of Science, but also, by private institutions and national government when the issue of development by means of promoting scientific activities are on the table.

Thought many years have happened since famous *Royal Expedition* the tradition has continued and increased dizzily. It is estimated that worldwide there are more than 2,5 billion specimens in natural history collections though year after year many of those are lost because lack of maintenance among other reasons (Cotterill, 1995, p. 186). In my country scientists and non-scientists keep collecting and co-constructing, with the help of millions of non-human actors (i.e. the organisms), many biological collections which today reach the number of 202 (at least as registered by IAVH), which comprises more than 4,7 million specimens (Bello, Báez, Gómez, Orrego & Nägele, 2014). Many natural objects on our shelves but compared with the more than 124 million objects on Smithsonian Institute, perhaps the main biological repository of the entire world (Lemaitre, 2002), our collections are still considered not big enough considering our huge biodiversity. Important scientific collections rest, and keep growing –in term of number and quality of preservation- mainly on universities, and ICN from UNAL, stand out by its awesome collection which is motive of a great biological activity –by hand of scientists and moths- and, represent a symbol of proud, as UNAL advertising repeatedly expose in its official media (Figure 4). This of course is not a new trend: when the curator of birds at the Academy of Natural Sciences in USA, Rodolph Meyer de Schauensee published his list of species of birds of Colombia in 1948, Armando Dugand, head of ICN at that moment, was very hurry to point out our high level of avifauna diversity compared to other countries like Venezuela and Brazil (Quintero, 2012). Other institutions, like Faculty of Marine Sciences, and the Sea Museum of UJTL and Institute for Coastal and Marine Research (INVEMAR by its

acronym in Spanish, *Instituto de Investigaciones Marinas y Costeras “José Benito Vives de Andreis”* (Lemaitre, 2002, pág. 63), have been of considerable importance for *collecting-on-sea*, and its role has been huge with the consequent growth of marine collections in a country with two seas. Also the old fortress of Colombian colony, the city of Popayan, also saw a prolific collecting activity which had as important institutional actor the Museum of Natural History founded in 1936 by the naturalist Federico Carlos Lehmann Valencia (Quintero, 2012).

**Figure 2-2:** UNAL Proud. Periodically, UNAL official web site ([www.unal.edu.co](http://www.unal.edu.co)) exposes in its main page images about university life. In many instances, the images presented make reference to its biological collections, focusing on one biological group (like bats, butterflies or plants) or activity related. These figures are accompanied by texts like “this collection is the biggest of the country”, “Nearly 940.000 specimens are at ICN”, and the like. So, UNAL permanently contrasts with other non-quoted collections of the country, which of course, have fewer specimens. The quantity of biological samples looks to be a motive of proud among collectors (size really matters for them). Some of these specimens are of remarkable importance because of its historical and political role like those specimens collected from *The Royal Botanical Expedition to New Granada* (the majority of them were sent to Spain). (Pictures taken from <http://unal.edu.co/archivo-de-imagenes-de-inicio/>).



In Colombia the collecting practice for research purposes has been intensified also by the emergence of undergraduate programmes of Biology and institutionalization of the profession: At UNAL, the genesis of Department of Biology was materialized in the sixties of twentieth century, and the first programme named “Biology” in Colombia was created in December 16<sup>th</sup> of 1966 by means of Accordance 275 of University Superior Council of UNAL (Correa M. , 2005). Biology programme emphasis would inherit some characteristics of its closest ancestor, the career on *Natural Sciences*, therefore, biological research would focus mainly on systematics and taxonomy in our country, both disciplines highly dependent on permanent collecting of specimens and with the enormous homework for keeping doing the inventory of fauna and flora in our country. Taking into account the

Professional Council of Biology in Colombia, as stated in its web page<sup>19</sup>, there are registered 9314 biologist that have official number plate, eighteen biologists' associations and thirty-two undergraduate programs belonging to universities spread out in all national territory<sup>20</sup>, which, of course, desire their own biological collections (but not all of them have them). Important for collecting issues, these universities with its undergraduate programs constituted the main *biologists manufacturers*, which, at the same time, are the main, but not the only professionals, that add up specimens to collections and all information associated. Others professionals that sometimes collect specimens with scientific purposes are doctors, forestry engineering, veterinarians, agronomists, and many other "lay" collectors and amateur naturalists. With different goals all these people have enlarged shelves in museums, herbariums, universities and other repositories and, in fact, there has been a progressive growth in collections, passing from the first one officially registered at 1904, to 154 at the end of the last century.

As started Second World War in Europe, in Colombia was published one of the first efforts to protect our national resources (Decree 1060/1936) by limiting the exportation of "archaeological, natural or historical objects... without the permission from the government" (Quintero, 2012, p. 100). This measure was of great importance in a country whose extraction of natural and non-natural objects with academic value was regulated only by the "invisible hand" an which interest for Colombian governments had been almost inexistent until it was seen in these natural treasures a way for getting something different than money. In 2000 it is published Decree 309 and with it, the National Register of Biological Collections born and a more complete regulation of the scientific practice of collecting (Soacha & Orrego, 2014). Until year 2013 - year when regulation normativity changes about permission of collecting and biological collections (Decreets 1375 and 1376)-, forty-seven biological collections more were registered. More biology programmes, more biologists, more collecting, more specimens, more biological

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<sup>19</sup> <http://consejoprofesionaldebiologia.gov.co/consejo/la-entidad/programas-de-biologia/>

<sup>20</sup> The programs are housed in the next universities: CES, EAFIT, Cartagena, La Salle, UNITROPICO, UNISARC, UJAV, UDEA, Caldas, Córdoba, UJTL, Amazonia, UAND, Los Llanos, Nariño, Pamplona, Sucre, Atlántico, Cauca, Magdalena, Quindío, Tolima, Valle, El Bosque, ICESI, INNCA, Industrial de Santander, Militar Nueva Granada, UNAL, Pedagógica y Tecnológica de Colombia, Javeriana de Cali and La Guajira.

collections. *Collecting* has been spread out, its recent past has been successful and its future looks promising.

Biological collections can be seen as a direct and almost evident product of collecting. But biological collections imply a series of activities, besides collecting, which has generated highly standardized procedures in order to classify, to preserve, to catalogue, to systemize in virtual repositories, to institutionalize, to build appropriate infrastructure, to finance, to manage all specimens that belong to them, besides other activities. But, what is the role that biologists award to biological collections that justify all the great effort for constituting, preserving and promoting them?

### 2.2.1. “We Collect for...”<sup>21</sup>

**One Biologist:** Well, we can start by saying that scientists, obviously, are not the only people interested in collecting organisms from their different habitats. Hunting consists of a way of collecting, and of course we have depended on that activity for our survivorship. Thousands of years ago, we collected also for domesticate, and using organisms, like dogs, for hunting and company. When our knowledge about the world improved, we started to collect for many different reasons, for commerce, for assuring a source of medicines, aphrodisiacs, ornaments, paints, etc. We can say that *collecting objects is a natural feature of human race*<sup>22</sup>. But another reason emerged for this old practice, and surely it started only as a matter of curiosity. *We started to collect in order to know*. How the others behave? What do they have inside their bodies? Does that bug has also something like a stomach? If this macaque has a brain, does it mean that *it* also thinks like we do? Many questions arose, and with them, collecting, as a way for doing research, increased. And for that pioneer historical moment we have to say thanks to those remarkable figures of history of natural sciences like Aristotle, who was one of the first –if not the first- to collect and make rigorous descriptions but also categorized what he saw in this all new

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<sup>21</sup> ¡WARNING! Change of style or another way to expose different purposes that biologists allocate to *collecting* and *biological collections*. A biologist that does not pretend to represent his community, stays his opinions about these issues.

<sup>22</sup> (Simmons & Muñoz-Saba, 2005)

world<sup>23</sup>. For some, he is the father of our discipline and one of the first to collect with a different purpose.

Since those ancient foundational Greek times biology has advanced a lot though the word *biology* only get in used thanks to the suggestions of Lamarck and Treviranous.<sup>24</sup> Now we collect everything from Natural world, *since whole organisms, to DNA libraries and cell lines*.<sup>25</sup> The need for collecting but also preserving in a very standardize way is growing. We just cannot do our scientific work without collecting! Collections are a primary source for knowledge<sup>26</sup>, and that is enough reason to justify its production and maintenance. And I have to say that government does not care enough for these important sources for science and society. The museums of biological collection, or a natural history museum which is like the same, have had the goal *to generate, perpetuate, organize, and divulge information*<sup>27</sup>. And, as you probably know, since the famous Royal Garden Expeditions, and here José Celestino Mutis is one of our local scientific heroes, biological collections are the tool used to determine *national inventory of biodiversity* and constitute the only evidence of already extinct organisms<sup>28</sup>. We know what exist in our megadiverse country because many scientists in Colombia have done very hard work for collecting, preserving those specimens in highly standardize collections, with its relevant information gather from field work, and then describing using morphological, behavioural and even genetic information to document in articles our discoveries, for example, of new species<sup>29</sup>.

I, like a scholar in Systematics and taxonomy, cannot conceive my profession without collecting and the consequent existence of biological collections. In fact, due to our job helping to organize, categorize and identify the organisms of our planet, others fields of our discipline can communicate in a universal way and use our information with different purposes. Unfortunately, I have seen a diminishing in budget of my own natural history

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<sup>23</sup> For a description, not quite critique but interesting about Aristotle's work on natural field, you can see "Aristotle's Lagoon", a BBC documentary presented by the biologist Armand Leroi.

<sup>24</sup> (Coleman, 2002)

<sup>25</sup> (Suárez & Tsutsui, 2004)

<sup>26</sup> (Andrade, 2005)

<sup>27</sup> (Simmons & Muñoz-Saba, 2005)

<sup>28</sup> (Soacha & Orrego, 2014)

<sup>29</sup> (Lemaitre, 2002)



museum over years and of course receiving funding on my discipline research topics its getting more complicated over time. And that's quite paradoxically, *although many funding agencies though claiming to support biodiversity conservation, routinely reject proposals with a taxonomic content!*<sup>30</sup> Many of our specimens collected that constituted our *libraries of life* are in danger if we do not invest on their maintenance, and we must add that expertise in our field, systematics, is decreasing. We need professionals working in different biological groups, but in these times of biodiversity crisis, we are not only losing species but suffering also a worldwide *loss of human expertise*<sup>31</sup>. We need to inform society about the multiple uses of biological collections. It's frustrating that society undervalue my discipline and of course it means that it is today poorly supported and understood.

I don't wanna look too insistent but scientific collections are really important for us, and not only for *us*, the biologists, they are used for many other kinds of scholars. There is a lack of information about the impact of collecting among populations and some inappropriate moral judgments among some conservationists, environmental agencies and even some academic sectors<sup>32</sup>, which of course can be negative to this fundamental scientific practice that must keep on. They serve for evaluating biodiversity status, for defining important areas for conservation, you know, *we must know what there is in order to know damage we have done*<sup>33</sup>. The conceptual problems, but also the practices of researchers in conservation, will be limited if we don't continue collecting and using collections<sup>34</sup>. They are also used for doing biodiversity maps that should be taken into consideration by policymakers. They constitute germplasm banks, we use them to categorize endangered and invasive species, for conservation models, for research in general and support of different areas as pharmaceutical chemistry, bioprospecting, biomimicry, forestry engineering, art, husbandry, environmental policy, biogeographic, molecular, genetic, ecological, systematics, evolutionary studies.<sup>35</sup> Today there are many

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<sup>30</sup> (Cotterill, 1995)

<sup>31</sup> *Ibid.*

<sup>32</sup> (Cuervo, Cadena, & Parra, 2006)

<sup>33</sup> (Tomkin, 2015)

<sup>34</sup> (Cuervo, Cadena, & Parra, 2006)

<sup>35</sup> (ICN, 2014)

different projects of engineering, for example, that can damage biodiversity. We need to know which species could be damage<sup>36</sup> and for achieving that we have to take hand of knowledge produce in biological collections. In the end, its value for knowledge generation in multiple fields is undeniable and should be taken into account for decision-making. Do you doubt about its importance? Well, many people, including of course policymakers do it, or at least do not know the real contributions of collections, *resulting in insufficient financial support for maintenance and improvement of biological collections*<sup>37</sup>. ¡I cannot understand this lay-negligence! I even have known of museums and well-known institution that have felt a reduction in its budget<sup>38</sup>, which of course reduces curatorial work, research and all derivate from it. But, *ironically, the importance of these collections and their contributions to society have increased in recent years, particularly following acts of terrorism in the United States and abroad.*<sup>39</sup> Collections are important not only for biological research but for helping to resolve problems of public health, epidemiology, national security, environmental problems, for achieving sustainable development, and *who knows what other future benefits will arise*<sup>40</sup>, but they do not have *the social* support they should have. ¡Too bad! Something has to be done, do not you think so?

### 2.2.2. “They Collect also for...”<sup>41</sup>

**One Sociologist:** When you ask a biologist why they do *collecting work*, surely they are going to give you a list about the possible uses in different biology subdisciplines and suggest its importance in other non-biological-fields of knowledge, and will point out the necessity of using the information produced on biological collections for taking decisions in issues of environment, epidemiology, conservation biology, agriculture, Policy, Art, and quite others. ¡Oh! and if it involves an advantage in a current, polemic and sexy research topic like climate change or transgenic, it is something that cannot lack of their

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<sup>36</sup> (Lemaitre, 2002)

<sup>37</sup> (Suárez & Tsutsui, 2004)

<sup>38</sup> (Gropp, 2004)

<sup>39</sup> *Ibid.*

<sup>40</sup> (Cuervo, Cadena, & Parra, 2006)

<sup>41</sup> ¡**WARNING!** Change of style or another way to expose different purposes that non-biologists allocate to *collecting* and *biological collections*. A sociologist, that does not pretend to represent his community, stays his opinions about these issues.

legitimizing discourse of biological collection. I do not pretend to look like I am attacking their perspectives about its practices, products and benefits associated, ridiculing them or just playing to simplify them but I just wonder which are *the other roles* of collecting and the other justifications for the existence of biological collections in other possible instances, that, of course, can be fundamental to explain their relative successful in academy and in texts in modern times.

I remember a discourse given by the ex MADS Vice-minister Pablo Abba Vieira Samper - a young Chemistry Engineering- in which it highlighted that Colombia, due to its huge biodiversity, its Natural Capital, has an enormous potential for research, innovation and developing of new technologies, therefore, quite important *to ensure development and improving Colombians life conditions*<sup>42</sup>. No doubt, for a vice-minister, it is not enough to stand out the intrinsic value of biodiversity: the aesthetic and scientific importance of the living. No. He has to emphasize other uses, utilities, benefits, for the kind of stuff that are under his administration in order to call the attention not only of naturalists wanting to know about life but other sectors, public and private, surely, with more political influences and economic power. For others, scientific collections must be kept *as testimony of our enormous richness of our natural heritage, being historical memory* that will allow us to remember what we had and what we have<sup>43</sup>, a national scientific heritage *invaluable for understanding the biological and cultural diversity*<sup>44</sup>. Our specimens, our collections, are also part of Colombia, they even help to build nation<sup>45</sup> and of course, to know them, means to having the possibility of control them, and a way of give them visibility as government natural resources and even as regional trophies. Today there are not kings on this country but collecting and systemizing for *development* looks to be an association that remains. Today, presidents, ministers and the like, as the Borbones in colonial Spain, are not interested in *big theories and scientific debates, but about the practical dimension of*

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<sup>42</sup> (Bello, Báez, Gómez, Orrego & Nägele, 2014, p. 6).

<sup>43</sup> Rodríguez in (Simmons & Muñoz-Saba, 2005)

<sup>44</sup> As written by themselves in its official webpage <http://www.icn.unal.edu.co/>

<sup>45</sup> (Quintero, 2012)

*science, that is, its potential to become in a source for economic, military and politic capital*<sup>46</sup>.

Utterances like those that stand out biological collections are frequently repeated in primary articles and popular ones and make us think about the political, cultural and productive importance of collections, as many scholars in this field recognize<sup>47</sup>.

But, for attaining support, specimens and collections must go out from museums and universities. And this is mainly done by means of texts in the form of journals, bulletins, News, academic events and more recently, but with increasing importance, by means of social networks like facebook. Those texts allow millions of specimens to be simplified, to travel around the world, to interest new people. It is widely recognized that the production of papers highly depend on biological collections, which usually rest on the so call natural history museums<sup>48</sup>. As biological collections are used for many purposes, another unusually explicit result and goal from collecting, preserving and doing taxonomy, but of quite importance is then *publishing*, preferably in an important international journal. And paper production is something of quite importance for scientists as has been shown elsewhere.<sup>49</sup> If you published, you are known to a community. If you start to be known, and not because being a bad scientist, then you can get access easily to information, jobs, projects, recognitions, better salary<sup>50</sup>, and of course, good reputation.

For old Spain Empire, as in present times, collections and its products were a way to promote political meaning as imperial/government achievements. As part of imperialists/propagandistic mission consisted in accumulation of possessions, that not only are based on typical riches such as gold, land, slaves/workers, but also intellectual and symbolic wealth. This new possessions are produced not only by scientists, but require

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<sup>46</sup> (Castro-Gómez, 2013, p. 104).

<sup>47</sup> (Soacha & Orrego, 2014)

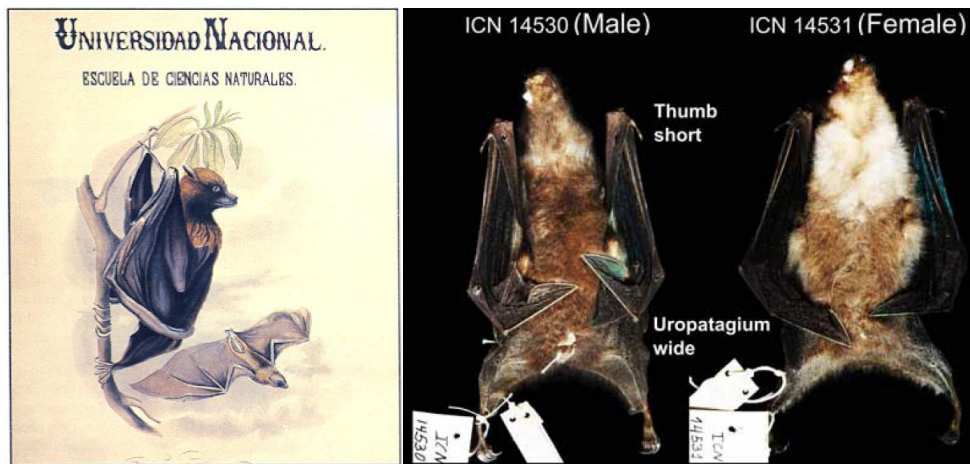
<sup>48</sup> You can read some numbers in Suárez & Tsutsui (p. 72, 2004) taking into account the articles supported or than gather “raw data” from museums for the case of important Journals like *Ecology*, *Ecological Monographs*, *The American Naturalist* and *Systematic Biology*.

<sup>49</sup> The classic on STS about it: (Latour & Woolgar, 1979).

<sup>50</sup> In institutions as UNAL there exist a system for promoting scholars to publish, so the more you published the more money you earned at the end of the month. (Here among us one of my non-explicit goals by writing this thesis is to publish so I could get some of the benefits that *this* sociologist says I could get by doing it).

cooperation work, with artists for example<sup>51</sup>, as in the case of one of the most visible by-products after collecting and doing taxonomy, that is, illustrations of biological specimens that are in museums, textbooks, movies, scientific articles, and many others manifestations that abound in academic and non-academic instances.

**Figure 2-3:** Visual representations of Bats (Chiroptera). **Left.** Watercolor used by students of the old School of Natural Sciences (Taken from Díaz-Piedrahita, 1999). **Right.** Skin of bat *Anoura carishina* holotype (ICN 14530 ♂) and a female (ICN 14531 ♀) (Taken from Mantilla-Meluk & Baker, 2010). Visual representations are another product associated frequently to museums, systematics, or taxonomy work. Those representations are highly varied, and express different organisms' facets depending on divulgation, descriptive, academic purposes. Specimens on Figure 5B are in a posture representative of many specimens that are conserved under specific conditions for assuring preserving. They are out of any context, which is represented by the *background*. With them, a little paper with information about them codified by a number. Other specimens have marks with morphological, ecological and collecting information, a way for establishing specimens as unique, temporal and spatially. Now the number in the sign replaces those information redirecting researches to a database in computers (in places where this method is practiced of course). Figure 5B contrast widely with Figure 5A, which shows a bat in a more *ecological performance*, expressing behavioural attitudes and showing different possibilities of action which is show by two bats doing different things (standing on the tree, and flying). Building 5A is not possible by looking biological collection specimens. It is necessary collecting on the field by means of observation.



Publications and images are normal by-products of biological collections. But these places, as repositories of objects of interest, promote a constant exchange of specimens among universities but also of researches themselves. Smithsonian Institute, for example, receives more than two thousands investigators from around the entire world<sup>52</sup>, and with them, cultural cross occurred, new projects emerged, and even sentimental relationships. Of course, not only, there are movements from “periphery” to “centre” collections but is

<sup>51</sup> (Nieto Olarte, 2000)

<sup>52</sup> (Lemaitre, 2002, p. 62)

increasing the other way around. Well, in fact, as the old Empires, took biological organisms and other natural and cultural heritage from the entire world, for many researchers of their old colonies is quite important to promote exchange between museums in order to access to material that was original from their own countries.

Interchange among collections, of specimens and researchers, is related to many different interests. Sometimes it is because there is a specimen important to complete a set of representatives of a biological group under study for systematic research, for example. But quite important is the topic about verification process that scientist consider important for his way to legitimize hypothesis or be sure about a fact by looking the fact one more time. You can find literature about this topic in my field of knowledge<sup>53</sup>. For a biologist I once interviewed, *observations reported on preserved specimens can be repeated and the resultant concepts independently checked. This facility is vital to quantify and compare their accuracy and equivocation. Preserved specimens are stable sources of reliable information (of minimal equivocation and maximum accuracy) from which biologists can assemble knowledge. Preserved specimens structure the concepts on which biological knowledge is built, so a cardinal requirement exists to maintain specimens to allow independent checking of concepts. In interpreting the complex natural world, preserved specimens unequivocally link together and focus the accuracy of information communicated by individual biologists to their peers. In biology, the preservation of specimens in reference collections preserves knowledge. Their preservation permits concepts to be repeatedly checked, so published knowledge can be verified.*<sup>54</sup>

We can say collections are “repositories of facts”. Those organisms are extracted from Natural world, and then put in boxes in Biological Collections, where they can be checked, and confer reliable information about species, but about many different issues about the world. Of course, my field, social studies of science has criticized the nature of natural objects at least as they are understood by some scientists. We can think that specimens are not interpretative neutral, that organisms are very variable, that methods are variable, that

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<sup>53</sup> About the importance of experiments for verification and a critique of this method look (Collins & Pinch, 1993)

<sup>54</sup> (Cotterill, 1995, pp. 188-189)

concepts and identifications are very variable, that “this” specimen in a shelter is not only “this” specimen in a shelter. Knowledge, identity and factuality depend on researcher interests, beliefs and categories. The neutral and without-context-specimen-in-the-shelter is not possible....Well, all this discussion deserves a longer argumentation that is not a principal objective right here. It is clear that for biologists, what it is in collections is not only a possibility for helping research in many different fields of knowledge, but it is part of their repertoire for building reality, sustaining utterances, a direct way to verify knowledge ;a biological collection is a house of facts!

Collecting and building collections are, of course, parts of something bigger. *Classifying* being another important word to consider being associated to those mentioned. Historians have said that scientific revolution and the empiricist effort to know, and to represent reality becomes an obsession which ends up in the growing of biological collections by the hand of naturalists – the most famous Linnaeus- a work of increased activity since seventeen and eighteen centuries, a time when biology, the field of knowledge we associate more with these house of facts, did not even had a name because its born is more associated with the effervescent nineteenth century, one word which decided to adopt Lamarck and Treviranus independently to circumscribe this “new” science<sup>55</sup>. First, it exists natural history. Before life, there were living organisms, a time the *history* become *natural*. Before Natural History times *signs were part of things themselves, whereas in the seventh century they become modes of representation* as Foucault would mention<sup>56</sup>. The livings needed to be described in detailed in order to know the good representation, not the thought order, of nature. This will lead to the born of a new way to referred to life and a language that would include only those traits considered of importance for things like doing classification. Unfortunately, some scientists in this abstraction and rationalizing effort for getting the legitimate representation of nature rested importance about the emotions, local uses and other cultural meanings and possible multiple associations of their objects - ;yes, they became objects!- of their native places. But too many meanings

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<sup>55</sup> Coleman (2002) is a good introduction for a history of biology in this important century and about the introduction and consolidation of the word “biology”.

<sup>56</sup> In fact he does in his book *The Order of Things: An Archaeology of the Human Sciences* (Foucault, 1994). Of especial interest for our topic under consideration is chapter five classified as “Classifying”.

imply many words, and many words are problematic for a proper and more stable classification, stability demanded for any set of ideas to be considered “scientific” (an adjective of an increasing desire in modern times). Where is the new place for these objects? Cabinets of curiosities, herbariums, museums, personal collections and even gardens. Recalling one more time to our beloved Foucault, these places constituted *encumbered spaces in which things are juxtaposed*. These were the new houses in which *creatures present themselves one beside another, their surfaces visible, grouped according to the common features, and thus already virtually analysed, and bearers of nothing but their own individual names*<sup>57</sup>.

An interesting issue about scientific practice which makes possible scientific collections, that is *collecting*, is all what concerns about the benefits, problems and arguments about it. To these kind of arguments, that see the benefits in different areas, plus the esoterically ones, of biological collections I am going to call them *Collecting for developing or Collections for Development*. Although sometimes it is not clear how all benefits associated to this scientific practice and products are generated, it is clear that is quite important to present them as promoters of welfare in one way or another. Do you want progress? Collect! Do you want new medicines? Collect! Do you want *Sound Science*? Collect! To save biodiversity we have to know something about it, therefore, it implies support to biodiversity knowledge production, which means, support fields like systematics and taxonomy, and, therefore, promoting collecting and biological collections.

On the other hand, it is not enough to say what are explicitly the advantages and gains of this scientific practice. Another way to legitimate them, consist in saying what kind of things can happened if you do not favour them, or do not support them enough. If you cannot identify who is the parasite, how can you find the cause to fight an illness? If you do not use historical information that rest on museums, how can you make estimations about what is going to happen with climate change? If you do not collect arthropods of a

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<sup>57</sup> Foucault (1994, p. 131). Of course, as it was mentioned above, specimens in shelves are not naked: it has been ritualized the act of putting a minimum of information if it is possible and, on an accorded manner depending on the biological collection protocol. Scientific name, place where it was collected and general observations are elements frequently associated textually with the organism.



crop, how can you know which one is the pest and avoid the \$14 billion per year costs on USA of this kind of plagues?<sup>58</sup> If you do not support collections, can you imagine the impact in so many different fields of knowledge, from genetics to biology conservation, from Art to Law? Without collections and collecting work, how can be taken decisions with good and reliable knowledge? ¡Fear appears! The ghosts that frighten the conscious people get bigger and bigger. ¡Risk emerges from the darkness of empty halls of museums! And murmur:

*Collecting / Collections are good for “X”*

*Non-collecting / No-Collections will result in “non-X”.*

*Non-Collecting / No-Collections will result in “Y” which is bad but different to “non-X”*

*Non-Collecting / No-collections, then not advantages, then, a worst human future expected*

Strange words that presage *Bad News* [see Chapter 3 and 4]. Two sides, the same coin: Collecting for good/Non-collecting for bad. So, it is expected, as a brief review in literature allow us to infer, that when talking about collections it is not enough to say how they are constitute and how it relates to scientific knowledge production, it's quite important to promote the practice, and its main result, biological collections, and point out all kind of benefits to them and, at the same time, put on table all possible risks if we obstacle them. But, what are the threats? What are the frequently causes considered to explain why a non-preferred action, that is, non-Collecting to happen?

¡¡Ignorance!! It is shouted everywhere. Ignorance dwelling the general public, non-governmental agencies, even in some environmentalists heads and in everybody who do not understand real collections value. Those who do not comprehend that collecting living things, and become them *death things* by means of collecting, with scientific purposes of course, is inevitable and necessary. Of course it is not exposed by some scientists using impolite expressions as I use them. It is denounced that the *deplorable lack of knowledge decrees actions, not sentimental objections to inventories*<sup>59</sup>. But some environmentalists, some conservationists, some hippies (and now even hipsters) and their romantic and silly

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<sup>58</sup> (Suárez & Tsutsui, 2004, p. 68)

<sup>59</sup> (Cotterill, 1995, p. 194)

notions, do not consider, following some scientists, that collecting is necessary, that is an immovable practice, and that even conservation, though sounds paradoxically, depends on it. Collecting is production of knowledge, and knowledge allows predicting and controlling, and those very preferred actions allow saving life, say some non-romantic but pragmatic scientists. Do you want to preserve life? Then, you have to finish with it sometimes. ¡Dead for life! ¡Collect to preserve!

Ignorance, lack of understanding, sentimentalism, negligence, or even stupidity, are then, obstacles for this scientific practice, and constitution of libraries of life, *the irreplaceable documentation of life on Earth*<sup>60</sup>. The solution: to communicate; to soft our technical language; to promote consciousness; to teach about scientific practices; to speak loud; to act; to go out of Science; to illuminate “laypeople”; to make them understand *the real* importance. That’s the reason some biologists justify their scientific practice. But I guess another research should be done to track this question. A research titled something like *Collection life: The construction of a biological fact* - being quite original- must be done in order to tackle to this issue that I just commented quite briefly on this odd intervention.

### **2.2.3. Biologists Actually Collect for...**

Summing up, collecting and biological collections *have multiple purposes and are associated to multiple interests from different social actors*. You can take a brief watch of table below (Table 2). Some of these different purposes are associated to Science and we can call them *research purposes* (e.g. collecting for doing genetics), and other for the precise and informative category we can call *other purposes* (e.g. collecting for development). Both are quite important for legitimizing this scientific practice inside and outside scientific community (you’ll read it in development of our case).

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<sup>60</sup> Larry Page, curator of fish at Florida Museum of Natural History at (Gropp, 2004, p. 392)

**Table 2-1:** Biological Collections/Collecting for... This list provides an effort to show collecting and biological collections as something which goes out biology world, or, as Latour would say, an effort to take to the world the laboratory, in this case, to take the world the biological collection (which can be considered a particular laboratory). The practise that sustain scientific collections and the specimens they keep are something that *go out* and *are used* in different ways, depending on interests and purposes even for the same person. Of course, any single use briefly mentioned deserves a specific research that *go out* of this thesis.

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### Biological Collections/Collecting for...

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Identifying biodiversity, doing taxonomy, systematics  
 Measuring environment impact/biodiversity loss  
 Knowing what existed / Estimating what could cease to exist  
 Assessing natural resources /assessing natural profits  
 Doing flora and fauna inventories  
 Building Natural, historical and Scientific Heritage and national identity  
 Helping to prevent or identified causes of “bad events”  
 (like terrorism by biological weapons, epidemics, environmental problems, etc).  
 Doing genetics, ecology, phylogenetic, conservation biology, biochemistry, evolutionary biology...  
 Doing History, Law, Art, Engineering, Politics, Sociology...  
 Advising policymaking  
 Achieving progress, welfare, wealth, sustainable development, conscience, understanding, knowledge...  
 Knowing new ways to use biodiversity, innovate by means of nature  
 Constituting repositories of facts, recording Nature, preserving facts  
 Being pride or being a museum of horrors  
 Promoting links (social, economic, scientific, etc) among institutions like herbariums, museums, private  
 biological collections, etc.  
 Source for social studies of science and the like

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Collecting, no doubt, is important for biologist identity, and collections, are part of the *setting* of action that we associate to that scientific activity. To conclude the grade of importance of this issue discussed in this section:

*i)* For biologists ***we only know the iceberg’s peak***. A lot *collecting* looks not enough right now. “We do not know Colombian “X” diversity”<sup>61</sup> remember. We need more than one single representative specimen of every species to do more accurate statistical analysis, they say. Different stages of developments, sexes, environmental conditions, and

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<sup>61</sup> (Cuervo, Cadena & Parra, 2006)

uniqueness are all *sources of variability* that looks to demand for more collecting work. And, if we take into account evolution and environmental impacts, that is a justification of keeping collecting due to changes in original populations and biological evolution. The bird you collected yesterday is not the same than the bird of tomorrow sample. ¡A never ending scientific practice! On the other hand, it is the ambition of collecting all possible information associated to organisms, like eggs, sounds, DNA, behaviour, nests, feathers, etc., a multiplying factor of possible objects of collecting interest. One more time, what we have collected it's only the iceberg's peak.

*ii) A generalized lack of understanding is on non-collectors minds.* Understanding the role of systematics, of biological collections, of identifying, of collecting, of biological complexities, of evolution, of ecology, of potential benefits and potential risks and other *understandings*, are a first *must to do*, for scientific community to justify socially the practices and the product. This lacks of understanding demands more communication, more going out of Biological Collections to other worlds to teach people: more promoting-dependence-on-collections; more opening-to-biological-collections-access (by expanding the electronic availability of collection databases for example<sup>62</sup>); an uncomfortable expansion of trans-science is needed and social action demanded.

*iii) Perceived collecting action for developing is necessary.* “Funding in this area should become a national priority. Otherwise, knowledge of this planet’s biodiversity, and of all the potential benefits therein, will be lost”<sup>63</sup>. Biological collections even helps to fight terrorism, in the sense that biological weapons must be studied under the reference of what we already know about organisms and its – especially negative- effects. “The storage and maintenance of museum collections is inexpensive compared with the potential costs of their absence”<sup>64</sup>. All this utterances have the persuasive idea that if we can trace historically the development, for example, of a parasite, to identify its origins, we can manage it in a way in order to defeat it. If we knew the past, we can control the future. Do you wanna health? ¡Collect! Do you wanna solutions in environmental problems?

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<sup>62</sup> (Gropp, 2004)

<sup>63</sup> ” (Suárez & Tsutsui, 2004, p. 73)

<sup>64</sup> (Suárez & Tsutsui, 2004, p. 66)

¡Collect! Do you wanna development, progress, wealth, welfare...? You already know what to do.

*iv) Biological collections as houses of facts.* Specimens in biological collections are for biologists what recordings for some conversation analysts: they allow coming back to the original material for a “realist object”<sup>65</sup>. If someone believes, for example, that a wrong taxonomical identification has been done, then he/she can “come back” to the original specimen, go to the museum, to the repository, to the collection, describe it again, and determine its membership to a known category, or to a new one. So, specimens are treated as *preserved facts*, that is, entities of reference for describing reality with the supposed certainty that, if preserved properly, they will reliably represent a part of the world in one space and time specification. It is quite important then to register, on texts, temporal and geographical information associated to specimens collected. So, biological collections are a fundamental stone for building reality for some biologists. *Collecting is like recording nature.*

Many complex issues have been considered above but no time for proper argument developing, just insinuations here and there. But, finally, with all those things exposed above, *what is the actual role of biological collections and for collecting?* Let us finish with another way to say things by means of the next visual representation (Figure 2-4).

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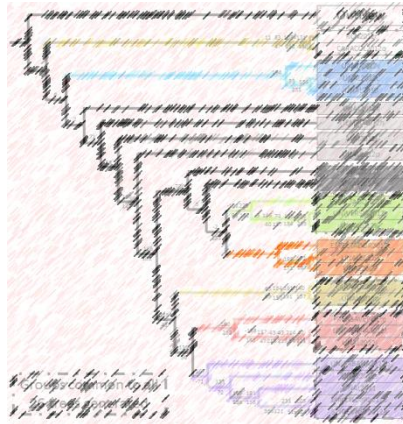
<sup>65</sup> Professor Ashmore, for further reading about “nostalgia movements” looking for realist objects in research process, as in a case about conversation analysis, you can consult (Ashmore & Reed, 2000).

**Figure 2-4:** A biologist collecting... As many of you surely have seen traveling at social networks, there is one kind of “meme” which talks about perceptions and reality. *What many different actors think about an activity/identity v. What the activity/identity really is.* The image above -which should not be taken as a serious characterization of multiple perceptions-, wants to represent two things: 1) It is not expected a single and dominant representation of what collecting for a biologist really mean. How its work is seen will depend on varied imaginaries from different people; 2) Because of the role I have decided to adopt in this research, which is not to legitimate one option among many of what “A biologist collecting actually does” and its role in society, more interestingly, I will take into account as a good answer the *diversity of answers themselves.* As it is represented with a quasi-fractal solution as seen in right down below of Figure. *What I actually do??* Many things for now.



No doubt this topic about collecting/collections is richer and unfortunately it cannot be handle in proper way here, but with the previous perspectives on mind, about *regulating* and about *collecting*, we can possible see with many eyes, sniff with many noses and hear with many ears some recently *News*, exposed in very serious media, that can be consider *bad* for our scientific practice under discussion and its main product. Bad News for Science? That’s next!

### 3. Systematics of Bad News



Bad News for me. Many material, many specimens collected and I do not know how to organize them in this writing. Besides, the little task of... giving them any sense! (Specifically, *Sociological Sense*). One thing I can do is to remember how I did resolve to take *this* research topic as a *good* topic for master thesis. That strategy takes me back to my first collection. My first specimen. As usual, the first collected specimen -I think for many scientists applied- is what can be called *accidental*. Not in the way of crashing with it on a street while you are walking in one direction and then the impact change your research goal and ¡Eureka! Even accidents are not made of pure chance. You see a characteristic that cause you wonder. It can be an odd behaviour, a shining mineral, a coloured pair of wings, a provocative titular... The first glance promotes curiosity. Curiosity is a mechanism for gaining proximity. And then, you find yourself catching, reading or talking. The spider, the plant, the lecture, the article... in my case, the first catch was the *News*.

News that I first read as a biologist. A reader worried about political and social constraints for science development. This News I captured “accidentally” talked to me about a series of unfortunate events for my discipline: my impression was that there were *bad news* for Science and perhaps good news for me. ¡A research topic caught on PC!

The next three chapters will explore these *Bad News*: in the first one I will focus on the problem on organizing and selecting the newspaper specimens collected. A *Systematics of*

*Bad News* that will help me to build a way –of many possible ones- to handle with the different characteristics I can find in those textual specimens which are going to be the map (or rather the *tree* as you will understand later) of the second chapter, a *Natural-Sociological History of a Problematic Situation*. This second part will go through some of these textual specimens, it will imposed them an order that, will show more ecological and contingent relationships among each other. A series of institutions, people, places and events related to our case of interest, that is, those involved to problems for collecting as a scientific practice and its role in regulation change will started to emerge. The third chapter will expose a dialogue, a fictional but not so fictional event: *The Z event* will be a story about some biologists that had some problems for doing their collecting work. This dialogue cannot be taken as a description of a historical event *strictu sensu* but as a way for exposing the resulting analysis of a series of interviews I made to *real* (or quasi-real) actors.

As happens with biological collections you can start to collect and become obsessive with that practice without knowing precisely why you do that. Then you stop. And ask yourself important questions: Why I do what I do? What is next? Analysis? How do I organize all these information? How can I make any sense of it? Doing systematics -my professors have told me- is the next step.

### **3.1. Constructing a Systematics of News**

Being systematic is not a goal but a way to pay attention to details. To force me to associate by constant comparative effort among different analysis units. Here, with the purpose of describing an important part of a story -and as a part of that story- of collecting, regulating and other social interactions.

I have considered 27 journal articles that were published mainly by UNAL media- half of them- but other private and public newspapers published in digital media and some of paper circulation (Table 3-1). The articles were chosen by the “keyword-search & read-selecting method” which consist in choosing any article from a repository (like *World*



*Wide Web*) guided by topic of interest, then you read it, subtract key words that look to be important in journalist stories, like “biological collection decree”, “Gonzalo Andrade”, “Decree 309”, put these words in a tool searcher –*Google*- and read promising links and new news. Then, iterate the process by taking as reference another considered important article. The News considered in this section have an upper limit temporal criteria for its consideration: Any article found and considered in this section was included if published before the publication of Decrees 1375 and 1376 (June 27/2013) by MADS. The articles published after Decree changing are going to be considered in following chapters.

**Table 3-1:** News. Newspapers considered for this chapter. In this thesis, these are specimens that are part of my textual collection but not the only ones.

<b>News Media</b>	<b>Number of specimens considered for this analysis</b>
<b>UNAL</b> (Agencia de Noticias UN, Boletín UN, UN Periódico)	14
<b>El Espectador</b>	3
<b>Caracol Radio</b>	2
<b>Universia</b>	2
<b>Scidevnet</b>	1
<b>El Tiempo</b>	1
<b>Prensa Verde</b>	1
<b>Unisabana Radio</b>	1
<b>RCN La Radio</b>	1
<b>UniAndes noticias</b>	1
<b>TOTAL</b>	<b>27</b>

When reading a *News*, the reader, got an idea of a series of events, problems, people, and stories, narrated by journalists, those with the declared intention of informing public opinion. If journal description is “accurate”, “false”, “true”, “biased”, “political”, “scientific”, is not my analytic intention here. What I have asked considering these textual specimens is to find how they relate each other and, by reading them and comparing them, to make evident what is constantly under issue, the redundant topics and names that appear here and there. What it is the specific to each one. And, to build a series of associations

that allow me to narrate a sociological story that makes evidence about what some people considers important, but especially, problematic.

For analysing the material collected I purpose here a *Systematics of News*, or a way of building categories, contrasting topics, and more important, a way to see details that sometimes are not evident without any structured intention of gathering knowledge and building associations<sup>66</sup>. Let us consider some general issues about this procedure.

Each News is considered a *research specimen*, which have some textual features that can be stayed as: actors, places, events, dates, normative, quotations, contrasts, metaphors... These characteristics, or features will be named *traits* from now on, which help me to define any considered specimen and to building comparisons. If present in a text, many different traits can be informative, depending on research purpose, effort and laziness. The selected traits we are going to focus on are those ones that can help us to construct a *natural sociological history* that allow us to show a social weaving with enough specificity but without being too exhaustive. Some general issues have to be explained first before showing the results of this methodological perspective to our specimens.

- a) Any trait can have different ways to be presented dependent on each article. For example, in one article we can have the words “Ministerio de Ambiente”, and in other one, or even in the same text, the word “Minambiente”. Here we have the challenge to define if the journalist is referring to the same trait or different traits<sup>67</sup>. One solution can be treated them as different traits. If we chose last option then you can forget of graduating when you expected to do it. Time and analytic precision is quite expensive

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<sup>66</sup> The election of calling it *Systematic of News* has two intentions: 1) To make evident that the method is inspired by Biological Systematics, a way for organizing information, sometimes with the aim of building evolutionary relationships; 2) In my short story in social studies of science is my impression the frequent use of metaphors related to mechanic and technological frames. “Dispositive”, “social technologies”, “relativity frames”, and so on. Then I said: Why not using a biological esoteric metaphors? Therefore, Systematics of News has a aesthetical and political election, and not just because I believe this is an excellent method for sociological analysis. In fact, as you will see later, is not just an extrapolation.

<sup>67</sup> In fact we can have the same word like “Gutierrez” in different articles, but a context consideration must be taken to consider if we are talking about the same person, or two different person with the same last name. That is, trait definition is dependent on interaction with other traits.

if you decide to be as detailed as your own specimens (In fact, I believe, one of the non-explicit goals of doing research is to summarize, or synthesize complexities)<sup>68</sup>. Another option, is to build equivalence correspondences. That is, to say that, *I believe, A is equivalent to B for our research purpose*. Or in the mentioned case:

“Ministerio de Ambiente” = “Minambiente” = “Ministerio de Ambiente y Desarrollo” =... = N

Here “equivalence” cannot be taken as “sameness”. It is an effort to simplify all these diverse expressions assuming a cost in precision but a gaining in time and data management. This approximation gets even more complicated if we not only considered expressions like “Gonzalo Andrade”, “Ministerio del Interior”, or “Comunidad indígena,” but complex fractions of texts that make reference to a topic, problem, contrast, metaphor, that researcher considers of special interest and suspecting its redundancies in other specimens. Consider the following examples:

De acuerdo a un análisis realizado desde la Vicerrectoría de Investigaciones de la Universidad Nacional de Colombia en diciembre de 2011, de los 565 proyectos sobre biodiversidad inscritos en el Departamento Administrativo de Ciencia, Tecnología e Innovación desde 1997 a la fecha, tan sólo 46 han logrado cumplir con todos los requisitos (SCIDEV, 2012a)

And,

Un estudio interdisciplinario realizado en el 2008 por profesores de la UN, encontró 567 proyectos de investigadores de todo el país registrados en Colciencias en espera de permisos. También indagaron en las autoridades ambientales como las corporaciones autónomas, el MADS y la Unidad de Parques Nacionales, donde encontraron que solo 48 permisos y 48 contratos de acceso a recursos genéticos fueron otorgados hasta el 2012 en los últimos 15 años (UNAL, 2013a)

Though above newspaper fragments are quite different in many aspects (both mention different institutions, reference to different dates, different extensions, different contexts for example), there is a non-literal reading that can make a person to suspect those fragments are not only similar in some set of traits but related in other way (like “both make reference to a study/analysis, from UNAL, that established a comparison among some projects - 567 or 565 – that do not have a permission or does not accomplished some

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<sup>68</sup> Latour (2008) constant advice of describing as much as you can is good in order to not forgetting what is you want to do, precisely, *describing* instead of *forcing* your actors and actions in hard and not interesting conceptual boxes. But it must be considered that all interaction and expressions of themselves have limits, *out there and in there*. So following actors in all the ways they follow is impossible. We have to describe but we are not going to pretend we can be as complex in our descriptions as our research referents.

requirements, and less projects -48 or 46-, in a lapse of time, do have these permission or the complete set of requirements).

Considering argumentation above, it is time to ask: Is it a good idea to reduce a variety of expressions to just one category? If it is decided to take the “reductionist way”, what kind of criteria can be established for considering that two or more expressions can be considered equivalent-for-research-practical-purposes? All complexities you can imagine but here we have taken into consideration one synthetic effort to analyze our textual specimens. Therefore, different textual fragments have been subtracted of every article considered. Put into a matrix where they have been subordinated to “other textual fragments”, -here *categories*-, that were written based on subtracted texts. As I continue reading new fragments from different specimens, those were located on preexistent categories or were created new ones if consider that the issue expressed by the fragment was *intuitively* different to others, that is, categories emerge in the process of categorizing. This procedure can be seen as simplistic, improvised, and a *intuition*-based-method is not often a *technique* expressed as valid for gathering good categories or gaining new information. But, as one of my intentions is *to intuit* (to infer, to deduce, to conclude if you want) how can be the impressions in a “common” reader that casually reads many of these articles, we can suspect that no single common reader of news, do sophisticated methods for contrasting information belonging to different sources. We can suspect that when *we* read a series of fragments, we do not make an incredible detailed effort for validating if one fragment is equivalent to another. That is, we, as common readers, and also as researchers, do create permanently categories without a detailed explanation or mechanism for doing it. Of course, as analysts, we have to propose a way for analyzing.

Though full of mistakes as a procedure like this can have, it has been done with the intention of capturing (“creating” being another valid verb) a way to relate and expose information based on a sample of journal articles. So, here we can differentiate two kind of traits by what we can call its *complexity*: those that are formed by few words and are easily associated to people names, institutions, decrees, Laws, books titles, which will be named *simple traits* (e.g. “Universidad de los Andes”, “Resolución 309”, “Decisión Andina”,

“Gary Stiles”); and, those fragment texts that make reference to contrasts, metaphors, descriptions, which also are constituted by simple traits. The last ones will be name *composed traits*<sup>69</sup>.

b) Now, as the objective is to create a story concerning the topic of collecting, regulating and social interactions with all these information, not all conceivable traits are considered. A trait is consider if and only if, has an apparent relevant role for describing collecting issues planted for this research topic, that is, if it can be associate with other traits and its association can make us think in the possibility of constructing a story with enough specificity and generality, and internal coherence<sup>70</sup>.

c) Another important typification for my *Systematics of News*, and the one that will allow me to organize and build relationships among specimens, will classify my traits depending on their presence, or absence, in different News. So we can classified our trait as<sup>71</sup>:

- **Shared Special Traits (SST):** A trait that is shared by two or more News –but not all of them- that can be signature of being generated by using a *common ancestry source of information or highly associated sources of information*. For example, if two News quoted “Universidad Nacional de Colombia”, here we suppose that both journalists quoted it due to they use the same resource of information (for example, they read the same article or interviewed the same person who said to both that his affiliation was UNAL) or, because they

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<sup>69</sup> Complexity does not make assumptions about significance level of trait or that composed traits are better for analysis than simple traits. Perhaps another good name can be “smaller traits” and “bigger traits” but surely another footnote will be necessary.

<sup>70</sup> This can be consider *tautological* due to defining character look to depend on a supra-level association that, starting research, has not been done and is one goal of research itself. So the product you see, being honestly, is not as straightforward as you will read it. Multiple associations have been done in iterative process of reading, classifying, giving meaning. But, the *auto-referential move* has increased ways of paying attention to stuff not previously considered before doing systematics. ¡I promise!

<sup>71</sup> Any coincidence with the biological concepts of *synapomorphy*, *symplesiomorphy*, *autapomorphy* is purely coincidental. As <http://www.palaeontologyonline.com/> define, a *synapomorphy*, is a character that is shared by all members of a particular group, but not with the members of other closely related groups; A *Symplesiomorphy* is an ancestral character that is shared by several species (as it is widely present in different organisms cannot be useful for defining specific groups, being, therefore, not very useful for doing systematics in biology); And an *autapomorphy* is a distinctive anatomical feature, known as a derived trait that is unique to a given terminal group, that is, a very specific trait.

subtracted it from highly associated source of information (one from an interview, the other from an article, both –the article and the interview– possibly having a common ancestry source of information). These characters allow me to classify specimens and construct wider categories and can trace differences among groups due to News precedence (from different institutions), authors, or of other kind of traits that can help characterize specimens.

- **Shared General Traits (SGT):** A trait shared by all News considered under analysis and can be signature of widespread definitions, language use, beliefs, cultural traits... If we take under consideration as a character for analysis “language” and different states of that character being “Spanish”, “English” and “German”, and if all News considered have “Spanish” as language for communicating -as in our research case-, then we say “language” is a SGT. For previous example, and attending our goal, many SGTs are not going to be very informative or can show methodological strategies at starting a research (like excluding News published on different languages). Some of them, can be signature of limits of our case: if assumed that we did an exhaustive research considering all News reported on all languages and we just find that decree change in regulation are only presented in Spanish by Colombian Journals, we can suspect that our case has not transcended our local interests or it has limitations for its wider diffusion.
- **Unique Traits (UT):** A trait present only in one News and not in others. This kind of traits talk about specificity of publications but do not give information for comparing shared social dispositive or sign redundant information. They can be useful in order to point out the particularities express by authors. As its frequency is by definition odd, if a UT is find later in another specimen collected, textual or of another nature, they are taken as important way to associate different specimens and can guide research focus on different moments of research.

In other words and summing up, above categorization of traits –SST, SGT and UT- are a way to explore *what is shared, what is general and what is unique among different texts*. But, as the procedure has its serious limitations, it must be taken just as one way, of many possible, to look at specimens and an aid for building a partial story based on News.

- d) Every single trait of the 27 journal articles has an entry in a matrix (see ANNEXES). In the case of *composed traits* –remember these are big fragments of text-, the complete fragment was copied in every cell initially to allow direct contrasts among samples. The resulting matrix has a size of 27x263, corresponding to 27 articles and 263 traits (simple and complex, SST and UT; there were not present Shared General Traits, but some traits shown to be widely spread among textual specimen which will be mentioned later). The *original matrix* was transformed in a matrix in which every entry represents “absence” and “presence” of every trait in every single specimen (*coded matrix* from now on). If one trait is absent it is codified as “0”, and if present “1”. The resultant matrix is then an extreme simplification and a dominant strategy to condense different topics for allowing one way to compare and organize (On the other hand, this structured and rigid method will be contrast with a following chapter, “The Z event”, in which a different, and perhaps more plastic and dialogic approach, is taken under consideration).
- e) With this information I have done two procedures: the *original matrix* is a device that allows me to compare traits more rapidly. This contrast of texts is important to create categories and talking about rhetoric dispositive, metaphors, problems, esoteric issues, important issues, and so on. On the other hand, the *coded matrix* – the one full with 1’s and 0’s- is a pragmatic set of data that I can use as a source for quantitative analysis and diagrammatic representation. For this last quantitative and impressive -but not too trustful methodology- I have decided to use software used by biological systematics for taxonomic and phylogenetic intentions, for creating hypothesis of evolutionary relationships among different species: *Tree*

*analysis using New Technology (TNT)*<sup>72</sup> (Goloboff, Farris, & Nixon, 2000). This can be seen as a wrong methodological step for doing “sociological analysis” and worst for a Social and Technology Studies community that has criticize “hard science” as a model for doing “social science”. By taking these biological methods I do not pretend just to use them for sociological analysis just by transporting isomorphies from one field of knowledge to another (doing that can be theoretical and political incorrect in a thesis like this). It is quite impossible transport methods and concepts without a meaning cost. They just are useful as a way for organizing, putting attention on different kind of traits, and for allowing me to consider what is shared, unique and completely present in my textual specimens<sup>73</sup>. On the other hand, as will be mentioned later in this chapter, in fact the methodological approximation and concepts established in this thesis are not just mere easy transfer from one field of knowledge to another. That would be just impossible. (If this approximation is absolutely useless, that is a conclusion you should to do after reading a little bit more this thesis).

- f) Here we have established journal articles as specimens that have been collected and which collecting process itself presupposes that something is shared among them. After all, a good supposition is that I have not been collecting like a machine capturing randomly News on Google. There were criteria for selecting 27 particular articles from many others. Then *TNT* is just going to allow me to organize these specimens under the presumption as if they were related to each other. This series of relationships are those ones I pretend to exploit for writing the subsequent story based on Newspapers.
- g) Though this *Systematics of News (SN)* is inspired in some sense in *Systematic Biology (SB)*, it is important to note that both differ in some aspects. BS usually try to look for evolutionary relationships, so taxonomic units’ nexus is assumed to be

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<sup>72</sup> Available for download on <http://www.cladistics.com/aboutTNT.html>

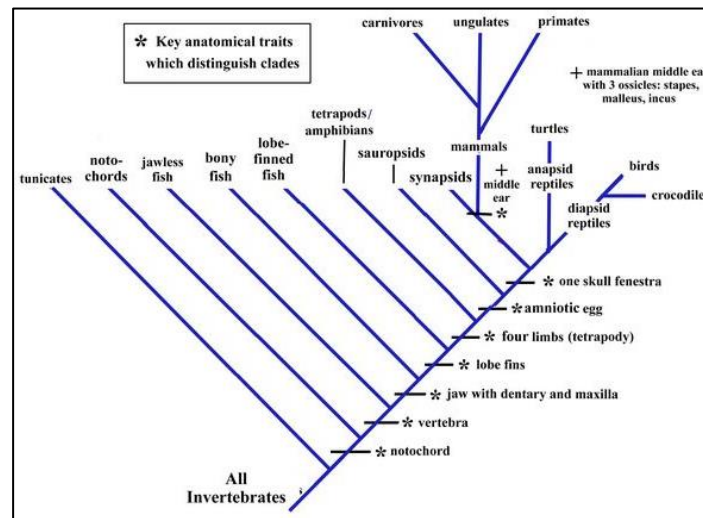
<sup>73</sup> On the other hand my election is also the result of making contrasts permanently of sociological and biological stuff as my narrative strategy meanwhile I write this thesis. And, as biologist and sociologist permanently do, this is also done to establish what is shared, what is common and what is unique in presupposed different discipline specimens.



genetic. Meanwhile SN try to find similarities and differences but nexus cannot be understood as signature of biological relationships (for example two articles are similar because they were written by the same person). Then aggrupation among different textual specimens are just one way to see a relationship based on distribution of traits but it does not pretend to figure out the structure of News relationships or something like that.

- h) One kind of result of using software as *TNT* in biology is a diagram known as *cladogram*, if it proposes a hypothesis of evolutionary relationship. Less specific this is a kind of *dendrogram* where any terminal node represents a taxonomic unit (like a species or a gene). Closer branches are said to share a proximate common ancestor (Figure 3-1).

**Figure 3-1:** A cladogram showing phylogenetic relationships among different groups of chordates. The specific shape (topology) of this diagram is in function of traits distributions and models of evolution.



With sociological specimens, however, things are complicated, and relationships among journal articles, for example, are expected to be much more reticular, due to different mechanisms of circulation of information among units considered. In other words, a journal article is not necessary the endogen cause of existence of others (but as will be shown in some cases two journal articles are even biological

related). Thus, a more realistic visual representation would be that of a network<sup>74</sup>, assuming that journals are more like bacteria, that is, their products are not only based on “parental” sources of information but they exchange easily information at disposal with their surroundings<sup>75</sup>.

Nevertheless, as selected software does not include these more sophisticated relationships, a bifurcating tree will emerge in which terminal nodes are textual specimens. Relationships shown are a proxy for talking about traits and similarities, but its complexity of interactions –its ecological dimension- will be developed by a monologue that will consider, the multiple connections among specimens that cannot be shown with this systematic methodology.

We could suspect that similarity among two News using this methodology can indicate a “*discourse relationship*”. But that is a statement I am not going to equate as a conclusion.

### **3.2. A Professional on *Biological Systematics* Enters on Interaction**

At this moment of writing I was very doubtful about my decision of considering a biological-like methodology tool in order to treat my sociological data. Though I have already explained that this way cannot be considered as an intrusion of “hard sciences” in order to analyse “sociological information”, I was afraid of choosing -of many possible ways- and taking -of many different tools-, the “appropriate ones” in order to write and to associate my multiple specimens into a story about regulation, collecting and social interactions. Then I realized of two things: first, to remember scholar’s advices about not considering a *scientific method* as sometimes have been considered in natural sciences: as the way to understand and describe the reality “out there” but to make explicit that no “real” or “better” method exist (for me now). A *method* instead can be seen as *one* way to

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<sup>74</sup> Not in the sense of Actor-Network Theory.

<sup>75</sup> In biology many considerations have challenged the imaginary of a “tree of life” always with a bifurcating pattern. Hybridization, symbiosis, Horizontal Gene Transfer have been mechanisms proposed in order to see the reticular shape of the tree of life (Gontier, 2011). That is, the metaphor itself of an evolutionary pattern seen as a tree is under question in Biology.

promote associations and interactions which, having taking another method, could not be possible. In this sense method election in the process of research constitutes a moment of bifurcation and the feeling of contingency, that is, the feeling that other ways can always be taken. “Better or not”, “good or bad” those are labels I and others –you among them- a will be used after reading it as a part of something bigger. Second, I have another problem: if I am going to use *something* then, at least, I have to know and feel myself as a *good user* of that something. If not, method, tool or other device usage will not be as interesting and profound as could be necessary. What do I have to do then? To become an expert in systematics in order to do a better work and promote less criticism? So, at this moment of writing, I remembered that people need to interact with other, sometimes known as friends, mentors, and the like, to hope that these interactions can help in order to promote others kind of, and frequently unexpected, interactions. Another bifurcating movement... but remember, ;this is not only a research about a far and strange scientific issue! this is a research made of, and about of... social interactions-in-the-making, in which researcher is an actor and can ask help from the public.

AT THAT MOMENT OF SELF-INSPECTION, ANOTHER SCENARIO APPEARS. NOW THE RESEARCHER IS NOT ALONE. HE IS WITH A CELLPHONE, A NON-HUMAN ACTOR. ON THE “OTHER SIDE” OF THE CALL, SANDRA REINALES IS. AFTER TALKING ABOUT JOB ISSUES AND FUTURE UNCERTAINTIES JUAN PABLO PROPOSES SANDRA TO TEACH HIM SOFTWARE SHE HAS USED MAINLY TO LOOK FOR RELATIONSHIPS ABOUT PLANTS BIODIVERSITY. HE EXPLAINS PART OF HIS RESEARCH INTENTIONS AND SANDRA ACCEDS TO FIND JUAN PABLO IN ANOTHER ESCENARIO, A FACE-TO-FACE ONE, IN ORDER TO PARTICIPATE OF THIS RESEARCH WHICH SHE FINDS, OF COURSE, VERY INTERESTING.

Previous to our accorded face-to-face interaction, or, quasi-structured interview, I sit down alone at home to think about the sense of this movement on my research. I take my 13 x 9,5 cms size notebook and starting to write some questions: some have the pretended intension of directing my interview; some others are not going to be exposed but have the pretended intension of directing my thoughts. Before interaction I am worried about two things: to make questions that allow me recover information or ideas of any value for any-practical-research-purpose, and on the other hand to ask her questions that would not make me feel as an incompetent biologist. She knows me; I studied biology with her; and she has a good impression about me. So, I have to structure a valuable interview for all possible interests. The method, the concepts, the general issues she will explain are not

quite odd: I have been a student of biology for some years but I have never done a *bona fide* classification of a biological group of interest. Just some quite abstract exercises of classifying for training purposes as an undergraduate. That is why I decided to call for her help and doing some participant observation. My intention: to be involved in an interaction and to gain expertise; to hear her opinion and look for her own methods to doing Systematics; to challenge our own prescriptions, methods and hypothesis.

*Fontibon, Bogotá*

*06/03/2016*



*Sandra and JP on interaction*

Sandra Reinales is not an unknown person-organism-actor for me: mom, biologist, young scientist, pretty woman, student, smart girl, leader, friend, botanist... I know something about their beliefs, practices and identities. She receives us – I am there with my couple-very friendly and ashamed because she has not finished the lunch she invited us. We are at her home.

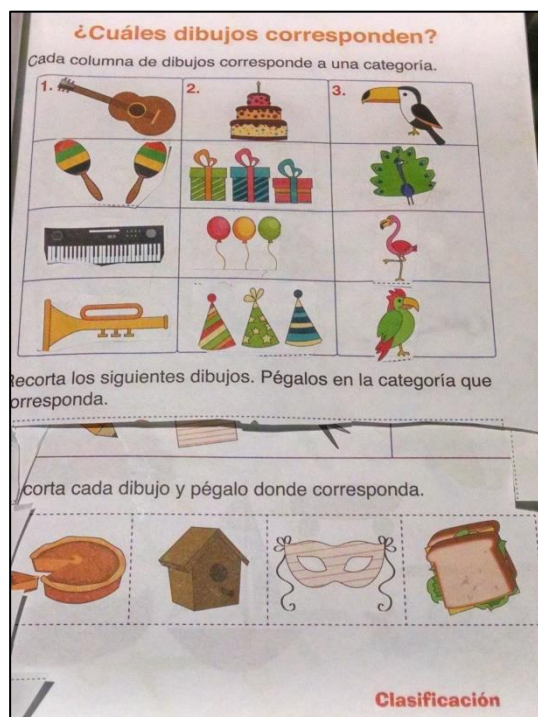
She is not alone. Her daughter Sara is with her. A “little-Sandra”, whose personality make her run to her bedroom: Sara has any interest in constructing a long interaction with the known intruders.

I know that the first part of this set of interactions must be use to talk about us, not about a method. “How are you?” ”How is Gustavo?” “When do you start to work at X University?”, and the like. I am very patient... though this visit is different in the sense that I expect something different from our talk. I have to wait even for lunch. We have to “talk about us”, about our “normal topics for interaction”. After lunching vegetarian, it is

time to take another role, or performance, one, I think, I have never done in ten years of relationship with Sandra.

Now, she plays as an interviewee and I play as a social researcher. She is my friend but at that moment I start to direct me to her, and to think about her somehow different. I think she also plays to perform a new character. The elements on this new scene are put on the table –some literally-: my notebook and pencil; a recording machine; a laptop with *TNT* (the software, of course). Some other elements are on table: toys, dishes, and papers. Some other actors are “behind curtains”: Sara, doing her homework, Maribel, my couple, studying for an exam. But I am not focused on these elements and extras. Should I? What I think is important in *that* moment is *the* conversation with Sandra, and *the role* of the software within *that* laptop, is what, I think, really matters. But before starting (and that “before” has to be taken cautiously) Sara “interrupts” in order to ask her mother how to do her homework. I am not the only one that is interested of learning about a method in that moment. Sara’s homework captures my attention and meanwhile she is talking I realized that my observation has already started though *that* “little extra” and *that* homework were not stuff I was initially looking for: Sara’s homework is about how to classify correctly some objects and I feel deeply connected with their talk (Figure 3-2). The duty consists in ordering a series of images in a table whose columns have an image that established what the book call a *category*: A guitar, a cake, a bird (surely a representation of a *Tucan*, belonging to a taxonomy category, for biologists, known family *Ramphastidae*).

**Figure 3-2:** Classifying everywhere. *Left.* Sara’s homework and the resultant classification which presents the little kid as a competent sorter after Mom’s explanation. Three categories, and nine elements pasted in every column, each of which delimitate the rank of positions possible to occupy. *Right.* Sandra’s classification of clothes. To every column we can ascribe a category as “towels”, “pants”, or “t-shirts”. (In order to get approbation for taking a photo of these “classifications” I have to promess Sara I will take her with my niece Mariana to watch a movie).



Sara does her homework and her non-planned intervention is included in my thesis. And that intervention makes me wonder about classification in quite different aspects of life, not only for biologists or sociologists, in fact, those are questions I am really interested to issue.

*JP: The first question I want to make is something very general<sup>76</sup>, what do you classify for?*

*S: It is to arrange and, in order to understand what there is<sup>77</sup>*

<sup>76</sup> I constantly, as interviewer, classify explicitly the kinds of questions (The *first* question ... very general). That is, I make an effort to show a category to Sandra as part of a classification. The *question* itself can be presented as something relevant in every step of interaction, and its classification as a way to structured interview and justified its order and existence.

<sup>77</sup> “La primera pregunta que te quiero hacer es algo muy general, ¿para qué clasificas tú?” / “Es para ordenar y poder entender qué es lo que hay”

To arrange. *Para ordenar*. Sandra, as biologist, has an especial interest in arranging groups of plants. In “biology world” she is botanist. After ordering, she explains, the next step depends on discipline researcher membership and what are its own objectives. In her case she is dedicated to what she calls *phylogenetic systematics* and to answer evolutionary and biogeographical questions. That is what she is interested on. One of the kinds of questions she makes as a sorter is *how has evolved the characters in this family?* A character is a characteristic, physical, behavioural, or genetic, like the colour of a flower, the aggressiveness of a cat or a specific sequence of DNA. But, in order to make a consistent and “good answer” what she insists has to be done first is to imposed an order in a disorganized set of specimens. I, as biologist, and as sociologist looking for a method of classification, understand her very well. I share her answer. She recognizes that other people (in biology world) ordered with other goals: for conservation, for taxonomic purposes, for evidencing a new category (a new gender or family for example).

The elements necessary for Sandra to accomplish a satisfying classification are: *i)* to identify characters that talk me about the evolutionary history of any given group (she says similarity is not enough); *ii)* to use relevant morphological or genetic characters through relevant methods to evolutionary-history-purposes; *iii)* using a proper method, which for the case is *phylogenetic systematics*, which “try to rebuild family relationships among species”,<sup>78</sup>.

In one moment of the interaction I remember something that happened in my biology undergraduate past and I use that something in order to ask a question: when I was studying in one particular course about systematics I asked a professor that if the goal of systematics was to build a story, and you get a cladogram, is that the complete story? Or what is next?

Sandra answers to this old question: the first step is to see how they [species, taxons, genes] are related to each other; after that, and once again depending on research purposes, we have to follow other methods. She tells me an example: if I want to know the history of

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<sup>78</sup> “... intenta reconstruir las relaciones de parentesco entre las especies”

a character I have to map on cladogram (in which taxons have appeared); knowing the place on cladogram of characters she can infer, for example, if the first plants have five stamens instead of any other number. A particular goal of her interest is related to biogeography, that is, how the species evolved taking into account their places of occupation. Has the rising of the Los Andes Mountain allow plant group diversification? First Sandra will have to arrange. For her, once you have imposed a particular order, a *history of family relationship* then you can use it as a point of reference in order to answer many other questions. That is why it is so important giving a particular order and it constitutes an obligatory passing point (Callon, 1986) in order to progress in research.

WHILE I SUBSTRACT ANSWERS ABOUT HER METHODS. SARA CONSTANTLY “INTERRUPTS” OUR CONVERSATION IN ORDER TO KNOW THE NEXT STEP ON HER OWN HOMEWORK. SHE, LIKE ME, IS HIGHLY INTERESTED ON HOW SANDRA THINKS ARE THE STEPS ON “QUITE” DIFFERENT METHODS. SHE LOOKS APROBATION. WHEN SARA INTERRUPTS, SANDRA IS CONCERNED IF I CAN STOP THE RECORDING MACHINE. “Don’t you can stop it?” I DO IT; I “PAUSE” OUR INTERACTION.

*JP: What do you think is strong and why you choose phylogenetic systematics instead other methods?*

*S: Well, basically...<sup>79</sup>*

- 1) There are methods that just focused on *similitude* among groups
- 2) Because Phylogenetic Systematics (PS) looks to rebuild history of relationship among groups
- 3) PS has an output: *non-artificial groups but natural groups*. That is, it arranges based on relationships about ancestry and not only on how do they look alike.
- 4) PS establishes a *homology relationship* among states of character<sup>80</sup>. Useful states of character are those ones that can be established as *homologues*, that is, they are related by ancestry. Two structures like an arm and a fin are considered homologues because it is established that both structures, although different and used for different purposes both are assume to have evolved from an ancestral

<sup>79</sup> “¿Qué piensas que es fuerte y por qué elegiste la sistemática filogenética en lugar de otros métodos?”/ Pues bien, básicamente...”

<sup>80</sup> *States of characters* make reference to different forms of that category named character. For example, if colour is the characters, one possible state can be white, another valid, red, etc. Quite variable characters, as color hair, says Sandra, are very plastic and they are not suitable for proper classification.



structure, that is, they are considered evolutionary related, therefore are considered homologues (Figure 9).

- 5) Before establishing an ordered among groups, it is necessary to established which states of characters are homologues, and therefore, useful for organization-practical-work. (e.g. “the hair on this insect leg is homologue to the hair on this other insect leg”).
- 6) *Establishing homology* has its own methods... “but in practical terms is researcher criteria”<sup>81</sup>
- 7) Looking position, function, previous researcher knowledge of how characters have evolved... those are criteria used by researcher in order to established homology<sup>82</sup>.

**Figure 3-3:** Structure homologues among two species of plants representing “ovaria type”. Photographs of electronic microscopy and diagrams simplifying the ovaria type if done an imaginary cross-section cut. Up. *Campylospermum reticulatum* (Apocarpous state of character: carpels are separated). Down. *Wallacea insignis* (Syncarpous stat of characters: carpels are fused to form a single structure).



CLASSIFICATION IS EVERYWHERE. AT LEAST AS I CAN SEE IT IN *THAT* MOMENT. SARA’S HOMEWORK, CLOTHES ARRANGEMENT, INTERVIEW TOPIC. AFTER KNOWING HOW SHE CHARACTERIZES HER METHOD I COMMENT ABOUT HER OWN EFFORT TO EXPLAIN SARA HOW TO CLASSIFY PROPERLY. I DECIDED TO ASK HER:

*JP: What do you think [PS] is similar or different to the methods we use to classify everyday life?*

- Similitudes: “*Ordenar... básicamente*”. Arranging...basically. What for? For using *that* order or for understand it.

<sup>81</sup> “... pero en términos prácticos es criterio del investigador”

<sup>82</sup> Molecular alignment establishes homology among pair bases but for her this is not quite enough to do a proper homology hypothesis.

- “Differences”: *what we do in everyday life is to... order... jumm*”. SHE HESITATES, I FEEL ... *jno!*, *It is the same. Using a criteria right? Useful for us... in this case, yes, phylogenetic systematics does the same... I was going to set it as a difference but not, that is also a similitude.* She says then that she really does not know it. She thinks. She meditates. She invokes an outer-inner voice in order to explain what she believes another possible biologist would possible answer for establishing a difference among this scientific method and a daily-life method for classification: ““*¡but we are finding the truth!*”” She raises her hands as does it Mufasa with his little puppy while she characterizes the *other* biologist. But she does not believe what her characterization does. She does not believe that she is revealing “the truth out there” as agent Fox Mulder would and also the other kind of biologist she ironizes. She says that *they* -the kind of biologist she belongs to- postulate “barely one hypothesis”. I think. I meditate. I categorize... *¡she is a relativist! ¡God bless new young biologist researchers! The truth? The real history? Bah! It is just another job -she explains- It is what they do, in the best possible way of course. She insists with the inner-outer voice she does not believe in “¡we are looking THE history!”*<sup>83</sup>. No, she does not anymore. Science is another work, for whom? For scientists. After this brief reflection she tries to answer the part of the question focused on differences. She points out its mathematical and technological development. That is, scientists used different and complicated resources for doing classification. But an essential difference cannot be explained by her. Her method and others of daily life look very similar.

After hearing Sandra perspective about why she classifies, what method, elements and criteria she uses to do that work, and what she believes about differences and similitudes among her method and others, I decide to confess my intention with all this interview to her quite explicitly: I explain her about my need to classify some *News*, which are, for now, my research specimens; I describe her my idea of hearing something about classification in biology in order to hear an “advice” from her. So, my exposed intention to Sandra directs interview in a way in which I hope to collect her opinion about my

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<sup>83</sup> What about *my history*? Also in that point, I agree with my friend (and with the interviewee). In my case, and my initial objective when this research project was put above the table, at least linguistically: *I decided to write a story, not the history.*

approximation and the goal of classifying News. After this clarification about one of my intentions with this interaction then she starts to ask.

*S: What is your criterion for classification JP? We have criteria: the ancestry relationship.*

*What is yours?*

*JP: (My answer is a question): What would happen if I used this method... even if I do not want to established ancestor-descendant relationships? / S: No one<sup>84</sup>*

I do not understand her *No one* but I keep talking and hearing. After this *No one* she starts to explain something about the important point of establishing *a priori* homologies, the part of the method that involves the assumption of ancestor-descendant relationship. Her criterion. Then she explains to me about *parsimony* and the way the software produces all possible “trees” and selects the most parsimonious, that is, the one that supposedly require less *ad hoc* explanations. “Explanations” in the language software, are seen as “steps”. Parsimony approximation consists on diminishing “steps”, and building the “shorter tree”, which, remember, is a phylogenetic hypothesis on family relationships among some given specimens. But she explains against one of my “clarifications” that this method does not necessarily assume that the “shortest tree”-therefore the one that need less “explanations”- is the tree that depicts the real relationships among specimens under study.

Historical events can be less parsimonious than expected by an optimizing algorithm<sup>85</sup>. Meanwhile she explains, she refers to software and to the method as something capable of “counting”, “washing its hands”, “arguing”, that is, as something capable to do what something like a person can also do. Her personification of her method put some distance with her own argument: it is the Method’s argument.

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<sup>84</sup> S: ¿cuál es tu criterio para clasificar JP? Nosotros tenemos un criterio: la relación de ancestría. ¿Cuál es el tuyo?/ JP: ¿Qué pasaría si yo uso éste método... incluso si yo no deseo establecer relaciones ancestro descendiente?/S: Ninguno

<sup>85</sup> ¡An interruption! Sara needs help with homework but she cannot identify what a figure is. Sandra is not sure. I also try to classify the figure in my known object categories. Perhaps is a bottle. Sandra thinks that, as we -she and I-, good classifiers, cannot determine a coherent category for the image, and there is a “word” next to the image, “pesa”, she arrives to the conclusion of awarding to Sara’s teacher a mistake. That is, as we cannot arrive to a category by means of consensus, then she accounts this inability as a problem of good correspondence external to us.

She explains parsimony, the core part of her preferred method for classification. She also recognizes other methods –like *maximum likelihood*- which she really does not explain. To the question, make by herself, of which kind of method can be more useful for my own practical purposes, she says there are differences among methods, sure, but she cannot account for a comfortable question of which method to choose. She feels uncomfortable for not answering her own question.

The history, or story, that Sandra creates are the one that she can built, to sustain easily and to make credible. A story that can be trackable and the one which she, or other, can point its limitations. But for achieving her homework she needs a resource in order to build an organized schema for representing her specimens. That is TNT.

*Sara: What is TNT?*

*Sandra: software, my love*

Before *TNTing* we have to build a matrix with data. Full of characters, states and taxa (Figure 3-4). At least, Sandra indicates, one has to have one more character than number of taxa in order “to solve the tree”. Recommendation: more characters the best<sup>86</sup>. If there is a state of character present in all specimens, in order to use them for classification, these are not useful (if all roses are red, then we cannot use this state of character to form groups). Something similar happens when you use characters that are present only in one defined specimen: it can signature something about its identity but not something useful for classification-practical-purposes.

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<sup>86</sup> Morphological characters are fewer than molecular ones. That is because a position in a sequence of a molecule as DNA, is considered a character, with four possible states: Adenine (A), Guanine (G), Timine (T) and Cytosine (C). As sequencing techniques have been improving, people that work with molecular data have thousands of characters. However, many systematics - including Sandra- render more confidence to homology hypothesis that come from morphological analysis than molecular ones. Sandra says that as “you” can rigorous study them “you” can check good characters and discard bad ones, as quite variable states. Following that, morphological characters are more informative than molecular ones. I can assumed they are more trustworthy, however Sandra does not mean that: she says morphological characters are “more difficult” to obtain and more informative, but it does not necessarily make them more trustworthy.

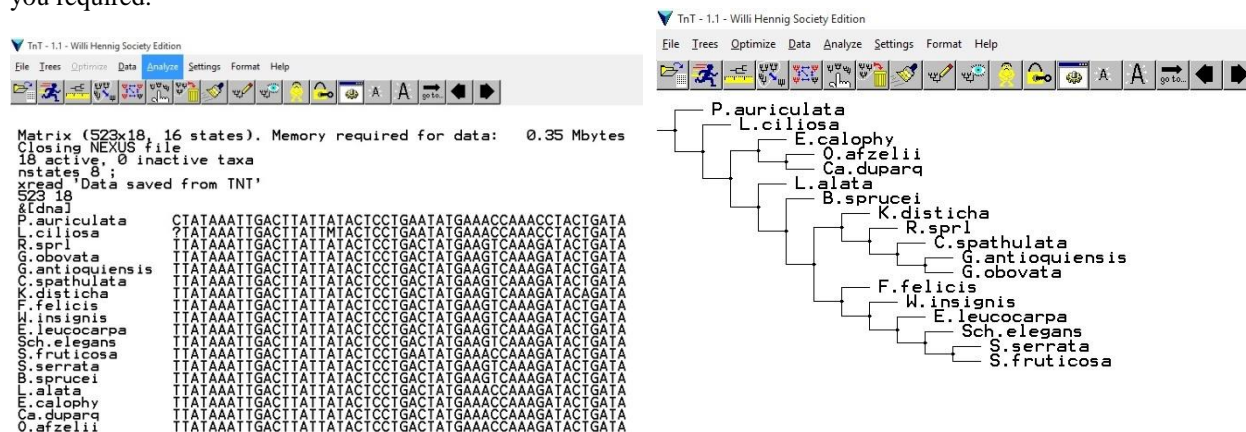
**Figure 3-4:** Nexus format on notepad. A specific form for presenting data demanded for software in order to be allowed to continue on the analysis by means of *TNT*. On columns the states of characters (A, T, C, G, every single letter representing one nitrogenous base of DNA); on row every single species of a family of plants. Every “position” of DNA is a character with four possible states (Adenine, Thymine, Cytosine or Guanine). The information must be situated in specific conditions in order to be read properly by the software. For the case, the matrix indicates a total of 18 taxa and 523 characters. Before arriving to this matrix, many other methods have to be done in order to extract DNA from specimens; converting it in a good sample for determining its DNA sequence; to use other programs to correct and make congruent information gather from different molecules; to edit the sequence; to erase; to align. Sandra recognizes that all these steps prior the “proper matrix” have many assumptions or hypothesis about the nature of the sequence. These previous procedures are for generating a “consensus sequence”. That is, the sequence on the matrix is not only raw data: it is a raw of assumptions about how a particular sequence must look in order to be used for practical-classification-purposes.

```
#NEXUS
BEGIN DATA;
dimensions ntax=18 nchar=523;
format missing=?
interleave datatype=DNA gap=-;

matrix
P.auriculata CTATAAATTGACTTATTATACTCCTGAATATGAAACCAAACCTACTGATA
L.cilliosa ?TATAAATTGACTTATTATACTCCTGAATATGAAACCAAACCTACTGATA
R.spr1 TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
G.obovata TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
G.antioquiensis TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
C.spathulata TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
K.disticha TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
F.felicis TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
W.insignis TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
E.leucocarpa TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
Sch.elegans TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
S.fruticosa TTATAAATTGACTTATTATACTCCTGAATATGAAACCAAAGATACTGATA
S.serrata TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
B.sprucei TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
L.alata TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
E.calophy TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
Ca.duparq TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
O.afzelii TTATAAATTGACTTATTATACTCCTGACTATGAAGTCAAAGATACTGATA
```

Once you have built a proper matrix, we can open the file with the software – TNT- and the matrix is seen in the platform of the software. Without much explanation, she assumes I already know which are the first steps I have to do in order to establish a successful interaction with the software: *click* in the icon that represents TNT on desktop; go to section “file” and “open input file”; searching for the file with the proper format and *click* in order to see if “it can read the format”. Then, the software “show us” more or less, the same information of the *Nexus* format and any competent reader can see equivalence among what the nexus format shows and what the software shows us. Once again, Sandra starts to talk of the software as something capable of doing things, some of them understandable, others a little bit more mysterious, but all of them of importance in order to achieve a set of future and desire interactions to get our “tree” or the depicted representation of classification (Figure 3-5).

**Figure 3-5:** TNT representations. Left. The matrix. As shown by TNT. Right. The tree. For the example used by Sandra, she explains me that the software found the two shortest trees, that is, the most parsimonious among many possible ones. Figure above shows just one of them. The young botanist indicates that the first group in the list is taken for the program as the “outgroup taxa”, even if you have defined many others you have to take into account this program imposition. You work in order to choose and locate one outgroup to respond to software own constraints. So, you need to know very well what it requires in order to get what you required.



Once successfully the matrix is shown on TNT, Sandra indicates that it allows doing many different things. As I also recognized these multiples ways we can take from that moment to many others, I tell her that she should choose the way she always does when doing her own daily work without any external –myself- interference.

First, she specifies we can give different weights to the characters or attribute them the same one. Here “weigh” refers to the relative importance of one character among other if researcher consider it more important by any given reason. Researchers in this step have to consider “external information” in order to decide if different characters weight different. Sandra does not like give different weights or establishing a prior relevancies to sequences among characters because, for her, this is another way to postulate more “hypothesis” that demand researcher explanations prior analysis for building trees.

After deciding it giving different weights or not to different characters, then you go at the square named “Analyze”. ¡Quite important action to be left to software! But “analysis” is not homework of the software itself. It is done by an interaction among the software and the researcher. In this interaction the software can do things than are not proper for

researcher. And the contrary is valid (as if the researcher does not use the correct format or establishing a parameter that cannot be input for a given set of data). For explaining, more or less how the software *analyses* she recurred to a metaphor: if you have few taxa, less than ten for example, you click on “implicit enumeration” and this option can show you all the possible parsimonious trees. But if you have more taxa, then the computer just search some trees of a complete forest in a mountain. More taxa you have more possible trees to be generated and computationally, the software has a constraint, so it cannot search all shortest ones in all the mountains. It is recognized a limitation due to its own [the software] constitutive resources and capacities (even battery in a precise moment it’s a limit for software own work and interaction with it), but *TNT* is quite fast if compare to other analogues software, and aspect a researcher must consider in order to optimize its own research time. And thinking in research time is always a valuable issue, for biological and sociological investigation<sup>87</sup>.

Once generated the “analysis” we can see with a visual representation what a phylogenetic research desires most: a network which has all specimens considered and constitutes a hypothesis of relationships among them. The logic behind all these fast process for generating a tree from a data matrix considers all the characters and how each of them forms groups. As expected, there can be “incongruent” information, that is, different ways of grouping taxa depending on characters present. So, what to do in order to choose one tree among millions possible combinations? The software decides for you: it chooses the trees that imply less “appearance” or “disappearance” of characters in one branch or another. It is “less parsimonuos” to say that character X appear once than saying than appeared once and then disappear  $n$  times in  $y$  taxa. What the parsimonious method used by *TNT* is expected to do is to build a tree, or the trees, with allow a grouping, or the groupings, in the form of an always bifurcating tree, that has less “steps” or “assumptions” about the possible transitions among states of characters. Given a particular tree, if a character is present in one taxa, but also appears in another which is not in that particular

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<sup>87</sup> When Sara look at me with one of her toys in my hand tells me that I do not have to be playing when doing homework. Her method for doing homework indicates that some activities are forgiven in the process, and if they happened they are point out as deviations and not part of a constitutive and valid process of doing a duty. I followed her advice.

group, then it is named as a *homoplasy*, that is, a character which evolved independently in another branch of the tree. Homoplasies are confusing characters for classification work, because ideally, phylogeneticists want to have characters that speak about hereditary relationships among groups, not characters that are *just similar* among them if that similarity is not because of ancestry, but by other possible reasons as adaptations to similar environments.

Given a particular tree, or more of them, and given that I can create one tree using just one source of information (like with a sequence of DNA), so, every time I get one tree using one particular source of information, Sandra makes clear, we are getting the tree of *that* source of information (for the example used by Sandra, we got the hypothesis of relationships among DNA sequences belonging to different species, but not the *history* of those species).

The next step is to unify information from different sources of information in order to get, as it is possible, just one tree. For Sandra, it is not good to build a “total evidence” matrix mixing molecular and morphological information because each of these resources have different ways to establish homology among characters. In one way or another, for Sandra establishing homology using morphological characters is more elaborated. So, she establishes two different sources of independent evidence: molecular on one side, and morphological on the other<sup>88</sup>.

*JP: Do you believe that most people who make classifications understand software well?*

*How do they work?*

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<sup>88</sup> As she is questioned about her method and software managing, she has to stop and does not answer immediately. She has to interact with the computer in order to use this interaction as an input for our own. When she is asked something that look to represent a difficult for her, and about which she has not an immediate answer, she has to explore the software; to go here and there; to do more *clicks* than usual; to try different ways; to do clicks followed by a “no”, a “jum”, “ Let’s see if I remember”, and expressions that *increased* an expected shorter interaction. When finally she gets a satisfactory output from the software, she continues speak fluidly.



*Sandra: Not at all. And the most, I would say a 99,9% do not understand the math behind them. Many are simple users*<sup>89</sup>

The math is quite complicated. *Da mamera*. The truth is that is quite boring to understand all mathematical issues she knows, and the most, that exist, but they do not understand it. Some other people, like Professor Lynch mentioned in prologue of this document, do not even use software. They are systematics of paper and pencil says Sandra. These kind of systematics are “afraid” of using this software because all the things the software does and they do not. All the assumptions that are not under their control. For Sandra, Lynch’s method are logically more sustainable (less assumptions and because he does everything) but not quite useful. The “chance” of software nature does not make attractive this procedure to people like Lynch. Sandra says is not afraid about the chance intrinsic to her method because she does not believe that her work is to build “THE history”. Then, chance and THE history, look a combination that does not evoke a problem due to her intention of doing something applicable for her own practical classification purposes. Her method has limitations but she is reflexive on that: “we have to go forward” in spite of all the limits and problems of the chosen way. “My conclusions are going to be conservative because I know my limitations”. Even if you do not understand the entire math, all the tecne, all the unknown assumptions, a software, like TNT does, it does not constitute a real obstacle for “the most” users who make classification following these procedure. They got results, relationship hypothesis of their respective biological groups of interest. They use and do what they have to do in order to achieve its beloved tree for research and practical classification purposes.

Once you get THE tree, considering all the measurements, assumptions, hypothesis, software and other needed and liked resources, you can use it in order to build, a proper history, of groups and of characters; a reference to establish time and space on the history, when correlating groups to different geographic locations and time instances of emergence of a given group; to sustain taxonomic categories given the relationships on the tree (¡look,

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<sup>89</sup> JP: *¿Tú crees que la mayoría de gente que hace clasificaciones entiende los programas bien? ¿Cómo funcionan?/S: En absoluto no. Y la mayoría, yo diría el 99,9% no entendemos la matemática detrás de. Muchos son simples usuarios.*

this is gender *Wallacea*, and comprises *this, this an this!*); to see the importance of some protected areas for biodiversity conservation of a given taxa; to be of pharmaceutical and medical use (if a drug comes from this species, wouldn't be nice to know which are its closest relatives?). That is, you can use the tree, as a way to create more interesting histories depending, of course, on your own practical and research interests. And every step forward in order to get a *history* will assumed another set of resources and methods to achieve a proper history for a proper group of interest.<sup>90</sup>

Summing up, all the method narrated here, or the method as something told by a research on systematics, Sandra Reinales, can be seen as a constant work for obtaining a tree, or hypothesis of relationship, and this achievement can be put as the final step of a simplistic and heuristic sequence of processes each of which have their own bifurcations which alters the progressive linearity (this is a topic I will argue later on final remarks on this chapter and thesis).

The sequence of processes can be represented as follows:

*Research question -> Establishing groups (inner and outer group) -> Contrasting among inner and outer group in order to "really know" my group is a particular a proper group -> To choose convenient characters and establishing hypothesis of homology (avoid non-variant characters on the entire set of specimens) -> To measure and to codify characters (quantitative or qualitative) -> To build a proper matrix in proper language for software convenient reasons of reading (e.g. Nexus format) -> use a software with some default and convenient parameters and trust on its own capabilities even if you do not understand very well what it does to produce what it produces- > To get a tree, as a visual representation, or many of them, which*

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<sup>90</sup> JP: *From this interaction we just have, what does it differs from other interactions we've had for ten years?*

S: *What is different? Hahaha No, we've always talked about ñoña stuff.*

But there are differences, Sandra knows: she realizes that she knows more about a specific topic then she talks more; there are no "interactions of knowledges" because my relative ignorance about the method; She realizes than in previous interactions we have talked about topic which we know more or less the same, and then "we can discuss"; I have some "prepared questions" and therefore, I can "to route the conversation where I want it". Here she is focusing on structural aspects of conversation itself rather than cognitive differences. But there is a disagreement with my presupposed ability "to route the conversation". Although I recognize I have done some previous work to achieve "a particular route", the unfolding of the interaction ramifies in many directions, and in fact, makes me include things previously non-planned. In fact, when I try to finish the interview with a "Thanks Sandrita", She says "You are welcome" but adds: "But we did not talk about...". After that "But", there are other 18 minutes of talk and recording. "Heuristic search", "supports of nodes". I want to finish, but she insists it is important. I keep hearing for not losing my friendship but I was not very convinced that following words will help more given my own practical classification purposes. At the end I include some of her final remarks on my last section about this interaction.

*can be considered the most parsimonious given a sequence of hypothesis, limited resources and computationally capacity. Then, researcher has a phylogenetic hypothesis about evolutionary relationships among taxa. -> Used the tree to do other things and build more interesting histories using other methods -> ????*

These steps are correlated with different resources like reviewing specific literature published in recommended journals as *Cladistics*, *Caldasia*, and the like structured academic texts. Using software is demanding for big data but it is also used things like the all rule for getting data, pencil for making draws and annotation while looking at specimens or when thinking about promising ideas; other thing are used to magnified senses as stereoscopes and microscope, specifically important for observing facts, comparing and establishing homologies; of course, the computer will be of big importance for saving, editing, and writing information and many other and bifurcating processes. The steps have different territories for its correct performances as laboratories of different kinds (it is not the same where you get the DNA to the place you watch some flowers at electronic microscopes). The herbarium will have a special meaning for Sandra, the biological collection where she can get and save her specimens of interests. Of course, part of previose research happened on field (where you catch things) and in other familiar places as “home” or “the office”. In all these you use different thing, talking with different people and analyse even if you think it is the last thing you do.

### **3.3. Systematics and my own Practical Classification Purposes**

News are not Plants. Classifying News cannot be exactly as classifying living organisms. But it does not mean that talking about classifying can help to think about *classifying* for any-practical-purposes. Knowing method for other practical classification purpose (phylogenetic systematics) can influence about one method for other classification an analytic purpose. In order to complete my *Systematics of News*, exposed in previous sections, let us considered the next methodological morals in order to complete our approximation for organizing our particular specimens.

*What specimens to choose?*

As Sandra, I have to consider the task of which specimens to take into account. This selection was already done as expressed at the beginning of this chapter. There was not something like an “outgroup” but when reading different News on the process of gathering more News it was evident that a constant process of excluding other considered non-relevant News. For our approximation an outgroup does not appear as an useful concept for now and selection is done by means of an initial non-specified criteria but of considering News I feel related to the topic of collecting, regulation of biological specimens.

*What about homology?*

Two traits are considered homologues if they are assumed to share an ancestry relationship for biologists. But what about my News? Is there such a thing that two traits, like a *University* share a common ancestry with another entity as *government department*? Are a *University* and a *government department* different states of a character we can call an *institute*? Here there is not such a thing as an evolutionary relationship but when you read two or more papers, it is useful to consider – and I think it can be almost inevitable- that two or more different *words* are referring to the “same thing” for any given issue under consideration. So, based on Henning Principle of Biological Systematics, I postulate the next modified principle for our comparison effort among News:

Gonzalez-Henning Principle. *If you find two considered similar traits in two different News, first assume those traits are homologues, that is, their similarity is due to a meaning relationship among those traits whose origin is “beyond” those texts.*

Example: If the name *Gonzalo Andrade* is found in X News, and the name *Gonzalo Andrade* is found in Y News, or a similar state of character, like *G. Andrade* then we first assumed that the ones than help to build the News under comparison used similar sources of information. That is, we assume a story of construction that uses, for example, the same source of information, for those that are referring either to *G. Andrade* or *Gonzalo Andrade*. This assumption has the consequence of creating a category (we can call it “Gonzalo Andrade”), with different states on different News. So, we can establish that

both or more traits of different sources are “homologues” in the previous sense. They are assumed to be related and therefore, its presence or absence can be of interest for classification and analytical purposes.

Let us remember that not necessarily if A looks like B means that A and B are homologues, as Phylogenetic Systematics also advises. That is, sometimes G. Andrade could be referring to another entity as German Andrade, we consider different to another G. Andrade that can be referring to Gonzalo Andrade. But that determination can be made on considering the trait on its contexts – for example when journalists describe a profile of their interviewee – or, when considering other kind of specimens like interviews, books, articles, which establish a context for reading a valid interpretation of any given trait. One more time, that is quite similar to Systematics approximation when considering traits, that is, information about its place on its particular morphological, genetic contexts. Traits are situated in a particular structure. Our traits are also embedded on contexts which, of course, majority of times we consider also as traits in a structure.

*What about the technology to build an organized structure?*

As we could infer from our interaction with Sandra some methods allow you to participate more than others. The “others” need technological intervention that diminish your participation and diminish your information on the process. But the use of these technological tools is considered of great importance when you use a lot of information. Look to be a trade-off between participation-on-the-process and coverage. This approximation looks too risky in the sense that you have to render responsibilities to the *tecne*. Trusting in black boxing. So, for our approximation, though being aware about using something strange for structuring information, we will make the exercise not only of choosing traits, considering different states and validating homologues, but to use the same software Sandra taught us before. A tree as an expected result of this process will be shown and used as a way to starting other narratives for analysing<sup>91</sup>.

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<sup>91</sup> Doing classification as biologists do has been done for other-non-biological purposes. See for example Niles Eldredge (2009) evolutionary history of cornets. In his example, Eldredge try to show a classification of an artificial system focusing on the differences among comparing the resulting tree with the ones obtained

### *Talking about a method*

In order to explain a method, there are used different resources that are considered part of the method, but that plays the didactic role for explain the method itself. For example, the computer and the software that inhabits it. This element it's a constitutive part of explanation and its correct use allowed a proper explanation. But if it does not respond then appears the feeling of dissatisfaction –as in some occasions occurred when interacting with Sandra-. In this process of using computer as something part of the method for classifying and also for explaining, Sandra could detect *failures* in the wanted interpretation, so, the explainer uses other ways and resources to achieve this communicative goal if the computer it is not enough for doing this, like drawing a picture in a piece of paper for showing what the screen cannot show or she is unable to make appeared in the moment she needs it.

One of the aspects Sandra stressed was her inability to point out which will be the difference in my results if I use *maximum parsimony* or other *distance method* for doing classification. Let us remember that her preferred method is the parsimony. By looking another kind of specimens under consideration, she was not sure about the differences on the expected trees if I would prove both methodologies could be interesting for her. This was an aspect she repeated in several occasions without being asked for. That is, this point of our interaction could have provoked on her a state of reflexion she considers important even for her own classification purposes.

About the method other things can be summed up: *i)* The method is considered as something with constitutive advantages and limitations; *ii)* Computers as humans, have research limits due, as causes behind its agency, to computational or cognitional constraints; *iii)* Competent users, as Sandra, recognize its own limitations to use software and method (like the math “behind” all this) but this is not considered an obstacle to use it and being a “good user”. In fact, all the *hidden processes* done my software does not limit

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for biological systems. For the author, there are quite different processes than make cornet evolution more diffused and with more horizontal transfer of information.

the power and advantages of using this kind of tools; *iv*) More information, or exactitude, given some assumptions, need more time, bites, and other resources. These are characteristics that do not depend on user abilities but on the nature of the artefact; *v*) A user can decide the program not to consider different weight to different character in order to do classifications. This constitutes a way to give an asymmetrical representation of relative importance to any single characteristic we take under analysis by means of a quantitative change; *vi*) It is confessed that method has some constitutive but non-preferred components. Those can be reduced to two words: arbitrariness and ignorance. And in fact, these two non-preferred components are related to the human part of the method; *vii*) The recognition of the existence of other methods is constantly shown to talk about the appropriateness of the own one (For Sandra case, maximum parsimony as she preferred method, against probabilistic and distance methods for doing phylogenetics).

Some other aspects I can sum up of this interaction have to do with my own perceived changes with respect with a “normal” interaction with Sandra. Things like: *i*) I thought I asked her things I could myself give a like-competent answer; *ii*) I constantly interrupted her in order to give “clarifications” that makes me feel that I am a good interpreter or, also, a good knower of topic on question. The interaction itself, thought pretended to be planned and neutral (that is, there is work to be something alike-a-friend to gain something like objectivity) was sensed as interrupted by some events not considered previously; *iii*) When hearing about a method, I get ideas for my method in the process of interviewing. Some of them look to be a “copy” from the other method; others look to be “inspired” by the interaction itself; *iv*) Writing about an interview implies a constant process of selecting, categorizing and thinking about relationships of this one with another aspects of research. There is also a preoccupation of not doing just a transcribing work, but also a brief modification in order to look analytic but loyal to the interview itself. That is, an “analysis” we can say, must be in a place located among “a pure description” and “pure abstraction”. Though Bruno Latour (2008) would say that a good description does not need an explanation, I would say that a good description always implies an explanation, if not, every Latour’s articles would consist in “a pure description”, a doubtful property for any research even if it is described in this way; *v*) Examples are demanded for me to

understand method. Examples are shown by Sandra to make intelligible her method. Examples are usually full of specific names and when used, always referred to intentions of other supposed actors non- present on our own place; *vi*) When constantly be aware of an interaction, in this case an interview, we also classified in the process of interacting: a barking dog as interview noise, Sara's questions as another way to exemplify classification, the computer on table as a resource. Some of these classifications are done *in situ*, on interaction. Others are done *ex situ* when hearing the conversation on recorded tape or by remembering the event. These taxonomy processes is assumed to be of great importance in order to order posterior analysis.

This has become the action of interviewing about a method, to understand a method about a method. In the process of paying attention, in the moment of talking, after hearing one more time the recording, and when writing and reading about it, I am aware I do not pay attention to some parts, I ignore them, I do not write them, and therefore cannot be read. But I am not sure about supressing the part in of the text when I write that I admit I have supressed many fragments of my interactions. My last confession before creating my own classification.

### **3.4. My Tree of News**

How did evolve crustaceans? How do relate to each other? What do make a crustacean *a crustacean*? Those are natural questions of biologists which have forced them to build natural histories to give them some kind of answer. As mentioned before, part of the devices use by biologists in order to handle their research purposes are by means of contrasting their specimens and creating cladograms, or tree-diagrams, in order to situate characters and taxa for explaining a series of events and postulate evolutionary relationships. This practices was enhanced when the evolutionary revolution occurred as part of the work of naturalists like Charles Robert Darwin, which only diagram in his famous book and best seller *On the Origin of Species by Means of Natural Selection* (1859) was a "tree" which Darwin thought was a good metaphor for describing the genealogical relationships among the living and death organisms in the history of life. As



a result of our own reflection about how to organize information in order to do analysis, and at the same time to describe some of the practices and methods biologists do after doing collecting work in order to analyse information, I have done a fragmentation in traits of my textual specimens (News) and, though many possible trees could be generated, one *tree* have to be chosen<sup>92</sup>. The “analysis” done by TNT generated the 26 most parsimonious trees and by means of them, it was generated a *consensus tree* as the resultant synthesis of these trees found by our new and dark friend<sup>93</sup> (Figure 3-6).

The trees generated were the resultant product of using TNT for producing a cladogram in which every terminal node symbolizes a *New* from 26 considered. The outgroup (the outNews), that is, the referenced and assumed different specimen is not a real *New* but a hypothetic one which have no single trait of those considered in the others. This tree is a way to organize our own narrative about what the News say about our topic of interest, that is, the construction by means of texts that build the impression of a problem for doing research in Colombia and the pointed direction and actions to take to change that state of the world. In my case, the resultant cladogram generated with my method prefigured future actions, but does not analytic work<sup>94</sup>.

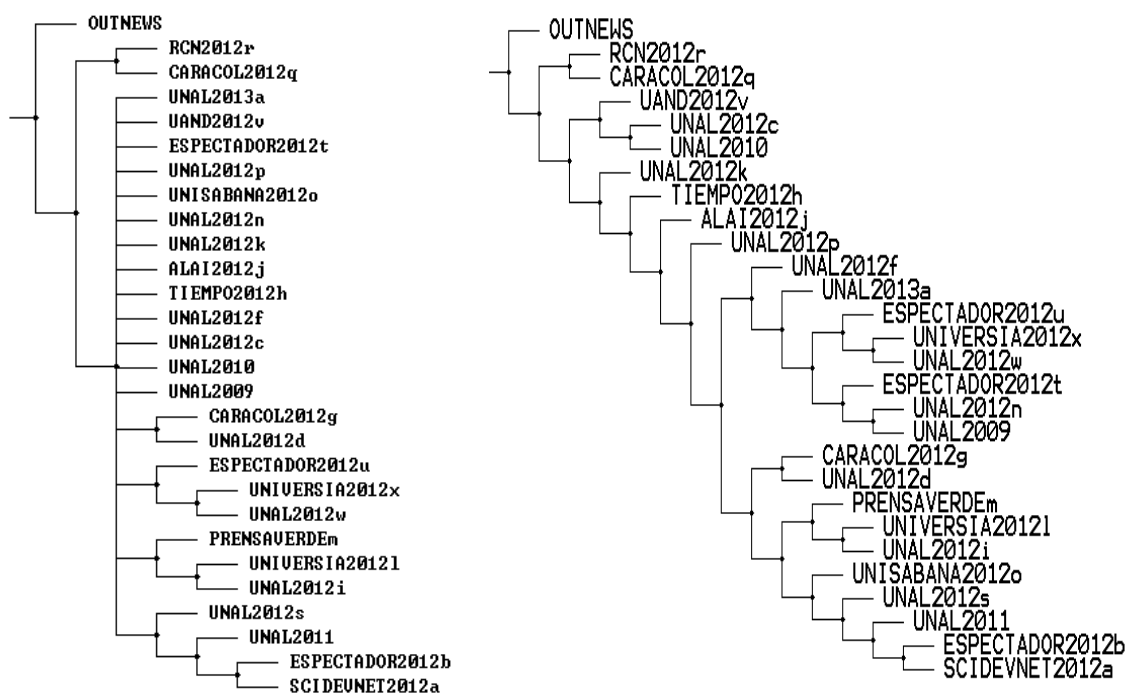
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<sup>92</sup> One has to choose for the practical reason of writing one chapter with enough time to deliver it to my director, to my juries so I can make a dissertation. In is in this sense that *one has to be chosen* must to be taken, because that author of this thesis really believe that are quite different and valid ways that can be taken in order to do an analysis.

<sup>93</sup> TNT is dark not because is a bad friend. It is dark because though I intended to understand it a little bit for using it here, the ways it acts remains obscure. In fact, this is a frequent critique of many detractors of using these methods because our lack of understanding of its functioning and “blind” processes it can made. Fortunately, no matters it is not quite understood, (What is it *really* understood?) the software and me –we will show it has have a role in this inform.

<sup>94</sup> Let us remember that the trees generated were done by considering only the traits present in two or more News. So, from the original matrix of size 26x263, it was eliminated the unique traits, that is the ones that are only present in one specimen but in any other (these specific traits will be used for the next section but are useless for creating the tree of News because only what is shared can allow us to construct a nested set of categories). The resultant matrix from subtracting unique traits has the size of 26x87.

**Figure 3-6:** Trees of News. **Left.** The consensus tree of News and; **Righth.** One of the 26 most parsimonious trees. The consensus tree is the result of combining all 26 most parsimonious trees which shown only the not-conflicting relationships given by any single tree (the common to all of them). These trees were building by using all defined traits (Simple + Complex traits). The parameters of software when doing its *analysis* remained untouched. Which to choose among many possibilities to start narrating? The other trees generated are shown on Annexes.

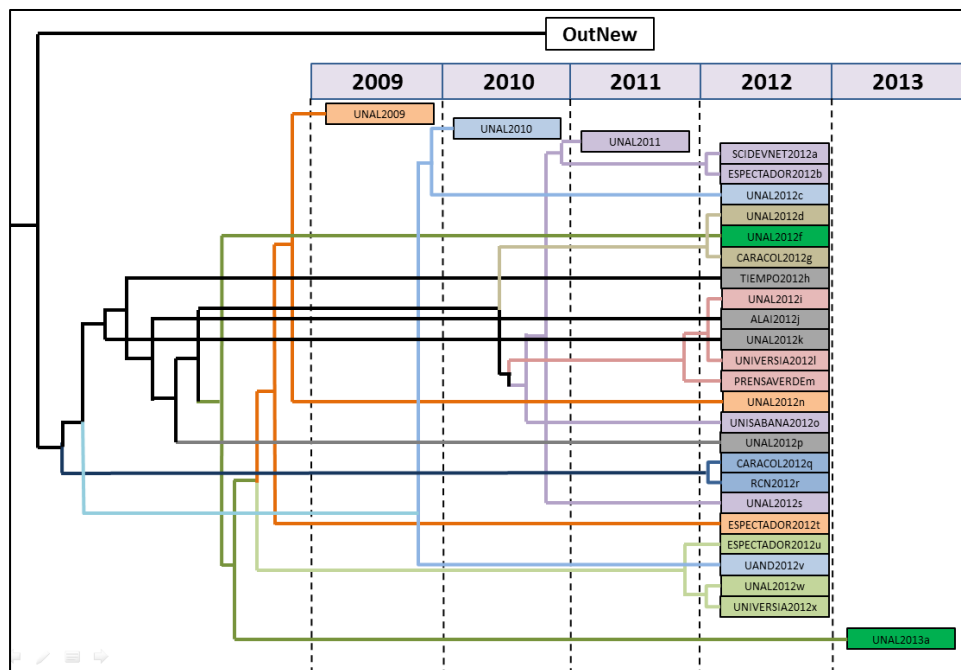


The first challenge in this moment is choosing one tree to start to structure our narrative. But as it was mentioned there were many different trees gathered by the way we already explained. One suggestive election is by choosing *the consensus tree* (Figure 3-6, left), that is, the one that shows only the groups presented in all 26 trees. But as it can be seen from figure above, the lack of nested aggrupation represents one problematic way in order to structure narrative. In fact these are problems that biologist found frequently when constructing trees. As one thing I wanted from this strange method for directing narrative was that it forced me to see details and think in comparisons among News, I decide to take one of the 26 trees generated instead of consensus tree. These trees show strict bifurcating patterns and we can use it as a map for talking about the different features that emerge in the nested groups. But, among these 26 options, which one to choose? What is the better option? All 26 representations shared one property: they are the most parsimonious. Remember that given any number of specimens there are exponential possible trees that

can be build. But as the programme look for those ones that shared common traits. It chooses among thousands the most parsimonious, that is the ones that need less assumptions for being build. So, any election among these selected group look initially quite arbitrary. My answer is, for a conventional rationalist, unsatisfactory because it will be not sustained by any given argument. *I just choose one of the 26*. Will my story be different if I would have taken another tree? Sure. In fact it would be quite different if on the entire process I would have read other News; if the traits chosen were composed by other members; it would be different if the order for creating the list of traits would be another; it would be different if I had chosen another software and another parameters; it would be different if I were not a biologist, etc. Is the fact that other structures could have been produced and therefore the final results an argument for invalidating my own one? It depends. If I considered that one, and only one, is the possible history – yes, with  $h$  – then I would be in a problem. But I am not interested to construct the real way, the real relationships among News. I am not interested in writing History. My interests are more associated with explaining why when reading a particular set of texts I feel that they talk about a problem for a scientific community, and what are the traits (institutions, scientists, arguments, places, etc) that are part of this particular set and that have specific distribution and relationship among them. It can be useful of a more historical approach? Perhaps.

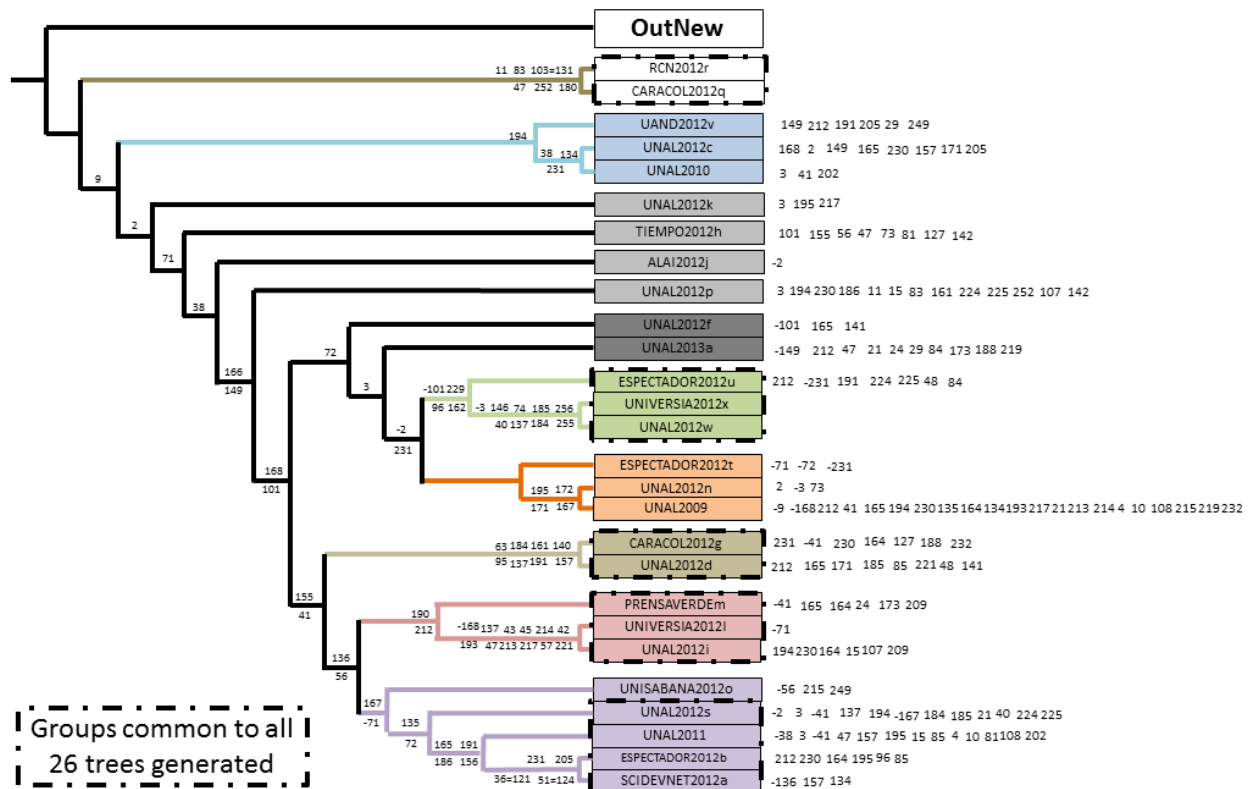
In fact, one thing, we can do is to take the representation as presented by TNT (Figure 3-6, rightB), and to generate another representation to emphasize another frequent element for structuring a narrative, that is, *time* (Figure 3-7).

**Figure 3-7:** Tree and Time. Here time can be considered another trait that, instead of using it to find similitudes among News, *time* can allow us to structure or narrative given it a particular direction. But remember that time, is only another trait, it does not define by itself if News A is more similar to News B. Though it is expected more similitude among “closer” News on time, the lines that relate different specimens figure suggest another thing.



From Figure 3-7 is evident one thing: though News written in similar temporal range could be thought as being more similar because they can reflect similar topics of the moment, as can be traced by looking the tree above, it is evident that that is not necessarily the expected pattern. Some News though published years after others can expose some traits with more similarity to others that we assumed, based on dates published on journals, are “closer” on time. Though my intention is not to give a linear narrative taken trait time as the organizer one (though it will be taken into account) my map for my non-linear narrative will be the figure 3-8 which construction was based on the distribution of 87 shared traits (Table 3-2).

**Figure 3-8:** Tree of News selected and decorated. This tree, one of the 26 generated, is the chosen one. The numbers that are present in the nodes of the diagram represent the traits that support a relationship. The numbers that are in front of every single specimen, in the right side, are traits present in this specimen but that are also present in another specimen or group not closely related given the diagram chosen. The numbers with a minus sign (-) mean that this specimen has not a trait that is widely present in the group it is nested. The colours indicate subgroups and those ones that are with a different border indicate those groups that were also present in all the 26 trees. The name of each square indicates the precedence of the New.



**Table 3-2:** Shared Traits considered for construction of my Tree of news. After making a codification and selective process the list of traits above were considered. These are referent of people (e.g. 84 - Juan Manuel Santos), institutions (e.g. 43 – INVEMAR), documents (136 - Decreto 309 de 2000), and also make reference to events/problems/situations/contrasts (e.g. 230 – Desarrollos positivos de la investigación biológica). These traits are present at least in two different News, but can be as widespread as 9 – Gonzalo Andrade a trait present in 24 of the specimens. Highlighted traits are repeated because they make reference to persons (e.g. 51 - Brigitte Baptiste) and to their quotes used by journalists (E.g. 124 - Brigitte Baptiste). These traits are designated on the tree of news and will guide our Natural-Social History in the next section.

Shared Traits present at least in two News	
2	- VIUN Vicerrectoría de la Universidad Nacional de Colombia
3	- ICN (Instituto de Ciencias Naturales)
4	- Instituto de Genética
9	- Gonzalo Andrade (Docente, asesor vicerrectoría)
10	- Gabriel Ricardo Nemogá (Docente)
11	- Estudiantes de biología
15	- Gary Stiles (Docente)

**Table 3-3: Shared Traits considered for construction of my Tree of news (Continuation).**

21 – PUJV
24 – UDEA
29 – UAND
36 - Elena Stashenko, directora del Centro Nacional de Investigaciones para la Agroindustrialización de Especies Vegetales Aromáticas Medicinales Tropicales
38 - MADS ( Ministerio del Medio Ambiente/ Vivienda y desarrollo territorial/Minambiente)
40 - ANLA (Agencia Nacional de Licencias Ambientales)
41 - IAVH (Instituto de Investigación de Recursos Biológicos Alexander von Humboldt)
42 - IDEAM (Instituto de Hidrología, Meteorología y Estudios Ambientales )
43 - INVEMAR (Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andreis")
45 - IIAP (Instituto de Investigaciones Ambientales del Pacífico)
47 - Corporaciones Autónomas Regionales
48 - Frank Pearl (Ministro)
51 - Brigitte Baptiste ( directora IAVH)
56 - MINS. Interior
57 - Dirección de Etnias, del MINT
63 - MINS. Transporte
71 - Gobierno/Estado/Nación
72 - COLCIENCIAS (Departamento Administrativo de Ciencia, Tecnología e Innovación)
73 - Congreso
74 - Cámara de representantes
81 - Defensoría del pueblo
83 - Policía/Inspección de Policía
84 - Juan Manuel Santos/Presidente de la República
85 - Sandra Bessudo ( Alta Consejera Presidencial para lo Ambiental)
95 – PNUD
96 - ACCEFYN (Academia Colombiana de Ciencias Exactas, Físicas y Naturales)
101 - Etnias (raizales, afros, indígenas)
103 - Edgar Nieto comandante de la Policía Santander
106 - Andrade CARÁCTER ELIMINADO POR REDUNDANCIA CON CARÁCTER 9
107 - Gary Stiles
108 - Gabriel Ricardo Nemogá
121 - Elena Stashenko, directora del Centro Nacional de Investigaciones para la Agroindustrialización de Especies Vegetales Aromáticas Medicinales Tropicales
124 - Brigitte Baptiste ( directora IAVH)
127 - Gabriel Muyuy, director del programa presidencial de Asuntos Indígenas
131 - Edgar Nieto comandante de la Polcia Santander
134 - Convenio de Diversidad Biológica (1992)
135 - Régimen Andino de Recursos Genéticos (Decisión 391 de 1996) O Acuerdo de Cartagena
136 - Decreto 309 de 2000
137 - Resolución 260 del 28 de diciembre de 2011
140 - Protocolo de Nagoya
141 - Ley Antitrámites
142 - Constitución 1991/Constitución colombiana
146 - Código de Recursos Naturales
149 - Burocracia (Muchos Tramites dispendiosos en dinero o en tiempo)
155 - Presencia de comunidades étnicas/Consulta previa
156 - Ignorancia sobre temas esotéricos y prácticas/ ignorancia
157 - Por cumplir la normatividad
161 - Incoherencia interna del gobierno con normativa
162 - Gobierno sordo
164 - Obstáculo al desarrollo del país
165 - Obstáculo a la investigación/ciencia
166 - Años y dinero gastados
167 - 96%/92%/95% en la ilegalidad
168 - 45(46) de 565 (560)proyectos con contratos solamente, con posibilidad de patentes
171 - Problemas para generar patentes
172 - Que investigadores extranjeros usen lo nuestro
173 - Se afecta la actividad docente y de formación
180 - Detenidos por Sacrificar sin permiso
184 - Pagar a nacionales y extranjeros por evaluación
185 - Cobro por seguimiento y evaluación de proyectos
186 - Casos de Sanciones
188 - Posibilidad de cárcel/sanciones
190 - Porcentajes de investigación
191 - Minería en mejor posición que investigación
193 - Otras entidades en mejor posición (gubernamentales, colegios)
194 - Otros países en mejor posición
195 - Destacable papel de la UNAL en investigación/colección (ORGULLO UN)
202 - Poca importancia a los temas ambientales

**Table 3-4:** Shared Traits considered for construction of my Tree of news (Continuation).

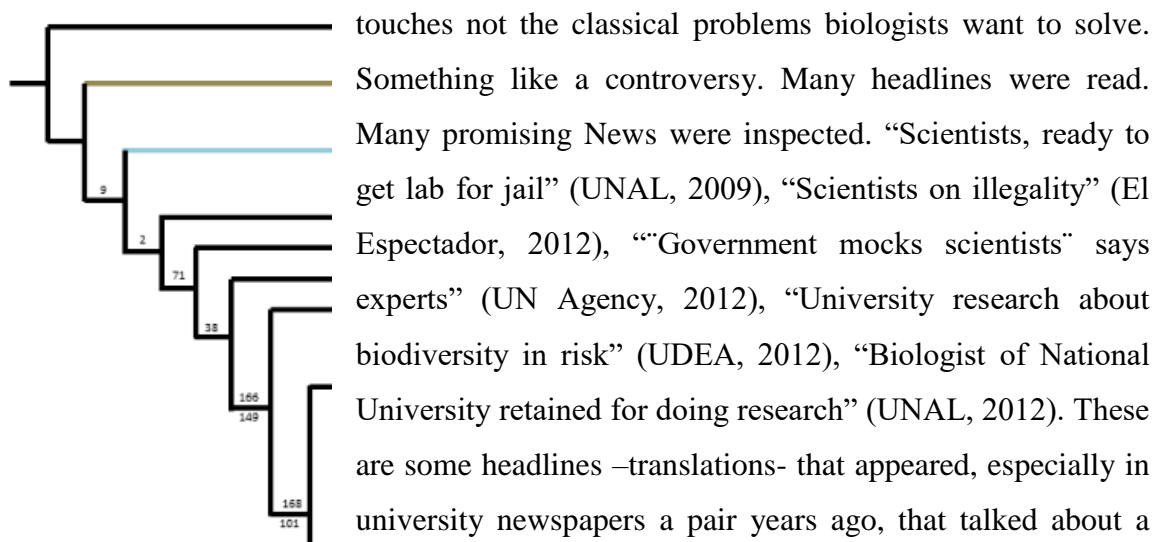
205 - País megadiverso pero con problemas
209 - Quien pierde es el país no el científico
212 - Propuesta desde la academia
213 - Agilizar trámites, disminuir costos, claridad
214 - Crear igualdad de oportunidades entre sectores
215 - Esfuerzos desde el MADS para disminuir tramitología
217 - Sistematización, agilidad por herramientas digitales/para toma de decisiones
219 - Permisos marco en lugar de individuales
221 - Eliminación de cobros por consulta previa
224 - No necesario pedir permiso de investigación
225 - No contrato de ARG en investigación
229 - Carta al presidente
230 - Desarrollos positivos de la investigación biológica
231 - País megadiverso
232 - Estudios de diversidad como fuentes de riqueza
249 - La consulta previa es importante
255 - Reforma inadecuada Código de Recursos Naturales
252 - PNN Yariguies / Zapotoca Santander
256 - Modificar reforma de código de recursos naturales

Biologists not only construct trees in order to show specimens with probable evolutionary relationships but once they have created trees they postulate some names –categories- in order to group some elements: Hominids, *Canis*, *Sauropsidae*, etc. These names are then arranged in a nested taxonomic classification and its election is topic of constant debate and constant change due to different hypothesis of relationship postulated by different researchers. My intention here is not create names based on taxonomic biological ranks but, as one purpose is organizing, these groups –on colour- are going to be tree references to talk about News. In fact, the traits that have been used to construct these categories defined subsections on this document as you will see on the next chapter. Other subdivision could have been chosen? Sure. For now, let us focus on what these Bad News have to say.

## 4. A Natural-Social History of a Problem



All starts with a reading. A young biologist read some newspapers, here and there. He wanted to find a case for research, something that involves his community but that it



touches not the classical problems biologists want to solve. Something like a controversy. Many headlines were read. Many promising News were inspected. “Scientists, ready to get lab for jail” (UNAL, 2009), “Scientists on illegality” (El Espectador, 2012), “Government mocks scientists” says experts” (UN Agency, 2012), “University research about biodiversity in risk” (UDEA, 2012), “Biologist of National University retained for doing research” (UNAL, 2012). These are some headlines –translations- that appeared, especially in university newspapers a pair years ago, that talked about a group of stories, told by biologists, journalists, lawyers, government officials, and many others, concerning to topics as diverse as access to genetic resources, mining, consultation with indigenous people, denounces for collecting biological specimens, international legislation, patents, and others, all apparently around a central topic: permissions for doing research.

While reading, rapidly another name of another biologist emerged: **Gonzalo Andrade** is professor of National University<sup>95</sup>. The young recognized the older from other interactions. He was known for being an expert on butterflies working at ICN. But then Gonzalo Andrade shows another membership. He was not only involved on academic

<sup>95</sup> Trait 9.



issues but also on administrative ones. Some News started to reveal that for a period of time he was working at **VIUN**<sup>96</sup>, a dependence whose function focus on promoting research activity of National University. The News was read, and the first generalization was made: there was a problem in which a community of scientist were asking the **government**<sup>97</sup>, especially, the **MADS**,<sup>98</sup> for a change in the regulation of a scientific practice for which they depend: collecting and accessing to genetic resources. Of course, the regulation of collection of biological specimens was a topic that shows to link many different topics. For scientists the current normative, in that moment Decree 209 of 2000, was forcing scientists to **waste time and even money for doing research**<sup>99</sup>. **The bureaucracy, the wasteful procedures**,<sup>100</sup> were real obstacles for Biological research. These obstacles were not only problematic for knowledge production but it was often related to the acquisition of patents which, of course, could promote industrial an economic development. The numbers were used to sustain the problematic situation: **only 45 (others say 46) of 565 (others say 560) projects that needed permission for accessing to genetic resources were granted**<sup>101</sup> in almost ten years. These projects often look to generate innovations for improving, for example, Potato productivity, and, therefore, have possible applications for agriculture, health, and even industry with the subsequent and hoped economic stimulus. In the reading it was clear that this just not involved scientists, people working on government, but also other actors look to have a role in this controversy: **minority ethnic groups**<sup>102</sup>. As will be develop later, these groups of actors and their demands will be marked as another obstacle for collecting biological specimens with research and potential commercial purposes.

In the next sections I will continue roving by my *Tree of News*. The traits will be obligatory crossing points, signatures on the way and reference for contrasting and doing analysis. The next sections are based on the groups on colour made on the tree of news and the traits will helps us to construct our narrative (Figure 14, chapter three) meanwhile we

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<sup>96</sup> Trait 2.

<sup>97</sup> Trait 71.

<sup>98</sup> Trait 38.

<sup>99</sup> Trait 166.

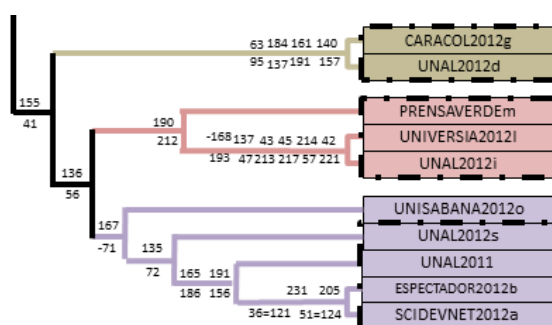
<sup>100</sup> Trait 149

<sup>101</sup> Trait 168.

<sup>102</sup> Trait 101.

start passing from one branch of the tree to the other, comparing, and highlighting the general features and associations that help to construct a problematic situation, in this case, for research development.

#### 4.1. *Problemata* (Purple + Pink + Brown)<sup>103</sup>



##### 4.1.1. *Ilegalidae* (Purple), Scientist on Illegality?<sup>104</sup>

Colombia is a megadiverse country<sup>105</sup> but with problems<sup>106</sup>. But its problems, at least as considered by some Colombian scientists, are not just because of the classical environmental problems biodiversity face as contamination, global warming, loss of habitat and the like. Biodiversity in Colombia is at risk because impairments to research.

Let us start talking about our two first specimens<sup>107</sup>. Two News that have a great similarity which can have a biological explanation. *SCIDEVNET, 2012a* and *EL ESPECTADOR, 2012b* have a common trait not considered but that was evident after classification: They

<sup>103</sup> As you will notice every single section of this Natural-Social History of a problematic situation will be named in this way: first, to reflect the colour of the branch (group of News clustered by similarity) of the Tree of News. Each group is one step for narrative and analysis and serve as a guide while we pass from one branch to the other. On the other hand, the name of the section makes reference to one of the trait that are present widely in the specimens of each branch but in any case summarize the principal topic of the question (because as you will read, many different colour groups have overlapping traits, so, overlapping topics and no strong thematic delimitation is considered to exist among them. The trait is put on the style taxonomist named orders and families, that is, taxonomic ranks of classification.

<sup>104</sup> Trait 167 - 96%/92%/95% en la ilegalidad

<sup>105</sup> Trait 231 - País megadiverso

<sup>106</sup> Trait 205 - País megadiverso pero con problemas

<sup>107</sup> And then, we can “travel” our tree “upwards” as our relations and traits guide us. It will be an expensive travel –especially for me, the writer- but that was our goal for looking for details that easy-categorization could have provoked us to omit.

have the same author. This trait is identified because it tends to lie below the headline, preceded by a “By”. His name is Pablo Correa, a journalist winner, with a pair of colleagues the National Award for Environmental Journalism in 2014<sup>108</sup> for doing environmental reports. The author, the assumed constructor, the writer and composer created two News which are quite similar in their sets of traits, order and style. Same proper names named, same problems, similar quotes. We can say that Correa has committed plagiarism of his own work by making a News and using another version, more complete, to publish in another journal. Of course we are not here for judging him but just for describing and comparing. The characteristics between our first two specimens showed the following characteristics.

**Table 4-1:** Some characteristics of our two “brothers” News with the same father (Author).

<b>Headline</b>	<i>Científicos en la ilegalidad por culpa de la burocracia</i>	<i>Científicos en la ilegalidad</i>
<b>Newspaper</b>	SciDevNet	El Espectador
<b>Author</b>	Pablo Correa	
<b>Publication Date (trait of time)</b>	02/01/2012	04/01/2012
<b>Traits present (elements of a problem)</b>	Obstacle to research/science <sup>109</sup> Ethnic communities and consultation <sup>110</sup> Mining in better position than research <sup>111</sup> Ignorance about esoteric topics and practices <sup>112</sup>	
<b>Ironic expressions by journalist</b>	Very low	Very high
<b>People quoted</b>	Gonzalo Andrade Elena Stashenko Brigitte Baptiste	
<b>Extension of quotations</b>	Shorter	Longer

The journalist by mean of his text has the mission to explain a situation which we are going to call “a problem”. For doing this, in both texts (which are like twins), he uses the following strategies. First, he starts by signalling explicitly the causative of the problem: bureaucracy. This is done in headlines and subtitle. The problems: Scientists on illegality.

<sup>108</sup> Want to know more? Visit: <http://www.elespectador.com/vivir/el-espectador-gana-premio-nacional-de-periodismo-ambien-articulo-513262>

<sup>109</sup> Trait 165 - Obstáculo a la investigación/ciencia

<sup>110</sup> Trait 155 - Presencia de comunidades étnicas/Consulta previa

<sup>111</sup> Trait 191 - Minería en mejor posición que investigación

<sup>112</sup> Trait 156 - Ignorancia sobre temas esotéricos y prácticas/ ignorancia

In one text, it is said 92% of them are out of law. In the other, more than 90%. No problematic comparison, but problematic situations for scientists because being on illegality is not a preferred place to habit. The possible consequences: jail, pay money, social discredit. What is quite interesting is that the journalist in the News in any moment try to discredit scientists. The opposite is true: scientists are victims, though majority of them are on illegality. The victimization of scientists is gained by means of using the following traits, ordered one after another in the texts, moving to crescendos that make to emerge a problematic situation.

At a first instance the numbers. 46 of 565 projects have to complete the legal requirements asked for doing the proper procedures (following a research done by VIUN in 2011). More than 90% or 92% or 9something%<sup>113</sup> of scientists are on illegality because they do not have the permissions asked for law for doing research on biodiversity. The time is 3,5 years that longs to complete all the bureaucratic steps before getting the final permission for research. If the project is done in places where habit ethnic communities, researchers have to do consultation with them and this can cost US\$7.000 on average. This numbers, which can be traduced as “waste of money, time and people in a bad condition” are contrasted with one number which talks about being proud: Colombia has then 10<sup>th</sup> percent of the entire biodiversity on the planet. Numbers v. numbers. 10% of biodiversity, as journalist suggests, implies development. “Waste on money, time and people in a bad condition” is all contrary to development. By contrasting these numbers the writer accomplished the work of counterpose “development” v. “bureaucracy”. And, at the same to make an alignment: on the one side, there is the government, which, though it wants to enforce normativity, as “the Convention on Diversity Biological United Nations , the Common Regime on Access to Genetic Resources Andean Area, and the various national decrees” (SCIDEVNET, 2012a), the state, the nation, *they*, are in the side of the controversy that is forcing scientific community to an uncomfortable situation. On the other side, of course, scientists themselves, especially those who constantly collect biological specimen for diverse research topics and those that aspire to get genetic

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<sup>113</sup> Trait 167 - 96%/92%/95% en la ilegalidad

information for possible innovations on health, agriculture, bioengineering, etc. To point out that 9x% of scientists are on illegality is a bad fact but is also a useful number for the purpose of making an interesting and visible problem because it gives the reader the impression that the problematic situation is not an isolated case. 9x% is majority and majority talks about a big problem and further possible support in the process of alignment.

*“Los datos de este análisis demuestran que básicamente el sistema no está funcionando”. Gonzalo Andrade (EL ESPECTADOR, 2012b)*

Data talk about something is not working. The whole system. Data are frequently assumed as facts, irremovable things without political position. The data is evidence of a problem and a signature of its causes. That is, all the processes scientists have to cross for achieving their goal of doing research.

Second, the writer makes a call that is easy responded by the emergence of other names armed with quotes. Gonzalo Andrade, as I said previously, a UNAL professor; Brigitte Baptiste of IAVH; Elena Stashenko, a researcher from Rusia but now working at UIS with plants. These people are always linked to memberships: academic institutions and their roles in them, their previous studies are sometimes mentioned, and their expertise. They are also victims that shared in the textual arena, their own specific experiences and opinions about what they consider problematic. Their quotes are summing on a list that represents not only the part of the problems but trying to exemplify the path a researcher has to travel. This travel involves ethnic groups and the Ministry of Interior. The later ask scientists if the places they collect are places with presence of the former. If that is the case “the nightmare,” as in a novel of Franz Kafka as compared by the journalist,<sup>114</sup> starts by consultation to communities. For scientists, and for the journalist, this is not commented as a civil obligation or a right of indigenous and afro communities. No. This is put as an obstacle. More money and time wasted in a country where doing research has not the desired economic support. The first stone on the wall of problems is consultation.

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<sup>114</sup> (EL ESPECTADOR, 2012b)

The second set of stones on the path for doing research are constituted by documents. Decrees and conventions.

“Estamos bloqueados por culpa de una norma que hace 10 años era bien intencionada, pero ha resultado perversa” Brigitte Baptiste<sup>115</sup> (SCIDEVNET, 2012a) (EL ESPECTADOR, 2012b)

This text is Decree 209 of 2000 published by MADS in the period of presidency of Andres Pastrana Arango and, as head of ministry, the photographer and environmentalist Juan Mayr Maldonado. The document that regulated scientific research on biological diversity<sup>116</sup> until it changed in 2013 when other Decrees 1375 and 1376 were published. This document is going to be in many of the News revisited and put it as one text whose composition must change. A document whose possible and necessary change will facilitate research in Colombia. But, in the moment this decree forced, by invisible hands, scientists to ask for permission to MADS for collecting material and getting access to genetic resources with non-commercial purposes. Besides that, Decision 391 of 1996 (Cartagena Agreement) forced signatory countries to force their scientists to make a contract in the case their investigations involved access to genetic material. If this was the case, another process has to be done. More money and more time.

One frequently trait that will appear in convergent ways in different textual specimens are those that involved that there is a *lack of understanding* or that other agencies are *ignorant* about the practices as are performed by scientists. Two quotes of professor Elena Stashenko are put on that way.

“Cuando enviamos las plantas recolectadas para su identificación al laboratorio, resultan diferentes a las que esperábamos. Cuando reportamos esto al Ministerio, el abogado dice que no teníamos permiso. La investigación es ir a lo desconocido. Hay una contradicción lógica en esto” Elena Stashenko<sup>117</sup> (SCIDEVNET, 2012a)

“Antes de investigar ya debes saber lo que vas a encontrar y debes reportarlo. Si no lo haces te expones a sanciones y amenazas. No es un clima propicio para investigar. Siempre te sientes criminal”. (EL ESPECTADOR, 2012b)

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<sup>115</sup> Trait 51,124 - Brigitte Baptiste (directora IAVH)

<sup>116</sup> Decreto 309 de 2000 by Ministerio de Medio Ambiente (which actual name is Ministerio de Ambiente y Desarrollo Sostenible).

<sup>117</sup> Trait 36, 121 - Elena Stashenko, directora del Centro Nacional de Investigaciones para la Agroindustrialización de Especies Vegetales Aromáticas Medicinales Tropicales CITA.

The argument here can be translated as followed: biologists identify species. When they go to field they can find two kinds of things depending on their knowledge: Organisms they can classified in already known categories, or organisms that they have no idea what label to use for them (what constitute a Good News for scientists), so, they have to see if it is something new or something unknown for research region. If it is an unknown specie lucky for them because that will mean a scientific article for sure but, and here comes the problematic situation, is that if they collect something they did not known was there, how that %\$& were they going to report a regulatory entity that they were going to collect it? The unknown, is something that is out of any planned action. So, professor Stashenko accuses normative of being incongruent. “There is a logic contradiction in this.” In that sense, the normative of reporting what they are going to collect seems out on any context of the development of the practice of biology on the real world.

More “stones” for making the problematic wall even higher? Sure. And here comes one stone that will connect markedly our twins News (SCIDEVNET, 2012a; ELESPECTADOR, 2012B) with its closest relative: UNAL, 2011.

In commented News Andrade’s same quote appeared: “*Es más fácil obtener un título minero en Colombia que desarrollar proyectos de investigación en biodiversidad*”. With this emerges another usual strategy with the objective of victimizing our scientific practice and our community. It is by contrasting with others activities, with a privileged situation, that one can minimize the relative importance that government or others sectors give to science ones. By minimizing science with contrasts, it is maximized the problem. In the quote two activities are contrasted. Mining v. Researching. The first one easier to promote in a political context where mining is easily linked to economic progress while researching as something like an activity of pure luxury. In fact, easiness in mining has been a hot topic in last years, especially in environmental controversies.

For the specific topic of doing comparison with mining. UNAL, 2011 is quite illustrative. In fact, the headline is an explicit *versus*. *Explotación minera contra investigación científica*. Here the contrast is performed in different ways.

**Table 4-2:** Mining v. Research.

	<b>Mining</b>	<b>Researching</b>
<b>Costs</b>	NO DATA	200 million pesos, or more, for a research project
<b>Time for approbation</b>	3 months	Almost 5 years
<b>Scientific licenses approved v. mining contracts</b>	7800 (in 8 years)	46 (in 15 years)

The journalist, in *UNAL, 2011*, Carlos Fernando Álvarez, belonging to *Unimedios*, the media of National University of Colombia, aligns himself on the side of scientists (a pattern almost invariable for the rest of News on this chapter). In fact, many of these scientists also belong to the same *alma mater* where he works. The contrasts, one more time have the goal to reflect that “Colombia is a contradictory land”. After comparison among these activities, for journalist, it is absurd to pretend that here we support more one activity that help to destroy biodiversity than the activity that helps us to know that biodiversity. Another contradiction exposed.

In this case, it is not only done the comparison which shows science as the loser against mining. Another strategy is done by pointing out that mining has negative effects on environment. For doing this the journalist accomplishes it by narrating some remarkable cases, as when mentioning the terrible effect of this activity in Río Dagua, in Valle del Cauca. So, the government, as the regulator of these activities, is found to be guilty of not only allowing but promoting a bad activity and, besides that, to put obstacles for doing research in the country. And this asymmetric treatment looks to increase with time when different governments have come and gone: since Cesar Gaviria, passing through Ernesto Samper, Andres Pastrana, mentioning the great Colombian and arriving to Juan Manuel Santos and his locomotive of development driven by non-renewable resources of our geological strata. Year after year looks to be easier to do mining than researching biodiversity. In fact, as one movement the writer of the text does, is to suggest –against bad experiences narrated by scientists- that they would better dedicate their lives to



mining activity<sup>118</sup>. The rational decision, the ironic commentary, that make the contrast even bigger, and the problem under question as an absurd.

**Figure 4-1:** The heaviest. What weights more for the government (after reading this specimen)? Mining or Scientific Research?



The journalist is an allied. The Journal is a Political Newspaper. The News, in any case, bring the voice of the others and this specific text is full of voices of people of the same party: Gloria Galeano, Gonzalo Andrade, Gabriel Ricardo Nemogá, Germán Corredor. All of them, belonging to different dependences of UNAL: Department of genetics, National Institute of Sciences, Vice-rectory of Research. The mining sector without a voice. Only information about how this sector has increased his network and how illegality around it also has contributed to a chaotic state on the sector and environmental problems. The sector instead of bringing development on the rail, it is stayed as carrying problems on its wagons and threatening science on the road.

Besides this comparison among sectors, UNAL, 2011, also focus on the stones on the wall that stop research that we have already mentioned on the other News: time and money waste; consultation; access to genetic contracts, bureaucracy here and there. But two more interesting elements we can add:

*... la bióloga afrontará un proceso engorroso, ilógico, sujeto a la interpretación de abogados que no son pares de los científicos, y hasta con implicaciones judiciales. Es una absurda burocracia que frena el impulso y el desarrollo de investigaciones científicas y genéticas en Colombia (UNAL, 2011).*

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<sup>118</sup> To this comment we have to add that there are many people belonging to the category “scientists” that work in enterprises dedicated and related to mining. The most important example are geologists, which in fact, are said to be among the best paid and more asked in the last years in Colombia. Look at: <http://noticias.universia.net.co/educacion/noticia/2015/12/17/1134832/20-carreras-universitarias-mayor-demanda-mejor-pagadas-colombia.html>

The textual fragment above adds the hint that we can call: *do not trust who is not your pair*. As you know, scientific community has some process of validation of their knowledge that implies that their findings, ideas, concepts and theories are going to be judged by competent people on the issues on the table, and this mechanism is quite common as a way for approving textual documents to be published in the academic journals. The jury needs to be expert. If not, the process would be considered invalid and therefore, illegitimate. In that sense, scientists are always really worry about who is the people, which groups they belong, which are their academic status, all this for getting more confidence about their opinions and, at least, hear them. Here, what the journalist - the ally- says, is that scientists have to tolerate that their practices and ways they put in march when doing research processes have to be regulated, constraint, obstacle by people like lawyers and politicians, most of them, without the required scientific status. And they are experts, of course, but for journalists, as for many people, their expertise is not the desired one in the context of the situation. This point is of remarkable importance, because as you will read later (I hope), expertise will be one of the main arguments in order to construct a wider forum for scientists participation in rule-making and regulating processes.

Scientists do not trust lawyers too much. But, if other agencies do not trust scientists that cannot be accepted it.

*La quinta dificultad es la solicitud de una Institución Nacional de Apoyo, que respalde y certifique la labor del grupo investigador. “De entrada nos tratan de mentirosos, no creen que estamos haciendo ciencia y necesitamos acudiente ¡que más respaldo que la universidad que nos acompaña! (UNAL, 2011).*

This difficulty, among the others that we have mentioned that have been mentioned by our textual specimens, is one way of putting words on the mouth of the other by exaggerating what nobody really has said. “...they treat us as like liars” Who? Well ¡They! Government? Lay people? Lawyers? Sure all of them. It is an exaggeration because it is required that projects, as normative demand, must pass for a verification process. One thing that any regulator is expected -and in fact- demanded to do. But, as Andrade insinuates, it looks like in the case of academics, the academy itself, should be enough

credential, evaluator, and regulator, so, another “acudiente” not only look to be unnecessary but its imposition is offensive ;Trust scientists friends!

To top, scientists, no matter their efforts for getting contact with the entities of government to solve the situation, they always look to be rejected, and the victimization of the community goes on. So Government looks to be ignorant and negligent because it does not want to “hear.” Nobody hear us. We are invisible.

*“Ni me pasan al teléfono” Gonzalo Andrade (UNAL, 2011).*

One thing for sure. In all the branches of my Tree of News Gonzalo Andrade has a big part of the quotations. He will become a constant trait here and there<sup>119</sup>. His role starts to be relevant. He is an accuser of the situation. He is well uniformed for that homework: he is scientist (entomologist)<sup>120</sup>; he has seen the stones that stopped research by his own experience; and he has an administrative position – adviser at VIUN- on one of the universities with more prestige in Latin-America. Andrade is a widespread trait in our textual specimens and that was evident from the moment of collecting.

But let us continue our trip on our tree, which has becoming a real map for crossing from one specimen to other. Now, the turn of UNAL, 2012s.

With the previous specimens UNAL, 2012s have two traits in common. It is mentioned the Decision 391 of 1996 or Andean Regime of Genetic Resources (Cartagena Agreement)<sup>121</sup> which compromises our country to treat the topic of access of genetic information with certain rules in accordance with all the agreed by other countries. Besides Decree 309 of 2000 by which it was ruled scientific research on biological diversity and therefore, it was regulated the practices of collection with scientific purposes and biological collections, Decision 391 is also put as a bad text for scientific practices as will

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<sup>119</sup> Of course, that is fault also of the writer of *this* specimen besides fault of other actors as journalists. And in fact, it is also Gonzalo Andrade’s fault because the easiness which in his old position as adviser or Vice-rectory can have in News construction and journalists’ recruitment.

<sup>120</sup> The person that study bugs, like butterflies (Andrade’s specialty).

<sup>121</sup> Trait 135 - Régimen Andino de Recursos Genéticos (Decisión 391 de 1996) O Acuerdo de Cartagena

be discuss later. On the other hand, one important trait is also recurrent on this specific branch of our Tree. To these legal documents UNAL, 2012s also has a trait not mentioned before: Resolution 0260 of 2011 issued by National Agency of Environmental Licenses (ANLA)<sup>122</sup>, a dependence of MADS. Following Andrade this resolution would worsen the situation for scientists because it generated more costs: for the permission for collecting; for importing or exporting biological material among countries; for evaluation and tracing of permissions and even *per diem*, of evaluators. Adding this to the “stones” that constitute now an apparent big and consistent wall of problems that inhibit the proper development of science via *collecting* if there would be less *regulating*.

Colciencias, the Administrative Department of Science, Technology and Innovation<sup>123</sup>, is the governmental entity with the homework of promoting and manage science, including biology, development. In the previous specimen, Colciencias is mentioned as a place where you can get information about the groups and the interests of research, the kind of projects they have, etc. This place was the source of information for signing that there were many research projects that need contracts for getting accesses to genetic resources: 565 in total but few of them, 46, have been approved (UNAL, 2011). In this specimen, it is also mention one research made by Gabriel Nemogá (an expert in law and normative about biodiversity and genetics, professor of UNAL), and his team which bring to the scenario some of the numbers, the facts, the data, that will be used frequently to sustain that something is wrong with the regulation processes of Science in Colombia<sup>124</sup>. Of course, few numbers of projects approved means more problems for Science and Development.

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<sup>122</sup> *Resolución 0260 de 2011* by which tariffs for collection services evaluation and monitoring of licenses, permissions, authorizations and other instruments of control are set. In article four, it is sentenced that studies with research purposes on biological diversity are one of the activities that need permission, and therefore, one tariff must be applied.

<sup>123</sup> Trait 72 - COLCIENCIAS (Departamento Administrativo de Ciencia, Tecnología e Innovación)

<sup>124</sup> This information would be published in *Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la Decisión Andina 391 de 1996*. Clearly, the international decision will be challenged considering it quite restrictive for our national reality.

UNAL, 2012s shows one light among the darkness: some possible agreements that even talked about the possibility that, for research cases, and given some specifications, the process of consultation would not be require initially. On the other hand, it is shown that the best option for academy is that they would not have to ask for permission in cases where there is not a commercial interest or output. That is, when science is done by science itself. If other interests appeared, then would be valid to cross an expensive, in time and money, road process in order to get a contract for using genetic resources. So, it look quite important for regulators and scientists to distinct among the different purposes they have when they collect or extract DNA. If the purpose is commercial, look to be legitimate for scientists that there must be a strong regulatory process, but if the purpose is research for obtaining conventional biological knowledge, then, the process should be less complicated or it must even be erased at all. This specimen, for that moment, gave hope for a change in the required direction (when there is a research purpose involved). But, as will be shown, other problematic situations emerged that make that hope about a change have to wait at least for one year more for being a reality<sup>125</sup>.

One thing to note: the writer of this specimen was one of the traits and an invited one in others. *Gonzalo Andrade*, here, performed not as the expert called by the journalist. No. He is the journalist. He uses the media the university put in his hands, and shows to handle it perfectly, which, at the same time, centralizes researcher and reader attention to him: the scientist, the accuser, the journalist. Another role for him? The time will say ;Yes!

Many universities tend to create their own media of communication by means of virtual channels, newspapers, bulletins and, of increasing importance lately, social networks. You have already been familiar with some News whose provenance is UNAL, and, as I suggested previously, this can be seen as a platform for UNAL community to visible their achievements, problems, opinions, stories, histories, the hand of the experts, supported by rigorous studies, pointing out the way to follow for surpassing any obstacle.

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<sup>125</sup> Reality here will constitute the creation of a text associated to promote different regulatory normative, that is, reality means the creation of a new Law or a decree on the side of Science.

Sabana University has its own media<sup>126</sup>. Like *En Directo*, a virtual Newspaper for capturing and sharing about many different topics. In May of 2012 it is published an article titled “Environmental research, in illegality” (UNISABANA, 2012o) written by the young journalist Yuly Stefany Valbuena. The item, the same we have been analysing: problems for research, scientists –more than 90%- doing a practice of collecting and researching on biodiversity within a framework of illegality. Why? Well it is a matter of cost-and-benefit. If they do what the decree tell them they do, they will waste more money and time of what they would like. The option? Omit it. The consequence: being catalogue on an unpleasant affiliation. ¡you are doing something illegal! You are a criminal. But this state is because of a Decree bad designed.

“*El decreto solo ha estado entorpeciendo la investigación con fines científicos*”. Gonzalo Andrade (UNISABANA, 2012o)

They are forced by Decree 309 of 2000. They are forced by a text. How do *texts* forced people to do things? (And this is not an ironical question). A partial answer would be: by means of promoting the production of other texts that can link scientists with a situation like being on illegality (texts like a *legal ruling* sentencing that someone has done something it is not supposed to be done). But, someone would say “Hey, it is not a text by itself what is problematic, it is the interpretation and uses to support actions what really matters”. For me, what really matters is everything that looks to have a role and these texts are of considered interest for people like scientists but also lawyers and politicians. Texts like these decrees are of interests of many communities: one, the target population of the document, and two, the agents responsible of translating with other actions what the documents say they have to, given a particular situation of normality or of breach of normativity. Decrees and resolutions promote future actions; some of them could be unpleasant if texts contents are not aligned with the interests of the target population.

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<sup>126</sup> Like <https://issuu.com/unisabanaradiotv/docs/mayo21>

Interestingly, though many of News, videos and radio programme under study will mention and categorize Decree 309 of 2000 as a “bad decree”, as something that was incondite, UNISABANA, 2012o -a non-UNAL specimen, worth the emphasis- point out whose were the people involved in the construction of this decree.

*El decreto fue creado con la ayuda de Andrade y Cristian Samper, ex director del Instituto de Investigación Alexander von Humboldt. Sin embargo, el funcionario de la Universidad asegura que las resoluciones que se firmaron luego de que la ley entrara en vigencia han distorsionado los artículos originales. (UNISABANA, 2012o).*

Quite surprising when you have just read UNAL News. Gonzalo Andrade, our main accuser, was involved in the process of constructing what he later wants to change. With him, a person like Cristian Samper, one of the most known scientists of Colombia in recent times (¡he appears in Wikipedia!<sup>127</sup>), but not for his scientific activity but for his management skills and administrative roles, working in principal positions at Smithsonian Institution, the Wildlife Conservation Society, and here in Colombia, he was director of Alexander von Humboldt Biological Resources Research Institute (IAVH)<sup>128</sup>. An important figure for Science in Colombia, a country that needs -besides *Darwins*-, also people Steve-Jobs-like. Both, Andrade and Samper are scientists. They are also engaged with administrative and regulatory processes. If they were involved in construction of Decree 309 of 2000, why then so many scientists, even Andrade in an active way, believed that this had to change? Part of the answer of this will be revealed later (Chapter 7). But, Andrade, in our textual specimen on analysis, opts for reallocating the problem, to other texts.

*“Si usted lee el decreto sigue siendo un texto bastante sano. Los problemas empezaron cuando el Ministerio de Ambiente comenzó a reglamentarlo”, afirmó Andrade (UNISABANA, 2012o).*

Another surprising movement: Decree 309 of 2000 was never sign as a “fairly healthy text” in other News but as his involvement in his construction was evident in this News, he moves the problematic situation to another place, that is, in other hands, the ones of MADS. For him, the resolutions published after Decree in question “distorted” the original

<sup>127</sup> Look at him!! ([https://en.wikipedia.org/wiki/Cristi%C3%A1n\\_Samper](https://en.wikipedia.org/wiki/Cristi%C3%A1n_Samper))

<sup>128</sup> Trait 41 - IAVH (Instituto de Investigación de Recursos Biológicos Alexander von Humboldt)

articles<sup>129</sup>. For him, a “good Decree” (even if he expressed of it with bad connotation in different media) surrounded of “bad resolutions” (like Resolution 0260 of 2011) can be influenced, “distorted”, even though its textual composition remains the same.

The problematic situations (or stones of the growing-and-obstructive wall for Science) you are already familiar with from News mentioned are also mentioned by Andrade in this specimen but by other people from different institutions like José Manuel Martínez, administrative assistant in charge of studying matters of normativity and Rodrigo Moreno, from IAVH, of the program of policies and legislation, mentioning one more time the problem about consultation, access to genetic resources, and bureaucratic procedures expensive on time and money. Besides those already familiar problematic situations for you, the textual specimen adds two more for us: the first one can look trivial but can be infuriating for people in the process of asking permission and concerns with the practical and necessary action of *fill out forms*. We already know from laboratory studies – let’s think in the classical study of Bruno Latour<sup>130</sup> - that one of the main scientist’s purposes is the production of papers. But the *forms* with information about its practice for regulatory purposes are not attractive texts to produce. In fact, we could suspect that the desired situation is that *filling-out-forms* will be inversely proportional to *production-of-academic-papers*. Unfortunately, for scientists, filling-out-forms look to be a demanded and constant activity in modern nations which are interested in measuring scientific and technologic activities; in controlling the budget directed to scientific projects; and in comparing results among private and public initiatives. The second remarkable problematic situation exposed by UNISABANA, 2012o is one that make reference to the specificity of information ask in those forms that scientists have to fill. For example, information about the specific geographic coordinates where they are going to collect. We can think this is something easy to do, but for collectors, this practice can depend on the unpredictable actions of other living things. You know, they are not going to schedule appointments with their collectors

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<sup>129</sup> Another resolution was the 1115 of 2000, through which the procedure is determined for recording biological collections for scientific research (*Resolución 1115 de 2000, Ministerio de Medio Ambiente*). With this resolution the entities with biological specimens had a range of time to registered its collection in the face of IAVH, even for the specimens they could not prove its origin and without permission of collecting. Another “nightmare” for scientific collectors?

<sup>130</sup> Laboratory life: the construction of scientific facts (Latour & Woolgar, 1979).



with a precision that only a GPS can have. Because of this, non-human actors' unpredictable behaviours are taken as one of the reasons some information asked for regulators is simply impossible to give.

UNISABANA, 2012o is also a remarkable specimen because it has a trait quite strange in other specimens of our textual collection. That is, those that do not construct consultation as a problem but as important for our country. These voices come from Xiomara Sanclemente, Director of Forests, Biodiversity and Ecosystem Services in of MADS which states that “consultation is not just a mere formality but a fundamental right of ethnic communities”. Though many persons, like Rodrigo Moreno and Andrade would agree easily with this affirmation, they do think that scientific intentions cannot considered of potential danger and great impact to communities as could be a mining process. In that sense, scientific activity is postulated as innocuous one, that, if compared with other ones, its possible negative effect to ecosystems and communities can be consider equal to zero. If there is zero effect then, why to subjugate scientists and forcing them to this terrible paths no one want to cross? Well, considering another voice, Ksokaku Busintana, lawyer and *Arhuaco* leader, consultation is not about law –a text- but respect. Ethnic communities can support scientific projects, and quickly, but “serious projects”, scientific or not, have to do the process for asking permission to communities. The land is sacred and the rights are clear, likes or does not like to scientists.

Finally, our last specimen of this *purple group* shows us another situation: MADS is working and hearing purposes. They are constructing spaces for discussion. And in fact, for that moment, it was another alternative for regulation in construction. Some clues that will give us more elements to see how the change was done, will be delivered by some other News, and the process by the voice of some of their constructors will be the material of another chapter.

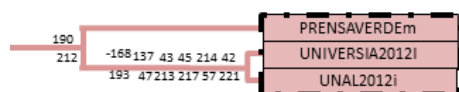
Now let us following moving in our Tree of News. It is time for the *sister pink branch* which traits that group them were the relevant role on the Decree 309 of 2000<sup>131</sup>

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<sup>131</sup> Trait 136 - Decreto 309 de 2000

and the presence of Ministry of Internal Affairs<sup>132</sup>. The already mentioned decree and the ministry in charge of the process of consultation. Keep jumping from branch to branch.

#### 4.1.2. *Proposionidae* (Pink)



Of all the specimens considered in this section, two of them, if considered the shared traits, are the two more similar. UNIVERSIA, 2012i and UNAL, 2012i. These news shared similar elements with PRENSAVERDEm like: universities as places that produce huge quantities of projects of research compared with other national entities, therefore, their importance as habitats of generation of knowledge;<sup>133</sup> academia has made its own proposals in order to surpass all this problematic situation<sup>134</sup>, that is, scientific community has not the only role of indicating what are the obstacles to government and other audiences but, in this controversy, they will indicate that their active enrolment in regulatory processes is a key part of the solution.

*Prensaverde* is a News constructed by Antioquia University (UDEA), one of the most famous and academic recognized universities of Colombia. Its habitat is in Medellin. However, this textual specimen, in its constitution, reveals information that we can trace with Bogotá precedence. The information source look to be other News published by UNAL and some of the quotations are from people of UNAL precedence like Gonzalo Andrade. In its first part it summarize the situation in quite similar way as the other UNAL News we have been considered: the problem of the costs, the problem of the consultation, the problem of the time for lengthy paperwork. Two difference to notice: first, it is said that, in the moment of the controversy, there is a construction for a change of Decree 309 of 2000 but this new proposal from MADS is treated as if nothing would be really changed considering the already mentioned problems. In fact, it is said that the project of MADS

<sup>132</sup> Trait 56 - MINS. Interior

<sup>133</sup> Trait 190 - Porcentajes de investigación

<sup>134</sup> Trait 212 - Propuesta desde la academia

could even get worst the situation for researcher and for students whose thesis project could also be affected. The other differential element of Prensaverde is the connection of the problematic situation with own UDEA affairs. Following, Jairo Humberto Restrepo Zea, vice-rector of Research of this *paisa* university, the reforms on Decree 309 is an obstacle for the achievement of the missional goal of the *alma mater*. This is an interesting form to increase the problem and to align members of a community. The universities can have many activities in their own institutions. Only one part of them could involve the practice of collecting specimens or getting access to genetic resources but, in order to construct these normative changes as something “really problematic” the tactic here involves to compromise the own *telos*, the final objective, of the entire university with this normative changes on the regulation of a scientific practice. Not only is impeded the research in biological diversity but the university itself. Of course, when the mission, the vision, the goals, of an important entity are mentioned as being in a state of risk, it is easier to call the attention not only of researchers which are directly affected but the attention of those in directive positions. A desire output if we assume that those in high ranks, are in those superior positions because of their political skills or political connections. No matter what makes a person to take the position of “rector” or “director”, these people are potential allies of interest, in order to promote a direct action with other high ranked people in other institutions. One more time, we have another way of constructing and increasing in size a problematic situation. The specimen end by informing that academia is doing a demarche in order to be involved in decision making. One of the principal goals in order to surpass the problem.

The other two members of the *Pink Branch* of my Tree of News, as mentioned before, are quite similar in the particular set of traits they share. One is published by UNAL, on 27 February of 2012. The other by the portal web *Universia* on 17 May of the same year. The structure of both are the same. The first is “more complete” because it give more details and quotations. The second, look like a summary of the first. One more time, we suspect that the main source of information is UNAL and other sources just look for primary or secondary sources where UNAL is a special fountain of facts and News of interest. Perhaps here we have another case of “copying with modification” in which one

News is suspected to be the main source of information for the other, so, having similar traits, similar order and, *analogous discourses*. Even the only picture shown on the UNIVERSIA comes from *Unimedios*, that is, its authorship belongs to UNAL.

Both make special references, as Prensaverde, on a new change on normativity that instead of improving a situation looks to construct a worse scenario. Resolution 260 of 2011 threat scientists by incrementing costs if they want to get access to genetic resources<sup>135</sup>. But this two pair News talk that in fact the proposed change is not going to be worst because it will put more trammels that the old one. What looks problematic now is the unfair treatment among different institutions as suggested by the next quite similar fragments of texts.

*“Nos parece bastante desnivelado: institutos, corporaciones y niños de colegios sí pueden realizar proyectos que impliquen la colecta de organismos, plantas o animales en el territorio nacional. Mientras que el resto de las instituciones de investigación en Colombia necesitamos un permiso de colecta”, declaró Andrade, quien afirmó que este año ha sido el peor de todos (UNAL, 2012i).*

*“Nos parece bastante desnivelado con la investigación: unos institutos, **unas corporaciones y los niños de los colegios sí pueden estar realizando proyectos** que impliquen la colecta de organismos, plantas o animales en el territorio nacional. Mientras que el resto de las instituciones de investigación en Colombia necesitamos un permiso de colecta para poder desarrollar una investigación”, declaró Gonzalo Andrade, asesor de la Vicerrectoría de investigación de la UN. Afirmó que este año ha sido el peor de todos (UNIVERSIA, 2012i).*

What looks paradoxically of the situation is this: how is it possible that entities of the governmental and schools –both active users of knowledge that is produced in universities– can collect organisms without any problem but not the academy? It is paradoxically if we consider that the considered legitimate practitioners of collecting are the scientific communities that inhabit universities. Of course, to say that only universities produced knowledge is silly. But, even if it is admitted that these other places produced good knowledge, still remained as an unequal treatment if some of them can collect without surpassing obstacles and the others cannot.

In Colombia, we have a governmental entity, Ministry of Environmental and Sustainable Development (MADS) as the branch of the state in charge of taking care of environmental issues since its creation in the nineties. This entity has many dependences and affiliated

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<sup>135</sup> Trait 137 - Resolución 260 del 28 de diciembre de 2011

entities that help them to do their national work. Among them we have the already mentioned IAVH, the ANLA, INVEMAR<sup>136</sup>, IDEAM<sup>137</sup>, IIAP<sup>138</sup>, SINCHI, some of them of regional importance and the Autonomous Regional Corporations (CARs)<sup>139</sup>. These other entities, manage knowledge, are quite important for regional development, environmental permissions and even have research groups that can produce knowledge of the same quality of their academic brothers. In fact, these are also *scientific-community-made-of*. But their interests look different, and they, as the schools, are in better position in order to collect.<sup>140</sup> Of course, this asymmetric treatment is unacceptable for scientists and their demands are in the direction of being in a better state or -as exposed in those specimens- at least with the same warranties for doing their job by mean of creating equal opportunities among sectors.<sup>141</sup>

Another important set of traits of these two textual specimens are focus on proposing one important change on normativity that not only will equate the situation in terms of equal treatment among entities but, will erase many of the headaches for scientists. These changes are: to eliminate costs for consultation<sup>142</sup> and even the process when scientific research is the intention; that any Colombian institution doing research with scientific purposes have to ask for collection permissions and for accessing to genetic resources (unless commercial purposes are on the table); that the only responsibility is that entities will have to take care of their scientist's activities, and they should inform and create shorter bureaucratic processes for registering projects and scientific activities by means of creating systematic virtual tool<sup>143</sup> *pro* inform state of project to MADS. All these measures want to minimize time, costs and to speed up procedures<sup>144</sup>.

Besides, another way to sustain that this is a local problem that perhaps do not happened in other countries the text exemplified this point by the comment of Gary Stiles, a USA

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<sup>136</sup> Trait 43 - INVEMAR (Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andreis")

<sup>137</sup> Trait 42 - IDEAM (Instituto de Hidrología, Meteorología y Estudios Ambientales )

<sup>138</sup> Trait 45 - IIAP (Instituto de Investigaciones Ambientales del Pacífico)

<sup>139</sup> Trait 47 - Corporaciones Autónomas Regionales

<sup>140</sup> Trait 193 - Otras entidades en mejor posición (gubernamentales, colegios)

<sup>141</sup> Trait 214 - Crear igualdad de oportunidades entre sectores

<sup>142</sup> Trait 221 - Eliminación de cobros por consulta previa

<sup>143</sup> Trait 217 - Sistematización, agilidad por herramientas digitales/para toma de decisiones

<sup>144</sup> Trait 213 - Agilizar trámites, disminuir costos, claridad

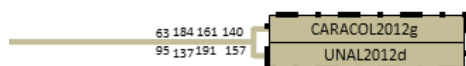
researcher that decided to live in the most biodiverse country of the world, and now, is professor of ICN at UNAL.

*“Estos trámites hacen que sea imposible cualquier proyecto de investigación con colaboración de científicos extranjeros. Si estos decretos y propuestas se dan, sería una alerta a la comunidad internacional y Colombia se convertiría en el hazmerreír de todo el mundo”.* (UNAL, 2012i)

All these problematic situations as Gonzalo Andrade would say, make that the losers here are not just the scientists, but the whole country (Prensa Verde, 2012m) and even other countries that are interested in performing research in Colombia but they can't because, here, the “tramitomania” looks to be a cultural trait of our inefficient procedures that, as professor Stiles says make us the laughingstock around the world.

Contrasting scientific situation, with school situation, other entities situation, foreign situation and, as I said in purple group, mining situation, is an effecting way not of making evident the causal factors involved in constituting obstacles for acquiring permission for biological research easily but one way to argue, to list, to make evident that there is a problem for an asymmetric treatment among sectors. Here the point is to focus on unfairness treatment, where Science is in a clear disadvantage state which constitutes a way of victimizing scientists.

#### 4.1.3. *Incoherenciadidae* (Brown)



Two texts reacting to a third one: Resolution 0260 published 28 December of 2011<sup>145</sup>. The News are from 2012, just starting the polemic year. And here we can detect the suspicious similarity we have explained before: UNAL, 2012d published before CARACOL, 2012g; both, reacting to a new resolution published by ANLA an entity of MADS; CARACOL publication look like a reduced copy of the first. Another case of “copy with modification”? The modification implies a reduction in information but “the essence” of

<sup>145</sup> Trait 137 - Resolución 260 del 28 de diciembre de 2011

the News is the same. The News published in the private entity has the same archetype<sup>146</sup> than the publication made by the state university. Why is this already redundant observation important for the discussion about the constitution of a problematic situation? That the original archetype come from UNAL, and the other media, like those publications made by El Espectador, Caracol, Unisabana and Prensaverde “inherit” those traits that characterize and constitute the problems mentioned. This hereditary process can be due to different reasons: *i)* as the described before, is because different media can have the same authors that write similar text for different audiences; *ii)* because one platform, as Universia, look to copy interesting News from universities. The question is: do they do it for their own interest or because universities tell them to do it? *iii)* Because one author plagiarize other; *iv)* coincidence, or they are similar because of convergent analysis of a situation that is mentioned in quite similar ways relating quite similar traits (names, institutions, quotes, etc.). No matter which are the explanation for every single similarity among my textual specimens what can be considered as relevant is than every single “descendant” is a replicator of the problematic situation, so, transfer of information from UNAL, if considered the main source of information, to other media, is fundamental in order to promote the dissipation of Bad News.

**Figure 4-2:** Another Bad text for scientists. Resolution 0260 of 2011 by ANLA.



*“Government mocks scientists” say experts* (UNAL, 2012d) and *Scientists in Colombia are charged to investigate* (CARACOL, 2012g) victimize scientific community: victims of governments; victims for paying. Those News besides expressing the already mentioned

<sup>146</sup> Archetype is an expression that we can find in some documents about philosophy and history of biology. In the context of biology it was a term to appoint a perfect form that could describe the essence of one group of living being. Before the age of evolutionism with the Darwinian revolution, the naturalists look to find the essential form of different group of organisms. With evolutionism the archetypes fall. In this context, do not take care so seriously this concept.

problems<sup>147</sup>, react to the new payments imposed by Resolution 260. Now, following scientists, the new rule imposed by government disavow the dialogues that the UNAL, and other representatives from other universities, had had with MADS in order to solve the problems. In fact it is mentioned by Andrade that some scientists in fact had a meeting with advisers of the minister of MADS Frank Pearl in 2012, a Colombian politician that will be noted in this case as someone that do not hear the academy<sup>148</sup>. That is, scientists present themselves as actors trying to go out of academy to different places in order to change a situation that affect their practices. Scientists wanting to be the direct mediators of the situation. But this resolution was not a solution for them. It implied more payments now for the evaluation and monitoring of research projects<sup>149</sup>. These payments are even the high on the tables managed by Ministry of Transport<sup>150</sup> and by the United Nations Development Programme<sup>151</sup> in the case for foreign researchers. One more time these changes are not taken as incentives for doing research in country, which, make that many scientists had –as scientists’ say- to be in a framework of illegality but forced by the kind of requirements demanded by normativity like Resolution 260<sup>152</sup>. Remember (as scientists’ would say): scientists are not doing illegal things because they do something wrong, they do it because the regulation of their practices is wrong.

Finally, another critiqued aspect by academics is about internal incoherence of government<sup>153</sup>. This incoherent aspect is performed by presenting other texts that are supposed to be aligning with the interests of scientists by using them in the direction of minimizing processes, and therefore, time and money. These are the Nagoya Protocol<sup>154</sup>, one document produced by United Nations which is shown as a device for promoting research in the signatory countries by according some rules in the case of access to genetic resources and with the ideal of an equal benefit of communities that could take advantage

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<sup>147</sup> Like the best positions on mining, the problem of consultation, and the costs of time and money.

<sup>148</sup> What some could find ironic given that Frank Pearl has had the role of mediation in different critical situations in Colombia, like being negotiator of the peace agreement with FARC-EP.

<sup>149</sup> Trait 184 - Pagar a nacionales y extranjeros por evaluación

<sup>150</sup> Trait 63 - MINS. Transporte

<sup>151</sup> Trait 95 – Programa de las Naciones Unidas para el Desarrollo (PNUD).

<sup>152</sup> Trait 157 - Por cumplir la normatividad

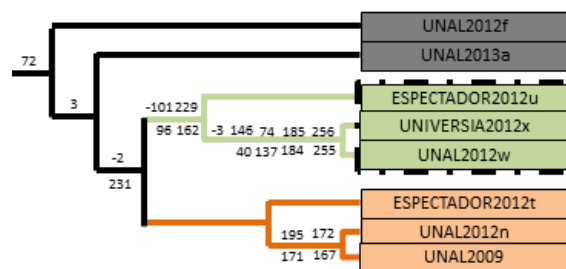
<sup>153</sup> Trait 161 - Incoherencia interna del gobierno con normativa

<sup>154</sup> Trait 140 - Protocolo de Nagoya



of their derivatives. The other document is the Anti-paperwork Law (*Ley Antitrámites*), a normative which impulse Juan Manuel Santos Government supposedly for reducing procedures (and that will appear as an important trait in Blue group later). Of course, these two documents are turned against the resolution published by another branch of government; therefore, the accusation of incoherence is put as valid and harmful for Science development. Following the rationale tradition of occidental science as a holy battle against “bad logic”, “incongruences”, and the like, to make emphasis on incongruences is a good shot to construct government as an entity that cannot take proper rational decisions (and need some help for that?). Looks like a call for Republic Science in order to help Politic Science in a regulatory case.

## 4.2. *Institucionata* (Orange + Green + Dark)



### 4.2.1. *Nuestronidae* (Orange)

The oldest specimen when considered trait “time” is UNAL, 2009. This is a remarkable one because, though it was not the first being read by this researcher, it was one starting point of reference when starting to define the different traits that it can be found in other specimens. Because this was a starting point for creating categories than afterwards were used for doing comparisons and for crating the Tree of News itself, we find that: this specimen is the one with more shared traits present in the whole set; though this specimen do not take into account many of the traits that will become redundant in others (like “Gonzalo Andrade”) it exposed many of the problematic situations that will be repeated in posterior specimens. Talking in terms of evolution, this specimen would be considered ancestral, but, in fact, in the Tree of News this is not a basal group, and, considering the selected traits, its closer relative is one publication – UNAL, 2012n- that will appear on

web much later. As I said previously, my intention here has not been focused on creating a successive step of events, or constructing a history (if that would be my intention, I would first mention on this section UNAL, 2009) but to map the traits and the way they are used, in the texts for justifying a problem for science in Colombia.

As this specimen is related in chaotic way with the others, let us list the common elements that in fact would help us to sum up some of the redundant traits considered so far:

- There is a considerable part of scientists on a framework of illegality because normativity<sup>155</sup>
- Problems for generating patents<sup>156</sup>
- Legislation that obstacle scientific progress and development
- Few projects with access to contracts for access to genetic resources
- Possibility of jail for scientists

Following journalists of UNAL an investigation made by research group in environmental policy and legislation (PLEBIO) at the head of the lawyer Gabriel Nemoga show that scientists that collected biological specimens and wanted to make a contract for access to genetic resources specimens were out of law. Why? Because they didn't had the permission to collect and using genetic material because it was apparently too annoying, expensive and they spent a lot of time, even years (even four years), in doing it "the right way", in doing the formality. So, many scientists that were in areas of research in topics as biodiversity, taxonomy, ecology, genetics, biotechnology and systematics, mainly (the mentioned research said almost 96% of them) decided to collect and extracting DNA without any legal permission<sup>157</sup>. Thus, ¡They belonged to the obscure world of illegality!

At the mere starting of this discussion there is implemented a dichotomy or two possible paths that a scientist in the condition described above had to choose: either doing research

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<sup>155</sup> Trait 167 - 96%/92%/95% en la ilegalidad

<sup>156</sup> Trait 171 - Problemas para generar patentes

<sup>157</sup> As a biology student I was witness but also guilty for collecting frogs, bugs, rats, birds, fishes, bacterias and all that sort of things, without any government permission, not even the non-human-captured permission was asked for, the last is not something required not even in the current normative.

illegal or not researching. If it is decided to research the scientists had to consider the possible extra costs of their projects.

*“Hay investigadores que se plantean la posibilidad de recibir el laboratorio por cárcel. Los trámites son tan dispendiosos que prefieren estar fuera del marco legal. Otros, abandonan sus investigaciones, con graves consecuencias para ellos y para el desarrollo del país”, sostiene el abogado y doctor en Ecología Gabriel Ricardo Nemogá. (UNAL, 2009)*

It is better being on illegality or abandon. But, if the scientist takes the risky way, he has to face the possibility of confronting a legal charge. If abandon the project then negative consequences to researcher, and therefore, negative consequences for universities, academy, Science, Nation, Society... But it looks, considering News (and some interviews done by me) that no single scientist in Colombia has paid one single year on jail by being “unavoidable” on illegality since 2009<sup>158</sup>. Is this a case of omission of Law? If many people belonging to governmental entities, knew about the situation, why not to denounce scientists? Those are not easy question to handle, but for now, it look that governmental agencies initially were agree with the problematic situations of scientists and, basically, decided not to proceed as they would in other situations where law is demanded to act. Basically, scientists by not being penalize were empowered as the holders of reason in this controversy.

Not the scientists but the normativity and its demands what sign as guilty is.

*También concuerdan en que el rigor de la legislación no puede estancar el desarrollo científico (UNAL, 2009).*

Rigor (*rigor*) is a familiar term when talking about scientific method and its secrets. In fact, in some manuals about science it is said that rigor -among other features as being systematic, analytic, factual, and others- as intrinsic qualities of the way scientists work in order to produce theories and experiments that could be validated or refuted<sup>159</sup>. But here

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<sup>158</sup> In fact, I have not heard about a biologist that had to go to jail for doing research stuff in any year. The only News I know where a “biologist” had to go to jail in a Colombia case, is one when someone that pose as “biologist,” fool his female victims in order to abuse of them in wetlands. Following National Police, the accuser, tricked their victims by saying he was biologist. Is my label a trustful heading? ([http://caracol.com.co/emisora/2016/08/04/bogota/1470328751\\_888250.html](http://caracol.com.co/emisora/2016/08/04/bogota/1470328751_888250.html)).

<sup>159</sup> Of special importance in Colombia and other Latin-American countries, the book, the manual, *La Ciencia, su método y su filosofía* of the argentine philosopher Mario Bunge (published originally in 1959), circulated efficiently the idea that Science had specific and better ways to produce scientific knowledge.

the efficiency in regulating due to normative is not convenient for scientists, and in fact, its application is dangerous because its statements are just considered invalid for scientific practices and interests.

With time, and with reading, the problem of *access to genetic resources*, which was one of the initial topics considering the News published earlier as UNAL, 2009, will become more related to the general problem of *collecting* and, it even acquire a linguistic magnification when the News start to equate one specific aspect of biological research, with *doing biodiversity research in general*. In fact, the sentence about 96% of scientist working on illegality referred initially only to projects that involved access to genetic resources (which, of course, are not all research that involved collecting) but later those data will be used as a cipher we can referred to research with other purposes.

Some of these textual traits are also mentioned on the brother branch of UNAL, 2009: UNAL, 2012n. Both are more concerned not with collecting but in the topic of getting permission for access to genetic resources. The later, ads another normative element to discussion, which is the International Convention for the Protection of New Varieties of Plants, a document produced in the framework of free trade with USA (*TLC, Tratado de Libre Comercio*), that is also shown as problematic because presumably will difficult the production of patents nationally which could rest Colombia in competitiveness. The phenomena associated with the difficulties for getting contracts for access to genetic resources is now associated to a wider commercial phenomena. If there are problems with the access to contract of genetic resources, there will not be possible patents as products of research; if there are not patents, and then there is not a potential competitive advantage against our trade competitors. So, problems for doing research could even have implications in the framework of free trade business, for the case, with unfavourable situations for Colombia.

Other relevant aspects not mentioned before in UNAL, 2012n are:

- Foreign researchers can use our natural resources<sup>160</sup> and better advantage comparing with national researchers
- Places as UNAL have a relevant role in the construction of knowledge and this goes hand in hand, with the construction and increase of biological collections.<sup>161</sup>
- Some problems are because of scientists

This last aspect is exemplified with the following quote, a real rarity, because it signalizes another kind of explanation for the problematic situation.

*“Las demoras no se deben solo al procedimiento de las autoridades ambientales. En algunas ocasiones se debe a que los investigadores no presentan completas las solicitudes y muchas veces la entrega de información adicional necesaria para continuar con los trámites es bastante demorada. Claudia Patricia Mora Pineda (viceministra de Ambiente) (UNAL, 2009)*

That is, the fault is not only because the normativity is bad design, but, that the scientists are not as rigorous and competent doing the procedures at the specified time and with the specified structure and formality. Of course, the best possible world for scientists is the minimization of these procedures or, even better, the complete absence of the same. Of course, this odd opinion, considering that all the problems are associated to be out of science, comes from Claudia Patricia Mora Pineda, in 2012, vice-minister of MADS, that is, her opinion can be seen as a counterattack, in a war where more than the 90% of missiles have been as target precisely MADS.

What about the other branch of the orange group? EL ESPECTADOR, 2012t is one specimen that initially does not look to be related directly to the entire controversy we have been talking about until now, an in fact it presents another controversy that involves the most known scientific hero of recent times in Colombia. I am referring of Manuel Elkin Patarroyo, the eternal expected curator of malaria.

Here the controversy focuses on the uses of animal for experimentation. Patarroyo was accused, even for biologists and environmental groups, of collecting monkeys without

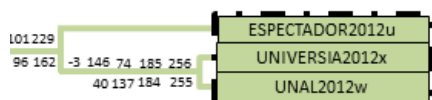
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<sup>160</sup> Trait 172 - Que investigadores extranjeros usen lo nuestro

<sup>161</sup> Trait 195 - Destacable papel de la UNAL en investigación/colección (ORGULLO UN)

permission for doing his experiments trying to find an effective cure for the tropical illness. Senator Jorge Londoño, from Green Party (*Partido Verde*), wanted to make a reform in order to protect animals from arbitrary uses. Unfortunately, for many scientists this is not a desired solution because they say they need to collect and to experiment with them in order to search for viable solutions as in the case of malaria. Gonzalo Andrade is a trait in EL ESPECTADOR, 2012t, and, we can say, he achieves to connect this controversy with the general problematic situation about the bureaucratic processes that scientists confront in our country. In fact, thought the central topic of this textual specimen canters on animal protection and their uses in experimental affairs, Andrade uses this controversy as another case to add to the list of examples that show the conflicting situation among scientific practices and interests and the regulatory processes made by apparently blind agencies.

#### 4.2.2. *Cartidae* (Green)



Another change in normativity that can affect scientific activity<sup>162</sup>. In this case the reform of the Code of Natural Resources<sup>163</sup> valid since 1974 (Law 2811) and under discussion on 2012 by the House of Representatives<sup>164</sup>. It is considered problematic<sup>165</sup> in two ways: a possible problem with environment apparently because it would promote benefits to mining licenses that can put in risk local biodiversity; and for scientific research but... ¡it is not explained why this is problematic! Perhaps, reform just ignored the problematic situation that has been tried to visible in many different instances. Perhaps the reform does not reform exactly the part that should be reform. No idea. What it is explained are those problematic situations we have already considered: the problem of illegality for not having permissions; the inefficient and the costly for having permission in the case of getting access to genetic resources; the problem of time and paperwork; and how, the resolution

<sup>162</sup> Trait 256 - Modificar reforma de código de recursos naturales

<sup>163</sup> Trait 146 - Código de Recursos Naturales

<sup>164</sup> Trait 74 - Cámara de representantes

<sup>165</sup> 255 - Reforma inadecuada Código de Recursos Naturales

260 published by ANLA<sup>166</sup> promote more charges for evaluation and monitoring projects<sup>167</sup>.

Even worse that all this problematic situation and something that help to break confidence among parts in discussion is when it is asked for something and it is just ignore it, that is, when no proper dialogue, discussion, is achieved. This is how scientists feel – or at least said to feel- in the case of this controversy and the finger sign the deaf part as the State<sup>168</sup>. Silence is one kind of interaction but it is not the preferred one in many situations.

*Por todos los medios han buscado un diálogo con el Gobierno. Lo intentó la Academia Colombiana de Ciencias Exactas, Físicas y Naturales a través de un comunicado, pero la respuesta fue un “silencio absoluto”. También la Asociación Colombiana de Facultades de Ciencias y el mismo profesor Gonzalo Andrade, cuando fungía como vicerrector de Investigación de la Nacional. Finalmente se unieron y crearon su propia propuesta, detallada y argumentada, para destrabar el proceso. Pero siguió reinando el silencio (EL ESPECTADOR, 2012u).*

If there is no positive answer then the strategy is to make their voices even stronger and directed to different targets. Besides the unexplained reason of why the reform mentioned is problematic for the topic in discussion, following UNAL, 2012w and ELESPECTADOR, 2012u, a letter was sent to the President of the Republic, Juan Manuel Santos, and signed by 1.084 researchers on 22 of August of 2012 in order to ask for solutions. This is done, after trying many points of contact with other dependence of the state. One strategy for not being ignored: call for firms; get a lot of them; make sure signatures have an adequate membership (respectful scientists for example); direct it to a quite important person, preferably, one superior of the entity/person with which you are having problems or are being ignored (president, gerent, boss, the equity partner). For scientists, the State blocks research and this letter pretended to be a manifestation of a collective alignment, a consensus in an important community, an illustration of a problematic situation, in order to ask, directly to the head of nation, the reforms and the forums necessary so a chance for a change could emerge if a superior attention is get in state hierarchy.

*“Con todo respeto por el señor presidente, manifestamos nuestra disposición para exponer en detalle nuestros argumentos y propuesta para que los investigadores en Colombia, uno de los*

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<sup>166</sup> Trait 40 - ANLA (Agencia Nacional de Licencias Ambientales)

<sup>167</sup> Trait 185 - Cobro por seguimiento y evaluación de proyectos

<sup>168</sup> Trait 162 - Gobierno sordo

*países más ricos en biodiversidad del planeta, podemos seguir adelantando investigación”, concluye la carta. (EL ESPECTADOR, 2012u)*

Did the president answer the letter? No textual specimen tells that story. That would be an answer that will come later when other specimens considered (Interviews in next chapters).

Another reflection about News composition: UNIVERSIA, 2012x is a copy without almost any modification of UNAL, 2012w. The only differences are the headlines (*Investigación científica: la reforma al Código de Recursos Naturales genera críticas v. Estado pone en jaque la investigación científica*); trait time variation (12/10/2012 v. 10/10/2012); UNIVERSIA, 2012x omits the first paragraph, and some pictures that are presented in the other specimen; UNIVERSIA recognizes authorship in the last part of the News though any innocent reader could easily ignore this feature. UNIVERSIA, as mentioned in one case exposed before, is a platform, where textual specimens from universities can expand their distribution and, therefore, be more visible, and promote the redundancy that, in this case, talked about a problem for scientific community. To replicate information in different ways is an effective way to establish a perspective as a fact, or, at least, to promote a common opinion and increasing its size. One more time, UNAL is the origin, the others look to be mere descendants (but different).

In this green group another trait is presented as an important one in its effort to improve the situation of science in Colombia: Colombian Academy of Exact, Physical and Natural Sciences<sup>169</sup> (ACCEFYN). This is mentioned as affiliation of Gonzalo Andrade and also as an actor that was involved in the process of communicating the problematic situation to the State, but with little apparent success.

### **4.2.3. *Perdidae* (Dark)**

Taking into account trait time, UNAL, 2013 would be the last of my list in this section but it appears as the closest relative of the green group. This was published in January 28 and that is almost three years of difference with UNAL, 2009, published in November 8. And both, though distant in time and tree distance shared some of the typical traits present in

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<sup>169</sup> Trait 96 - ACCEFYN (Academia Colombiana de Ciencias Exactas, Físicas y Naturales)



one specimen and another. Time, money, permission, consultation, bla, bla, bla. But, what is of special interest for my reader – that at this moment must be tired of reading about problems and problems- is that this specimen talk about an event and a series of solutions to the problematic situation (and because this is the section about a *Natural-Social History of a Problematic Situation*, few line will be dedicated to it).

*Un equipo conformado por un grupo de asesores del despacho del MADS y cuatro profesores representantes de estas universidades, en conjunto con sus rectores, ha logrado agilizar el proceso desde septiembre (UNAL, 2013).*

This specimen talks about a work that involved members (rectors and scientists) of different universities (UNAL, UAND, UDEA, PUJV) working on a purpose that is under study of MADS and scientific community as both the legitimate arbitrators on the regulatory process. As it is mention, this was possible because, finally, the government hear and understood the problematic situation. After this understanding and “important meetings” (the minister Juan Gabriel Uribe and rectors of four Colombian universities) the scientists get involved as active as was possible given the circumstances in the process for changing Decree 309 of 2000. In fact, the News does not say that members of MADS or other parts of State were active constructors of this new intention of changing regulation on scientific practices<sup>170</sup>. Only Scientists look to be the effective and creative policymakers in the stage. This event, this process of policymaking and the accepted demands will be developed in posterior sections but now the mentioned event, the conformation of this Community of the Decree, is just another trait, one that characterizes this textual specimen among those considered in this section.

UNAL, 2012f, the other dark member, is in fact News base not on some interviews and a revision of documentation made by a journalist. This specimen is based on a Radio programme named *UN Análisis*, of UN Radio. The central topic of the radio programme is the Antipaperwork Law (*Ley Anti-trámites*). This decree-law was published with the goal of diminishing administrative processes and to speed up much different kind of projects by means of supress unnecessary paperwork as mentioned in previous section. Who does not

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<sup>170</sup> Of course, that is what this textual specimen suggests. Different information will be given by other non-textual specimens in posterior sections about the process of regulation itself.

desire that? Who does not desire faster processes?<sup>171</sup> This was a well-received normativity, not only for people that hope to diminish the process where they are involved but this was useful for Gonzalo Andrade who, masterfully achieved to associate this topic -as he does it with others- with his problem of interest. For him this Law, in the case of promoting research, practically has a zero effect, because what Andrade and other desire, is that scientists not only do not want to diminish their paperwork, the idea, is not to have to give any paperwork at all. Their ambition for the case of ask for contracts to MADS for getting access to genetic resources, is to do not have to ask for any kind of permission. Just in this way law anti-paperwork would really make the difference for research in our country. Another apparent textual incoherence among governmental documents.

### 4.3. The paraphyletic group (Gray group)



A paraphyletic group is a term coined in the context of biological systematics in order to referred to those groups (taxa) that are “derived from a single ancestor, but does not include all the descendants of that ancestor” (Futuyma, 1998). A biological example is the group of reptiles. Of course, this concept, as it exactly is, does not make any kind of sense in this context but as evident when observing the tree, this News that are going to be part of this Grey Group are not nested the way other groups we have been talking about before (except for the case of Dark Group). This means that there is not a set of traits that define this group, more or less, as a different group as suggested with Purple, Pink, Brown, Orange and Green groups<sup>172</sup>. This group shared with the others the trait “Vice-rectory of Research of UNAL”. This is a place important to mentioned because of three aspects: first,

<sup>171</sup> Perhaps some scholars desire to walk as low as they can, to find the true in the details, and all that mean time and resist to succumb in running or jumping. For reading a sympathizer for not going too fast in research, go –not too slowly- to talk to Latour, he is at *Reensamblar lo social* (2008).

<sup>172</sup> But remember that it other were the initial elections when the trees were generated, and in fact, if other tree were chosen of those 26 produced by my methodology, then, the sections will be quite different and the ones with a paraphyletic pattern.

it is the entity which function looks more appropriate to be concerned with the problematic situation on table; Gonzalo Andrade, one of the main “dispersers” of Bad News on the Colombian whole ecosystem, was affiliated as an adviser of this administrative appendance of UNAL; third, this place is one of the supporter of the data that will be used to support the problems under discussion. This is the way this trait is so important and redundant in our own specimens. All members of this paraphyletic group have this trait except the News “ALAI, 2012j” (look the -2 in the Tree of News).

What do the rest of these specimens add News to our News discussion? Let us emphasize the principal traits of them, without considering the “stones” which have already being mentioned.

- a) UNAL, 2012p can be taken as the main argument of why the methodology here used perhaps is not the best if the desire goal is conforming groups that associate similar events, conflicts, and situations. Why? Because for any competent reader, this specimen should be classify with CARACOL, 2012q and RCN, 2012r. And this is because the next arguments: they are published the same date (31 May 2012); they mentioned specific traits that are present only in them like the town Zapatoca (Santander); before designing the strange methodology of the Tree of News, these three News were considered part of a particular group that was considering the same event: the problem that some professors and students belonging to UNAL have had in a field trip with teaching purposes to Zapatoca because they collected biological specimens without the required permission and someone (or something) denounce them. That is, this case exemplified the possible consequences that doing something without permission can have, and the whole episode is shown, especially in UNAL, 2012p, as signature that something wrong is happening with regulatory processes that look to disavow the importance of some scientific practices for teaching and researching. This particular case will be developed later (¡do not miss The Z event!). If UNAL, 2012p is undoubtedly related to the white group. Why it is not nested there? Was there a problem with the methodology? Did I miss to put some correct traits in order to obtain the

“genuine” structural pattern of the tree? The only brief explanation is this: the set of traits considered were limited, and they were as simplistic and without a context, that some general features escaped from the matrixes and allow one specimen to be in what we now consider not a very appropriate place for it. Why it is not considered for this writer as appropriate? Because trying to construct a story about a problematic situation I would preferred to put together the three textual specimens on question. Fortunately, one methodological step we can do is the following: ignore for one moment the tree structure that has guided until now, its hierarchy, its nested composition, and, when talking about the case of Zapatoca, use UNAL, 2012p. This can look tricky, lack of *rigor*, but remember an important remark: I do not pretend to postulate the correct methodology in order to structure a story based on the discovery of the “correct” pattern to organize my narrative. I just want to compare, and, if for achieving that I have to cut one branch of my tree and paste it in other part, I will do it. Sorry my invaluable reader if this is a movement you are not agreeing with. So, UNAL, 2012p see you later<sup>173</sup>.

**Figure 4-3:** Indigenous Power. “*Los indígenas han demostrado su poder con marchas como esta, de 2008, en el Valle*” (El Tiempo, 2012h). “The indigenous have demonstrated their power with marches like this...”



- b) El Tiempo, 2012h has two copies, or two ways to be presented to audiences. One on paper the other virtual. Both with the same textual content. The only difference

<sup>173</sup> Tricky but not so tricky. In fact, the text is in the ordered specify by the Tree, and in fact, I already mentioned some traits that characterize that specimen. Well, let us just considered this specimen as a *hybrid* that is present in both parts of the tree.

is that the paper version contains an image and a description of it (Figure 4-3). The image is about what we can name a “collective manifestation”

In fact, some ethnic minorities in Colombia are one of the collectives more organized when they get a sense of trouble. At least, that is what my father has told me as someone who has worked with these communities as escort. But, what is what this power can achieve if they use it? In Colombia exists a legal framework for protecting ethnic minorities as groups of *raizales*, *afros* and *indígenas*. One of the mechanisms that were design in order to protect their cultures and ancestral territories and resources is the mechanism of consultation supported in the emblematic constitution of 1991. The central aspect of this measure and its main argument is something like this: “If you want to do a project in my land, ask me, I can give you permission, or not, but that’s not your decision, it’s ours”. The communities have veto power. We initially can think of it as a legitimate arrangement and we could even qualify it of fair with minority groups. But EL TIEMPO, 2012h does not refer that way: consultation is built as a real obstacle. What for? For different kind of projects that are associated with the goal of development like: *i*) inhibition of agricultural expansion (the specimens talks even about the discussion of this topic among two ministers: Juan Camilo Restrepo, minister of agriculture, and Germán Vargas Lleras, Minister of Interior, the entity in charge of consultation process); *ii*) mining and infrastructure sectors; and *iii*) scientific research. In fact, the academic problem is not part of the main corpus of the text; it is mentioned as an “extra note” of the corpus. That is, it is not given to this topic to the status of the main problem of consultation, but another thing to take into account of a big list of sectors that feel that asking communities for the future of their projects is a real headache (and “pocketache” because of the costs involved in the participation process). To exemplify the costs, one more time Andrade appear as the accuser, the spokesman of Science. He signs, as he has done it in many of the textual specimens, that the costs for consultation can be of 15.000.000 COP or even more if there are involved many different communities overlapped with the region target of research interest. An study of Palma is stopped

–as it is mention on the El Espectador- because that project have to consult the uncomfortable quantity of 400 hundred ethnic communities, so, its costs will be around 250 million pesos. A big quantity for a country with relative few budgets for doing research. Besides that, the time that consultation will imply would be of years in a case like this. Consultation though considered important for a country wants to be democratic and a promoter of participation, for many sectors is a undesirable process that stop their desire chain of actions.

- c) ALAI, 2012j is some kind of reactive response to the previous specimen. The previous News can be considered as showing the negative aspect of consultation. However, ALAI, 2012j, published like one week later, try to analyse the specimen itself, pointing out what is qualify as *prejudices* and some legal *inconsistencies*. In fact, in terms of numbers of words, this report<sup>174</sup> is the most extensive of all and the only one that does not treat consultation as a problem. How do writer achieve his goal? By doing some similar thing I have done when analysing my own specimens: it is made an effort to synthesize the general topic; there are mention specific traits, as names, institutions, and kind of arguments; some explicit quotes or textual fragments are presented without modification; it is highlight some aspects of interests and a critique or reflection is performed; some associations with external texts and opinions are made. For his analysis, the journalist point out UNAL, for disavow the dynamic of ethnic ancestries; it point out EL TIEMPO, of having a biased sample of experts, not including the opinion of people of UNAL, like Claudia Mosquera and Jaime Arocha, whose opinions, as suggested by Taborda, the journalist, would show the other side of the coin, and therefore, illustrating both sides on tension.

*Llama la atención este señalamiento, pues si hay una institución conoedora de las dinámicas ancestrales de las comunidades étnicas y, buena parte de las veces, defensora de sus derechos es la misma Universidad Nacional, y ahora resulta que esa universidad no puede desarrollar un proyecto de investigación porque no ha podido consultar con dichos grupos en tres años. ¿De qué otras cosas irá a salir responsable la Consulta Previa? Valdría la pena que la Universidad Nacional se pronunciara, pues otra cosa pensarán académicos/as respetables como Claudia Mosquera o Jaime Arocha, profundos conoedores de las dinámicas indígenas y afrodescendientes. Sin embargo, el articulista*

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<sup>174</sup> Written by Francisco Taborda Ocampo, is a lawyer professor of the Superior School of Public Administration (ESAP), with a magister on Public Law at the University Pablo de Olavide (Seville, Spain).

*no cita a estos académicos sino que prefiere citar fuentes más dedicadas a lo administrativo que a lo académico.* (ALAI, 2012j)

On the other hand, there is another aspect of interest of Taborda's critique: it is mentioned that the only UNAL person visible in the Newspaper is Gonzalo Andrade, which, for Taborda, is a person more dedicated to the administrative work than to academic issues. As this statement appears after critiquing the other bad aspects of El Tiempo analysis, being pointed of "administrative" look to be a worst qualificator than being "more academic". This is an example of the status that academy membership has on these kinds of discussions where "academic" is synonym of "respectful and well-informed" opinion, but "administrative" does not look to possess the same status as adjective. As a response to this qualification, we can see in the section: Comments of the virtual platform where the News was published, that the only comment is performed by someone -an anonymous- who recognize himself as someone that study nature, and that in his opinion Gonzalo Andrade is not just any administrative, he is an academic from UNAL, and his efforts in the topic are sustained because he wants to unlatch research projects. The anonymous uses other textual specimens to support his comment by copying links of three of the specimens we have already talked about which construct an image of a problem that justify Andrade's own posture in consultation matters.

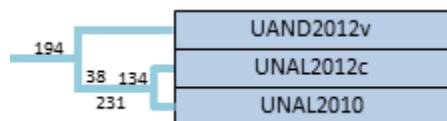
For Taborda, the country has a compromise that has put in explicit way in normative that defend the multi-ethnic character of our nation. And, independently, of how absurd can look to many people the "obstacles" that communities put to their projects, it has to take into account, that any collective has different perspectives about what is progress, what is development, and what are the kinds of actions that must be done in order to achieve a better situation. The journalist, who is also lawyer, by relativizing the term "progress" and "development" defend the process of consultation, which, for minorities, can constitute a mode of protection of their culture and their own destiny. For ALAI, the cause for the slowness of the consultation process is not the ethnic communities but the lack of good planning from government. In fact, it is mentioned a case that would make

evident that when Government align efforts to accelerate consultation process it can be done in times as four months, as was the case of Victims Law (art. 205, Law 1448). So, this specimen translocates the problem from ethnic communities to government process. But it is not denied completely that something has to be improved when a consultation process is needed.

- d) From all specimens UNAL, 2012k is the only one that does not talk about a problematic situation. Then, why is it doing in this tree of problems? It is related to the other because it is mentioned Gonzalo Andrade, the Vice-rectory of Research of UNAL and biological collections as a source for research. But it talks about a purpose that will be mandatory and will have more sense in future sections when some interactions among specimens could be possible: the goal of the News is to inform about the importance of taking the information that is deposited in biological collection and construct a big data base by transferring information from specimens to a virtual state that would facilitate the query from any researcher interested. This systematization will be important when considered the change of regulation about biological collections and collecting permissions that will happened in July of 2013 with the modification of Decree 309 of 2000. In fact, for some institutions that will not develop a system for making its specimens available by means of a logistic and technological implementation in the institutions, this only aspect will be a new headache for those non-systemized possessors of biological collections. But UNAL, 2012k, though an odd bug in this tree, it is connected to it, not only because it was put by TNT in the place on that tree. It is important because the actions described in it, are going to be fundamental in the process of getting permissions to government. One more time, I ask my reader to forgive me and to wait and see later the connection.



#### 4.4. *Mejorata* (The blue)



In many specimens we have seen the presence of trait “Gonzalo Andrade” in which this trait has been associated to others like “professor”, “adviser of Vice-rectory of research”, “academic”, “expert”, “administrative”. I have even referred to him as “the accuser” because his role in textual specimens as someone that journalists convoke in order to explain, to list, to point out, the situations that constitute a problematic situation. But in UNAL, 2010 Gonzalo Andrade is a special trait: he is an author of the specimen itself.

In the first part Andrade uses an element that has been used for other journalists: starting to list a series of facts about our privilege state in matters of biodiversity<sup>175</sup>. Ciphers here and there about species diversity in one group and another. Almost one quarter of the entire document dedicated to give numbers about our biodiversity, naming special groups (birds, amphibians, butterflies, marine invertebrates, mosses, plants, etc). Listing and listing numbers for feeling proud. After highlighting data that make us member of a special category named “megadiverse-country” the next step is to problematize the situation of that biodiversity because actions as deforestation, exponential population growth, global warming, non-sustainable haunting, agricultural growth, urbanization, contamination, erosion, etc. another list of what we consider today classical environmental problems. Then it is established a link, among these biological problems with other social and economic consequences that create an actual state of unsustainable development. Summing up: what we have; how we are losing it; which the consequences are. All this, as an introduction for the development of his own thesis: if it is evident (the facts talk) that we have a great biological richness, and we already recognize the different threats of

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<sup>175</sup> Trait 231 - País megadiverso

biodiversity, then *why the environmental topic is completely out of the agendas of candidates of presidency?*<sup>176</sup> The targets are politicians.

Interestingly, without any further development of his arguments, the last part of the text is another list but of questions (of course without any followed answer, so, they can be considered as sweet demands)<sup>177</sup>. Of this list, for our special interests are the following:

*¿Le presentarán al Parlamento Andino una propuesta que modifique la Decisión Andina 391 de 1996, que tiene en mora el proceso de contrato de acceso a recursos genéticos para proyectos de investigación con fines no comerciales?* (UNAL, 2010).

Andean Decision 391 of 1996 is a Common Regime which gives the delineations for the collection and utilization of genetic resources for different purposes as commercial, industrial, biological prospecting, and research. This is the regime that Colombia subscribe and that force, in some way, forces researchers to celebrate a contract of access to genetic resources with the national entity in charge that in our country is the MADS<sup>178</sup>. Andrade stresses that this supranational decision must be change and that the possible president of republic must do the respective international pressure in order to do it. The questions as are not performed in a face-to-face interaction, can be interpreted, by any reader, as suggestions, or even demands of a journalist-scientists that, look to know what are the key topics to change normative –even at supranational level- in order to build a better scenario for biological science progress.

*¿Desde su gobierno, agilizarán el procedimiento de consulta previa a las comunidades étnicas para que los proyectos de investigación relacionados con el conocimiento, conservación y uso de la biodiversidad se puedan llevar a cabo?* (UNAL, 2010).

The second “question” stands the already mentioned problematic situation: the slowness and cost of consultation with ethnic communities. As the previous question the emphasis is

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<sup>176</sup> *¿por qué el tema ambiental está completamente por fuera de las agendas de los candidatos a la Presidencia?* (UNAL, 2010)

<sup>177</sup> Those are: *¿Qué harían ustedes para detener la devastación de los páramos y de los humedales? ¿Permitirán que continúe la minería en zonas conservadas del territorio nacional? ¿Dejarán que prime el interés económico y comercial sobre la importancia de declaratoria de nuevas áreas protegidas? Y ¿apoyarán la construcción de la carretera del Darién y Nuquí, así se afecten los ecosistemas naturales del país que de por sí están altamente amenazados? ¿Qué porcentaje del PIB destinarán para apoyar la financiación de proyectos de investigación?*

<sup>178</sup> Trait 38 - MADS ( Ministerio del Medio Ambiente/ Vivienda y desarrollo territorial/Minambiente)

made in the temporal aspect of the processes of research (*en mora, agilizarán*) that, given actual legislation, are slow or even its realization is questioned. The main objective is to catalyse bureaucratic procedures, but as it is always put next to this *slowness* groups as ethnic minorities and some documents, the entire fault is directed to them. The questions are opened, and it is not clear if they were sent to the candidates or if the author hoped that someday one of them could run across with them. What it is clear is that these are linked in the list with other topics as protected areas, impact of construction and mining on biodiversity and budget for doing research, when we considered the other questions for candidates, that is, they are posed as important matters as all the members of the list of questions. Besides the supposed public target is not any casual reader. The target public is people with high social status. Linking those questions to people of high status can give the impression that we must be reading high-status-questions, which solutions are urgent, need political interference –of the highest level- and could be convenient for sustainable development and science progress if answered properly. Did any of these questions were taken into account for any candidate and for the eventual winner Juan Manuel Santos? No idea. No identifiable trace.

UNAL, 2012c, the next textual specimen, exposes another important topic that associates collecting, researching and commercial development. The data used here to argue comes from the World Intellectual Property Organization (WIPO), *the global forum for intellectual property services, policy, information and cooperation*<sup>179</sup>, when it is said that just 47 patents were given to authors from Colombia in 2010, and this cipher is taken as insufficient and as one point in a decreasing tendency over the years. If modern societies decreased numbers in any kind of activity, in this age where numbers rules, it is taken as a pull back, a route anyone wants to go. Patents are used to reflect not only a commercial potential but one way to reflect country capacity and support in matters of science, technology and innovation. In fact, it is expected that if a country invests in Science & Technology, more patents are expected as output of the financial input and a consequent growing in any kind of measure trying to make evident economic development, as gross domestic product. Andrade, the journalist and the scientist,

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<sup>179</sup> Visit WIPO at <http://www.wipo.int/portal/en/index.html>

compares this patent production with other countries as South Korean and Spain, being our country in an obvious low position in this matter<sup>180</sup>. Andrade links up this low production of patents with the bureaucratic obstacles that government put to science because all the already mentioned problems. Therefore, resolving this problematic situation becomes one obligatory solution task in order to produce more patents, and with them, more commercial benefit.

UNAL, 2012c, two years published after its brother, shared another trait in common with it: Convention on Biological Diversity signed in Rio de Janeiro in June 1992<sup>181</sup> a United Nations effort to conserve biodiversity and the sustainable use of genetic resources. Another document that adheres to the already mentioned Andean Decision 391 of 1996, Decree 309 of 2000, Resolution 260 of 2011, the reform to National Resources Code, as another problematic text, which content stop research and development. In fact, all these documents in one way are related with the Convention on Biological Diversity, which in some way, become part of the justification and rationale of other texts produced in our local offices.

Los Andes University (UAND) is one of the most famous higher education institutions and is always disputing the top of best universities in Colombia with University of Antioquia (UDEA) and UNAL. But until, now, at least with respect to our specimens considered, its role as a divulgator of this problems look to be minimum.<sup>182</sup> UAND, 2012v is the last specimen of this brief textual collection, the last one of this part of the shelving of one dense collection of different kind of specimens. It is more a report about what some representatives of different entities, governmental, private and public universities, shared in an event realized at the university. It is a virtual platform to show not only the problems, but some of the actors involved under discussion.

The textual specimen talks about a forum that was realized in UAND that convoke many different sectors in order to talked about all the problematic situations we (or better, the

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<sup>180</sup> Trait 194 - Otros países en mejor posición

<sup>181</sup> Trait 134 - Convenio de Diversidad Biológica (1992)

<sup>182</sup> Of course, this will be discussed later with respect with my methodology orientation that hides a biased election and on the other hand, other specimens, will show a remarkable role of other actors and institutions besides those related to UNAL.

News) have been mentioning repeatedly. The forum has the name of “Opening doors for scientific research in Colombia” and it was celebrated 3 of September of 2012<sup>183</sup>, and it was organized by the Department of Biological Sciences of UAND. The textual specimen, mentions our huge biodiversity, present the forum, reveals its goal of talking about the problems concerning collecting, biological collections and access to genetic resources and the rest of information are five quotes link to authors and affiliations. That is, the strategy of let-the-actors-talk-by-themselves is unfolded. Here the journalist has the role of collecting textual fragments of some of the speakers of the forum, select the most revealing and representatives (a selection of at least four hours of speaking), and organized them in a particular way that is never explain<sup>184</sup>. Though short and simplistic in its presentation of information, this specimen is one of the most diverse in terms of presence of different people that look to do different things from different institutions but, of course, special reference to Los Andes members: Manuel Rodríguez Becerra, master in MPhil. Management Studies, University of Oxford, Former Minister of Environment and Professor of Management; Santiago Madriñán, Doctor in biology from Harvard University, Professor of Biological Sciences; Susana Caballero, PhD in Ecology and Evolution at the University of Auckland, Laboratory of Molecular Vertebrate Aquatic Ecology. These first three associated in that moment to UAND; Jhon Jairo Morales, national legal coordinator prior consultation, Ministry of Interior; and, could not miss, Gonzalo Andrade, Master of Science - Biology (Systematics Line), Associate Professor National University of Colombia.

Their comments –the ones selected among many many others- are constituted, more or less, of these familiar topics: *i)* mining permissions easier than research permissions; *ii)* there are purposes from academy but they are not considered by government; *iii)* we are not collaborating in the big project of knowing our biodiversity; *iv)* post-traumatic stress for getting involved in process to get permission for doing research; *v)* consultation is

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<sup>183</sup> *Abriendo puertas a la investigación científica* was a event known for me -as a participant of it as I was- much before I even had the mere idea of the existence of Master in Social Studies of Science. That story will be developed later.

<sup>184</sup> So, why an explanation would it be needed? Only people like human and social scientists look to be aware of the way they write (and just some of them). Perhaps with the illusion to show that its ways are active part of constructing a story. Is that an effort for being honest? Why am I writing this footnote?

obligatory if there can be affection from research projects. The first four, coming from professor of mentioned universities. The last topic is executed by the only representative of the Ministry of Interior, remember, the state entity in charge of process of consultation. Though the comment sober (it cannot be consider a direct attack to scientists that want to avoid consultation process) it stand out that, no matter the purpose –scientific or another-, no matter the intentions –science for itself or for economic growth-, no matter who is involved – experts or lay people- if a project is identified as possible dangerous, or, against ethnic culture, consultation is an obligatory bureaucratic passage point. A passage point that many scientists do not want to pass anymore.

Of course, at this point, these problems are things that you already recognize from this little walk or better, climbing on the Tree of News which, for now, has been a map in order to situate, compare, get details, and sustain the feeling for a problematic situation for doing research in our country. It is not my responsibility here to say that this is a valid problematic situation and that X or Y action must be done. The only objective I had here was to put attention to details, to traits, to follow a pattern, in order to associate, by means of a Tree, and by means of travel with comments, some textual specimens, my News, and quite different topics that help to construct a network of sense with the shape of Bad News.

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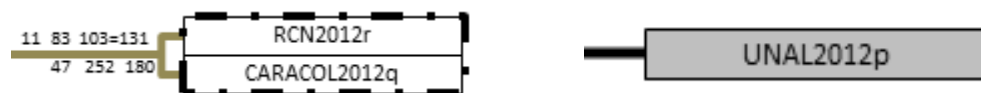
**NOTE:** Did you notice that there is one thing is not where it is supposed to be? If you were a careful reader as you are supposed to be before arriving to this lines you should have already done a question like this: “Mmmm, what about the *white group* with two News (or specimens as author says) at the top of the tree of News? Did he forget to write about them because he was so hurry for finishing this tortuous chapter that he -conscious or not- omit them?” Now you know the answer. This white group is the link with the next chapter and part of its inspiration. I promise, the way of narrating things will change or, the way of doing analysis.

...

**Mulkay:** Sure!

## 5. The Z Event

### 5.1. *Sacrificata* (The white)



In May 2012, a routine field trip was carried out: some biology undergraduates<sup>185</sup> that were taking the subject *Animal Taxonomy* at the UNAL, led by five professors from different specialities of zoology, travelled to Zapatoca (Santander), a little town close to the National Natural Park Yariguíes<sup>186</sup>. Their goals were learning more about the scientific sampling techniques, about the local biodiversity and collecting some specimens for the biological collection of ICN. This sample collection is very common in this kind of academic spaces. This kind of field trip is performed almost all semesters and it can be conceived as an introduction to basic science and practices for biodiversity studies. The zoo expert team was composed by: John Lynch, the herpetologist; José Mujica, the ichthyologist; Hugo López, the mammalogist; Gary Styles, the ornithologist; and, Gonzalo Andrade, the entomologist<sup>187</sup>. Five professors. Five groups of animals. Each professor, a representative of a clade of the Tree of Life. Styles and Lynch are North-Americans but decided to establish their scientific bases –and homes– permanently in Colombia, in part, because of their scientific interests. Their animals of interest are abundant in our country and that made them settle in the North of South America. From the centre to the periphery that now constituted the centre of their research.

<sup>185</sup> Trait 11 - Estudiantes de biología

<sup>186</sup> Trait 252 - PNN Yariguíes /Zapatoca Santander

<sup>187</sup> Who is Gonzalo Andrade? Based on News categorizations we can say he is a professor of the UNAL, specifically at the Natural Science Institute, he is an adviser of Vicerrectoría de investigación, he is Vicerrector (UNAL, 2012c), he is the former director of *Ecosistemas del Ministerio de Medio Ambiente* (UNAL, 2012d), *ex-ministro de medio ambiente* (UNAL, 2012e). In fact this last membership is not sustained by any other source of information. Andrade also wrote two of the articles consider so we can call him a journalist, entomologist, and he participated in decree making so he is a policymaker and, of course, an expert. Gonzalo's plurality can be the signature of incoherence among journal articles, a signature of his different roles in different times; a signature of different roles in different situations. Without desiring to write a history centered on a hero, Andrade's redundancy in News, Pictures, Interviews, make him an obligatory passage point for writing this story about collecting and regulation.

Once in the field, students and professors collected specimens, following them, in places closed to the National Natural Park Yariguíes because if they wanted to collect them inside the National Park they would need a special permission for that<sup>188</sup>. However, almost ending this field job of routine, a strange event happened, in fact, something without precedent<sup>189</sup> in the historical record of this collecting-work with educational purposes in our country: one person reported the biologists to the police for collecting. What were the reasons why this person made such a report? As I will illustrate different textual specimens (news) registered this event in different ways and these ways suggest bias among journalists. This indicates that journalists –as scientists– are not as neutral as their ethos is believed to make them act.

### 5.1.1. Three Specimens, Two Versions

Let us consider first an article published by Caracol Radio (2012q) named “*Comisión de biólogos de la Universidad Nacional fueron detenidos por sacrificar animales en un parque natural de Santander*”<sup>190</sup>. In this one, the biologists’ opinion is omitted; no comments of scientists, no names, no opinions. However, it is visible the voice of the police commander of Santander, Edgar Nieto<sup>191</sup>, who mentioned that investigations performed in natural parks required permissions, and these permissions were something the UNAL-collecting-team did not have.

Likewise, a citizen that is qualified as an environmentalist leader of the town is mentioned. That is someone who is assumed to rise the flag for environmental protection and who knows about naturalistic affairs. This man was Claudio Beltrán<sup>192</sup> who says that the researchers were detained because they sacrificed 45 birds and mammals, collected in the park, therefore, performed a crime. Caracol2012q voices rise against a practice done by scientists without a required permission.

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<sup>188</sup> A special permission that Professor Lynch said he had. But this permission was just for him, not for the rest of his collecting team.

<sup>189</sup> As Mr X. has said it. But, who is Mr. X?

<sup>190</sup> Trait 180 - Detenidos por Sacrificar sin permiso

<sup>191</sup> Trait 103,131 - Edgar Nieto comandante de la Policía Santander

<sup>192</sup> Architect, journalist and plastic artist, as he mentioned to me by mail.



Almost in an analogous manner, RCN2012r, said it in a short report of 103 words (Headline: *Detienen estudiantes de la Nacional por sacrificar aves en un parque de Santander*). The textual specimen says almost the same information but without quoting anybody. A textual descendant or not, it spreads these bad news for biology: UNAL biologists and students doing collection work are reported and detained (*detenidos*). Though it is not specifically said if they went to jail or not<sup>193</sup>.

On the other hand, if we take a look at the headline presented by the news agency of UNAL2012, *Biólogos de la UN retenidos por investigar*, it is evident the contrast with the headlines of the private media:

- a) *Comisión de **biólogos** de la Universidad Nacional fueron detenidos por sacrificar animales en un parque natural de Santander (CARACOL)*
- b) *Detienen **estudiantes** de la Nacional por sacrificar aves en un parque de Santander (RCN)*
- c) ***Biólogos** de la UN retenidos por investigar (UNAL)*

The three articles are published the same date: 31st of May of 2012, and the headlines reveal a victim or victimizer, depending on the *context*. For a) and c) the biologists are detained (*detenidos*) / retained (*retenidos*); for b) students are detained. In a) and b) it is said that the cause is associated with the action “sacrifice” (*sacrificar*), but in c) the retention (not detention) is for researching (*investigar*). The private textual specimens, CARACOL and RCN, as I mentioned previously, are quite similar, and they just narrate in short texts why these biologists/students from the UNAL were detained. Very differently, we see the textual development of UNAL2012p. In the academic press, the journalist involved does not try to hide its position towards the situation. “*La actual legislación ambiental colombiana trata a los científicos nacionales como delincuentes. En el Parque de los Yariguíes (Santander), biólogos de la UN fueron retenidos por hacer su trabajo de campo*”. Basically, the journalist gave the attention to the environmental legislation, and how this, through invisible hands, treats scientists as criminals. Also, it is said that this retention is associated with a normal practice of biologists: doing their field work. As

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<sup>193</sup> They did not following other News and interviews to five people.

absurd –the suggestion tries to note– as for establishing that a shoemaker must be treated as a criminal for fixing shoes<sup>194</sup>. Other contrasts are evident among the academic v. the private content of texts. In UNAL2012p it is visible the other part of the conflict, that is, the word is given to biologists (no police<sup>195</sup>, no citizens, no natives’ comments on this textual specimen). Among them Gonzalo Andrade tries to delegitimize what other media said about this event.

*“Eso fue una mala información, porque no quedaron personas detenidas y menos se hizo matanza alguna de aves... Hicimos una colecta de ejemplares, preservándolos y llevándolos a la colección del Instituto de Ciencias Naturales y todo es con fines de investigación. Una matanza es cuando se matan por matar los animales y se dejan tirados a la vuelta de la esquina. Nosotros preservamos la fauna con sujeción a las normas internacionales. En la colección contamos con ejemplares colectados por José Celestino Mutis, desde 1765 hasta nuestros días. No creo que Mutis haya tenido que pedir permiso para hacer la Expedición Botánica del Nuevo Reino de Granada”*

For Andrade, “killing” (*matanza*) animals is what is done in places where animals are used for other purposes (hunting or commercial goals). This declaration is interesting because, though hunters (illegal or not) and researchers take the life of living beings, and in fact, as this case indicates, both could be in the frame of illegality (scientists for not having the collecting permission), for Andrade it is very relevant to make the distinction between what is the *purpose* of different actions even if the output is the same one: dead animals. In this sense, we can say that for some collectors, to know that there are many reasons why the life of the living beings must be ended, the important matter is *the purpose of the action*. The end justifies the means. If the mean is “to know”, and better, “to know scientifically”, as it has been evident in other fragments of this paper, then collecting is not only necessary for science but demanded by the society in general. It is in this sense that for scientists, not only for Andrade the word *matanza* seems to be politically inappropriate in order to describe the scientific practice.

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<sup>194</sup> Or a sociologist for writing about social issues.

<sup>195</sup> Trait 83 - Policía/Inspección de Policía

Besides, I want to highlight that these textual specimens are different describing what exactly happened in Santander. For biologists, by means of the UNAL media, the police acted in an uninformed way because following their versions there were not biologists arrested, there were just biological specimens retained. Moreover, Andrade indicates that since old times, naturalists as José Celestino Mutis, have done their work without having any problems –until now–. This is mentioned in order to make an explicit contrast among an old-better-situation and a current-worst-scenario for science. Even more, if collecting practices did not have problems in colonial times, why should they have any in modern times? Exaggerating it: not even in those archaic, primitive times, when Colombia was not Colombia, and this territory was under the rule of Spain, the science had more freedom than it has now under Creole government. Another victimizing tool detected: to point out that another epoch of our own country was in a better position than present. Remember here that other contrasts have been unfolded repeatedly in these textual specimens: foreign v. native; mining v. research; ethnic communities v. scientific community; schools v. universities. And now, Mutis v. Andrade: past v. present.

UNAL 2012p is not a neutral media. The journalist, as many others working for UNAL, are allies of scientists and with their paper productions help them create a problematic situation. The textual specimen is not only used as another media of information about an event but it has the role of a partisan manifesto for scientists. UNAL News seems to be a reaction to what was published in other media, and it tries to give a twirl of understanding about what is on discussion: in UNAL biologists/students become victims (they are not victimizers, they are not sacrificers of animals, they are not criminals); their actions are the result of a bad legislation; their unfair treatment is due to an ignorant social context that does not understand the values of sciences, their contents and their methods.

My intention here is not to determine if one media has more reason than the other, or which of them has a better description of what really happened in Zapatoca. I just want to mention it in order to establish what happened, that is, to establish the *matters of fact*. The role of the communication of knowledge is fundamental to the constitution of facts that seeks for approval by a particular community, as it is said by Shapin (1984) for the case of

the establishment of scientific facts and the role of the narrative of scientific publications. In this case, the media, academic and private, can be considered *literary technologies*; it is means of using rhetorical, textual and performative devices by which the facts –what happened in Santander– are made visible and approved by professors witnesses, students, environmentalists, policemen, whose testimonies are virtual –given that these newspapers are broadcasted via internet– and try to persuade an audience –the readers– about what happened and the causes of the actions of the implicated parties . However, the text and the virtual comments in each journalistic medium are the product of a selection of topics, made by a journalist and which has the effect of promoting the visibility / invisibility of actors and arguments. But that is not breaking news.

However, it is essential in this type of disputes to gather other kind of specimens, not only textual ones<sup>196</sup>, to go to talk to the actors who were in the place, that is, not only "virtual witnesses" –reduced as quotes and traits– who are needed but what I will call "carnal witnesses"<sup>197</sup> are very important too. This, without assuming that their version-of-what-happened is the "real-version"-of-what-happened; their versions are *versions of interest* for a text like this. Their commentaries will allow me to create another textual specimen whose mission is to diversify what other textual specimens –News– by hand of journalists, do not reveal for its shortness and, as UNAL2012p exemplifies, its slant and constrictions<sup>198</sup>.

## 5.2. The Z event: A fictional though not so fictional event

*This is a serious academic study, not a fairy story*  
Mike Mulkay, 1985

The young sociologist of science was in a waiting room. The place: one known Institute of a well-known and respectful Colombian university. He was waiting for a natural science

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<sup>196</sup> Though a textual generation will always be necessary as this thesis exemplifies. I.e. transcriptions.

<sup>197</sup> In contrast to the expression of Steven Shapin (1984) “virtual witnesses”.

<sup>198</sup> And now, in the next section, you will have to deal only with my slant and constrictions.

professor in order to interview him about an event in which he was involved. Young sociologist waiting for collecting, but Professor, his specimen of interest, was delayed. Sometimes real actors are not in the place they are supposed to be. Their geographic coordinates cannot be estimated and even having a GPS their movements are sometimes elusive. Perhaps that is part of its nature as actors.

But collecting processes are not just the result of highly planned actions in which we define previously what to collect, how to do it, where and when. Chance is necessary even to construct order. Sociologists and biologists sometimes collect specimens that just appear in their roads. Passing across the waiting room another specimen appeared, and the young researcher knew he could not let him pass. He catches him. With words and moves. The specimen responded, first, showing mistrust. Second, and surprisingly, guiding the collector to his own habitat, to his own office. Now, the professor, who was the motive for the visit of this institution, will have to wait. Another specimen was in process of being collecting. No doubt, ¡a real Big Bug!

The reason why the young man arrived to some specific habitats to do the collecting process was guided, firstly, by the maps that constituted the news. In fact, he got interested in his research case, first, by reading a journalist article about a change in the decree of the collecting process. The Big Bug that suddenly appeared was a specimen he knew he had to collect in one moment or another because of his involvement in the case. Big Bug, before being a specimen, was a redundant trait in texts he had previously read. His identity, though, will not be revealed while writing his analysis result. Big Bug's identity is hidden because of two reasons: 1) When *he* (oops! You already know his sex!) invited him to his office, his intention was not only to assist a young social researcher. No. He did another thing in their almost one hour interaction: trying to convince the young man to study another case. The sociologist's case was not an attractive case for Big Bug; perhaps because of his own involvement on it; perhaps, because as he said "nobody is going to tell you anything about it"<sup>199</sup>. He talked to the sociologist, almost confessing. Another

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<sup>199</sup> Belief that shown to be incorrect. Some talked without a problem a conceded a verbal permission for using material (with educational or research purposes). There was an interaction with five professors

important reason is “because this case is not closed and there is a juridical process up and running”. Of course, not only a good story was involved but a threat to their own integrity and, of course, nobody wants to go to jail for committing an indiscretion. The sociologist had never known about any case of a biologist in jail for doing collecting work, but, was it possible? Considering Big Bug’s testimony, of course, and some charges were on road. Well, the young sociologist did not want to harm anybody. He decided, then, not to say names. 2) But the young sociologist hid another reason. His reason: while talking to Big Bug, he, secretly, recorded the interaction. He did it without asking Big Bug if he could do it. He collected a known specimen without permission<sup>200</sup>. And in that moment, he felt as a biologist doing his work of collecting, with a research purpose but without the required permission for doing it. A sociologist at risk of going to jail for a thesis?

Before the interaction already mentioned, the young Sociologist, whom we shall call from now on *Pancracio*, had done two interviews before talking to Big Bug. Two of five collected known specimens for the specific case. In fact, one of his interviewees had initially accepted to be involved in his research, that is, he accepted that the material – the recording product of the interview- could be used for educational and research purposes. You know matters of purposes matter. But, in an unexpected turn, the specimen sent an email to Pancracio with an inconvenient content, and by doing it, *Mr. X* gained his pseudonym.

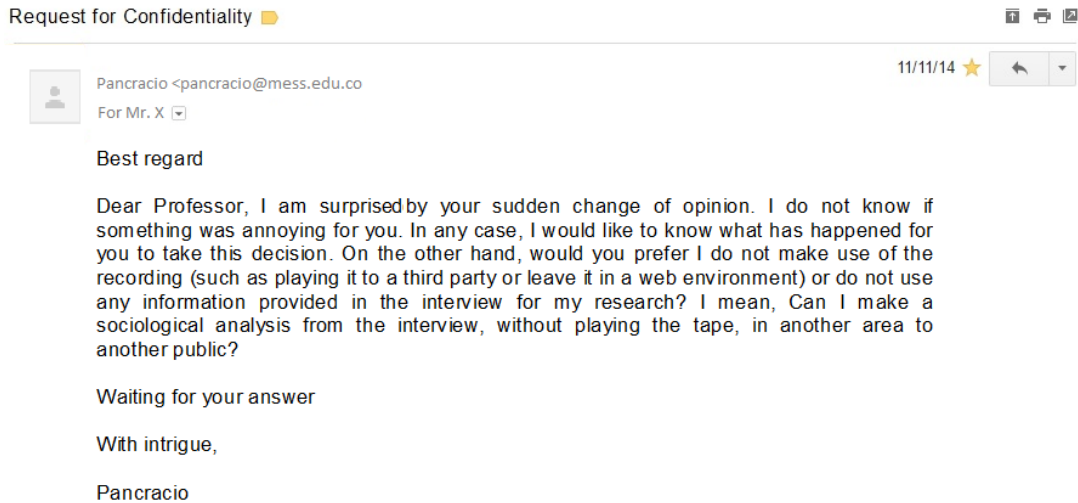



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involved in the event. The shortest interaction was performed with Professor Gandalf. He rejected to talk anything about the event. He just said he “was not allowed for doing it”. But, who is Gandalf?

<sup>200</sup> “Let anyone of you who has not collected without permission be the first to throw a stone” John P. 7:17

Surprised by this answer (two hours after doing the interview), Pancracio sent an email asking for the reasons. Of course, he would try to do something for keeping his research specimen in the collection.



But no response was ever sent. Mr. X decided to remain silent and Pancracio decided to respect his request<sup>201</sup>. Later, in a conversation with Big Bug, he said to Pancracio that the reason why Mr. X reversed his decision was because he had talked to him and, surely, persuaded him to change his mind about the permission. And now bad news for the sociologist, one recording got it furtively (Big Bug caught!) and one recording with an associated was requested not to be revealed (Mr. X escaped?). Besides that, he had collected three other specimens: two respectful professors and one student, and they had no problem with the sociological uses of the material generated. What to do? Should he use only the material that had the approved permission for that? Should he use all the material? Could it be a way for him to use all the material without getting in trouble? He decided to visit his thesis director.

AT THE DIRECTOR'S OFFICE, AFTER TELLING HIM ALL HIS COLLECTING STORY.

**Pancracio:** Then, why should I do?

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<sup>201</sup> I hope the reader understands now the solution the young sociologist gave to Mr. X request.

**Director:** ehmmm... I think that you can use the fact that these people do not want to give you the proper permission. That is material for discussion. You know, what could be their motivations?

**Pancraccio:** Yeah, but... I just wanted to use these valuable recordings. So I could show into my thesis this multiple perspectives. Five opinions are better than three, aren't them?

**Director:** Only if they really have different things to say.

**Pancraccio:** But what should I do, then?

**Director:** ehmmm... I am your director but I am not going to tell you exactly what you should do. Ehmmm... perhaps you should avoid using material you were not allowed to get but... perhaps there is another approximation for collecting information but I must warn you that this is an unconventional way to do it. The advantage is that you do not have to ask for permission.

**Pancraccio:** How could that be possible? Collecting without asking for permission? That's a nice world for research! I think my specimens would love to know your method.

**Director:** But any method has its consequences.

**Pancraccio:** sure, sure... but what is this method about?

**Director:** the traditional way of collecting information for us, sociologists, is by means of getting documents, multimedia files and by doing interviews, as those you have done. Another way is by looking at the situation meanwhile it is unfolding, that is, collecting by observing.

**Pancraccio:** Ooohm like anthropologists living with a tribe for years and things like that.

**Director:** Yes, that is one way of observing. Look. One thing sociologists tend to do is hearing and reading, over and over, its collected material for analysing and putting an order to all the stuff. Of course not all the information collected is used.

**Pancraccio:** Ooohm

**Director:** but when sociologists become participants of some of the interactions, and participate in them as naturally as their actors of interests, and in fact, when they are actors and their actions determined the material collected, then, should they ask for permission for analysing an experience they were involved in actively? Should they ask for using the material they are part of?



**Pancracio:** I guess that if I am a co-generator of the material and I want to use, it would not be necessary to get permission for what I helped to generate. I just can talk about my own experience. I think I have the right of talking of what I heard and observed. In that case, would it be enough with my own permission? Anyway dear director, this is not the case; I could get involved in future controversies about collecting, but not in those that have already happened. I am interested in analysing the Z event, something that really-already-happened, not in future N-events, at least for now. So, I am not really sure what it is your point with all this.

**Director:** Patience, little grasshopper, I promise this method will be useful.

**Pancracio:** What method?

**Director:** First, give me your recording machine

**Pancracio:** What for?

**Director:** ¡Stop asking and giving it to me! Besides, we do not have enough time ¡I have another appointment with another lost young sociologist, in 15 minutes!

**Pancracio:** Okay, just be sure of not hearing file seven... ehh... that is not stuff of a collecting with research purposes.

THE DIRECTOR LOOKS AT THE RECORDING MACHINE WITH A TRANSCENDENTAL GLANCE. HE REMOVES ITS BATTERIES AND REPLACES THEM WITH A SHINY PAIR HE HAD IN A COFFER WITH THE SHAPE OF AN HOURGLASS.

**Pancracio:** The batteries are okay.

**Director:** Yes and not. Your batteries allow you to hear your files with your recording machine whenever you want.

**Pancracio:** I guess

**Director:** But with my batteries you can do even more.

**Pancracio:** Ehhhh... and what is that?

**Director:** These are very special batteries. Look, what I am going to tell you, is going to be difficult to understand but, if you can accept it as a possibility, a real one, then you can use these batteries for your own collecting purposes.

**Pancraccio:** Well, there's nothing to lose. I'm all ears.

**Director:** Okay, here we go: these batteries do not only allow you to "go back" to your interview sessions, they will allow you to go back to the set of interaction of your interest.

**Pancraccio:** What??

**Director:** Look boy, what I am trying to tell you, and of course this will be quite difficult to understand, is that this recording machine, with these special batteries, will allow you to travel on time, and by doing it, you can go directly to your desired Z event, and write an interesting thesis. As the documents I have written. Or, at least, something your jury will approve, I guess.

**Pancraccio:** Okay... eh... Thank you so much dear director for your valuable time. Mmmm... I think I have to go because... I think I have another idea for using this material<sup>202</sup>.

**Director:** Okay, don't believe me. Normal output. I thought you were going to accept, at least as possible, other non-conventional forms of collecting material and doing analysis. But I understand your scepticism. Just do something for yourself. Take this recording machine, locate one of your recording files where it is said something about Z event, press the rewind button and you will see.

**Pancraccio:** Seeing is believing. Interesting suggestion coming from a relativist, what makes more suggestive the experiment. Okay. I accept. I'll do it.

YOUNG SOCIOLOGIST TAKES THE RECORDING MACHINE, WITH A GREAT SMILE ON HIS FACE. PREPARING HIS BODY FOR THE TASK.

**Director:** One suggestion, boy, before you make this move: going to the past will not guarantee fidelity of your observations. In fact, you will have to write them, to collect them and finally, to put them in a text. This is only a partial solution to your dilemma, by being an actor, but it will only work if you take into account different accounts. Not only your own interpretation of the event. Got it? Be dialogic!

**Pancraccio:** Got it! I guess.

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<sup>202</sup> Do you already know how I solved to use the material collected?

**Director:** There you go. And remember: you will have only a few minutes for collecting. Let's make the most of them. If you fail, you could get stagnant in a singularity where you can lose your objectivity because of the space-time deformations falling on a relativistic state where your own mind can express itself in multiple universes and even collapsing as another actor on a parallel reality of social interaction.

**Pancracio:** what? Okay professor, I am not really sure what you meant but the worst thing is not to trying. So, let's do it!

PANCRACIO NODS AND HIS FINGER DOESN'T DOUBT TO PUSH THE BUTTON,  
AND THEN...



Place: Z Town, Data: X day of Y month of 20XY

### 5.2.1. The Incident

I am confused. I feel a little bit disorientated. I guess it always tends to happened when you come back so fast to your primary resources of research. Dizziness. Information here and there. Words from one actor and another. Where am I? Oh yes. I must be in Z Town. It's a nice warm weather mix place with high humidity. What am I supposed to do here? Mmmm. Research? Observe? Collecting material directly meanwhile the Z event unfolds? I am really confused.

**Pancracio (*thinking*):** But I feel different. I feel thinner. My goodness where is my hair? Is this me? Somebody is getting close, a young brunet and small woman. She's cute. She talks to me and I think she is familiar to me but I cannot hear her clearly. Her voice sounds as coming from a bad recording. I think my head is spinning.

**Mabael:** I really liked this field trip –brunet declares– I think I learned the principal bases of collecting, the variables that we have to take into account and all those things. It is a pity that you were ill almost all the trip.

**Pancracio:** Excuse me? How much time I have been in this state?

**Mabael:** You look like you are still in Mars! Well, ten days of field work and you just have been with the group of insects and fishes. You are the only one that could not work with mammals, birds and herpetos. What a pity! So, in order to answer your question you have missed six days of collecting. Hahaha!

**Pancracio (*thinking*):** She talks quite strange and my memories are a mess. I think I am starting to remember but... these cannot be my memories! This is not me!

**Mabael:** Do you know what was interesting for me and you missed it? Hahaha. To know that it is fundamental to know where in the day the organisms appear in order to catch them. I thought that it was enough just to set a trap in any moment of the day and animals would fall in the traps, but they are smarter than I thought. Pay attention because the exam is close!

**Pancracio (*thinking*):** She looks like she is very interested in all these issues. I guess she is trying to teach me what I could not learn for the final exam of the field trip. Wait! I am starting to “remember”. I am in a field trip but, what is it for? Mmmm. Oh yes! Collecting animals. But it is not collecting for collecting, there must be a meaningful purpose. Well, I guess, for the sake of learning practices of collecting, it is strategies for doing it efficiently; to understand factors that can influence a good catch. After catching them, to fix specimens and to preserve them so they can put up with the travel to its final repository; the biological collection of our Respectable University. But why do we want to collect so efficiently? Researching with scientific purpose! Yes! And this *scientific* part of the sentence seems to be of the most important justification. But we are students. We barely distinguish among a coleopteran and a hemipteran. Our purpose is collecting but it must be also learning about these different fauna groups. We are learning and this field trip also has an educational purpose and helps in the mission of completing our inventory of wildlife. Well, at least that’s what the professors said.

**Mabael:** Hey! Look at there! At school! Something is happening. Come on!

**Pancracio (*thinking*):** We go to a school in Z Town. This place was established as the base camp for students, the place for resting and sharing among partners. Yes, I am recovering my lost memories. But, where are the professors? Oh, there! I can see one of

them. It is Professor Batman, the expert on mammals, especially Chiroptera. And where are the other professors? I remember there were four more.

**Mabael:** They are in the hotel —Mabael seems to read my mind— We have to warn them! There is a strange man that came saying he is from the Regulatory Regional Entity RRE and accusing us of collecting birds without permission. But Carlos and Arturo say that he has not even shown a credential. He did not even say ‘Hi’. Such a rude man!

**Pancracio:** Did not even say his name? That’s an expected revelation when two or more strangers meet for first time.

**Mabael:** Well, yes... he said his name, Claudio Rooster, but he did not certified he belongs to the RRE.

**Pancracio (thinking):** I think I can identify him among the group of students. I think there is also a woman with him. His appearance does not transmit gentleness —long hair, long beard, fair skin— and students faces are not the friendliest. He is more than 50 years old, perhaps even more than 55.

**Claudio Rooster:** You are the ones who collected illegally! We need to check what you have collected. Let us see what you got on your bottles, bags and refrigerators.

**Batman:** Please, let’s wait for the other professors in order to see the material and the report.

**Pancracio (thinking):** Now we are facing this face-to-face interaction. Professor Batman looks calm. He looks sure that what we have done is right. The other guy, the possible RRE member looks upset. Some students start to discuss but Batman tells them to calm down. Students obey and get apart. Now I see the other professors coming, four of them, everyone representing one fauna group, everyone an expert on a group of living things. Now, I am starting to remember more. In this field trip we, as students, spend two days with a different professor for learning of each taxonomic group and the associate techniques of capture. In these days we can also learn about some ecological aspects of the groups, their associated environmental problems and even, the most interdisciplinary professors tell us about local uses and cultural meaning of some of our collected specimens. After knowing a little bit about five groups of fauna, there is one day dedicated for examination and sometimes free work, or we spend time in developing a small project for the subject of Animal Taxonomy, with a group of particular interest. In every field trip,

it is designated a coordinator, a professor in charge of logistics of field trip and controlling the economic aspect of the trip. In this case, the role was assumed by a good manager: Professor Big Bug. With him, there were four professors: Gandalf, Grinch, Mr. X, and, the already mentioned Batman. The Biology League! All these professors had been in many academic trips like this one before. Every year or every semester the place for the journey is changed in order to collect in different places and to catch more diversity as the territory changes. Of course, every Batman has an associated Robin. Every professor chooses a student, generally one with postgraduate education, mini-specialists in their groups. These are monitors that help professor in all the activities performed in the field trip and in the processes coming after the trip. In this case, there were six of them because professor Grinch had two to himself.

**Big Bug:** Good morning, I am professor Big Bug and coordinator of this field trip, what's going on here?

**Pancraccio (thinking):** Professors are now on the habitat of controversy and starting to become part of it. They are unsettled because of the unexpected intromission. In fact, they had been welcomed for other members of the community like the Mayor, the priest, and, also, a native and old student of the Respectable University who invited them to have breakfast. Even, the Z Radio Station had invited them to share their experiences and their knowledge. Previous interactions were taken as positive, because they implied an acknowledgement and interest for the work done, but this interaction was another thing. This was an accusation. Who was the accuser?

**Big Bug:** Who are you?

**Claudio Rooster:** Claudio Rooster. I am a journalist.

**Grinch:** Who are you?

**Claudio Rooster:** I am a citizen

**Mr. X:** Who are you?

**Claudio Rooster:** I am an environmentalist.

**Mabael:** And he has already identified himself as a RRE member!

**Pancraccio (thinking):** Multiple ontologies detected? It's very strange, the same question about his identity to the same person performed by different actors in the same set of face-to-face interaction. I think my head is still spiralling! Well, I guess it doesn't matter if he is

a genuine member to multiple categories what it is evident is that he has been located as an influential man and an uncomfortable presence for the normal trajectory of a field trip of this nature. Why am I starting to think in this way? Now, I think I remember this multiple man from another place. Yesterday professors gave a talk to the community in order to share their experiences and their purposes. They thought this was a good idea in order to explain to the community why some people from the Respectable University were journeying from one side to the other in their territory. Besides, professor Big Bug made a presentation to Z students in order to explain the possibilities and processes that they can do if they want to study at the Respectable University. I think he was present there but, why did he decide to report us?

**Claudio Rooster:** After knowing that one of your “wise” professors collected many birds, some of them even in danger of extinction, I asked myself: Collection or slaughter? So, I decided to come here with the police inspector in order to demand your permission for collecting. Where is it?

The accusation is read and revealed: it is for collecting birds without a permission given by the Ministry of the Environment. It ignores all the other groups collected here, but birds. For the denouncer the researchers and students had collected too many and without the permission required. Professor Gandalf, the ornithologist, is shocked. No words come from him.

**Claudio Rooster:** *Voilà*, you don’t have it! You have violated the law! You, scholars, should set an example. You *ecocides!* Don’t you understand that twenty birds are important for the environment? What is it the goal of making them mummified corpses? That’s not Science but Scientism!

Professors and denouncers now go to the place where the collections were kept, the police members check where the birds are retained. Finally, professors have to hand over the material, the journalist/citizen/environmentalist/RRE member leaves the place and everybody starts to comment about this incident.

**Batman:** In my opinion, dear colleagues, we cannot wait until an investigation is made. We have to come back with the rest of specimens and with our students to Bogotham City. The best thing is to go now. Let’s leave the specimens and avoid promoting conflicts among the people of the town. Let’s leave the material to the police inspector with

preservation specifications until the commission of biologists that comes from the RRE takes the birds.

No better option. So it was done.

**Mabael:** I think professors opted to give the material because the problem was getting bigger.

**One ally citizen:** What a pity! That man is crazy. He is always on trouble. Sorry with you, dear professors!

**Big Bug:** Do not worry, we will recover the specimens. This has happened because of gossips and misunderstandings. —He is quite calm—.

**Mabael:** If he says so —Mabael confesses to me— I believe him. Professor Big Bug is not only a good entomologist, he is also the person who knows more about legislation in the Institute of Natural Facts. But I still do not understand why this happened, we were already known in this little town. For me there is not a valid reason for the report because this person did not even identified himself. To him we were just collecting too many and without permission. What a bad thing!

**Pancraccio:** Now, I remember you said that many of you were terrified because many mammals were sacrificed specially bats. Perhaps, 100 specimens you said. Was it unjustifiable for you?

**Mabael:** Well, yes. But we have a scientific purpose. Of course, if I had the power of planning a field trip like this I first choose a place with few vulnerable species, a place that is not easy to get affected by our presence. Close to a natural park or a reserve. I will chose traps that could kill instantly species in order for them not to “suffer”. And, of course, to put a clear limit for collecting animals like mammals, a maximum of ten specimens for species. With insects I would not put many problems. You know, there are not many limitations because they reproduce a lot but it is not the same with vertebrates as birds or mammals. We have to collect but establishing limits, my dear friend.

**Pancraccio (thinking):** Meanwhile, we talk with some students, even questioning that professors had not told us what the procedures or permissions to be taken before the field trip were; a group made up of professors kept talking about what happened.

**Grinch:** This report is supposedly made for “killing birds” but Gandalf breaks free the majority of them. We do not kill for killing. Our end is academic. He and his students



collected just twenty birds or a similar number. Personally, I had my permission. I think many of you have them... right?

**Mr. X:** In my case, many observations are done with the specimens alive. They are used for teaching and then, many things are returned to the river. No doubt all this is an exaggeration. In fact, I almost did not collect anything. Perhaps some individuals that died and it was better that we took them for the collection. Why the authorities accepted the complaint? About this entire legal ambit I, honestly, have no idea.

**Batman:** Look, I believe citizens can report. That's good. Unfortunately, environmentalists and even some conservation biologists are full of principles. Perhaps the message did not arrive to these people and they could not understand very well our practices. It looks like this place has a deep history in environmentalism. And some environmentalists are a little bit extremists.

**Grinch:** In my years as a researcher and collector, I have never witnessed something like this. I always ask for permission to the owner of a territory and that's enough.

**Batman:** Neither I have known of an event like this before. In fact, many people ask me to collect some of the animals that can be in their own houses, like bats and rats. Some women even ask me to collect their husbands! I think what bothered this citizen/environmentalist/member of the RRE/journalist was the killing of birds. I think he really likes them. But the "excuse" that supports the report was the lack of permission for collecting. Anyways, as Big Bug said, let's not worry, specimens must come back because our collection is the best place for them to be. The police or the RRE cannot keep them. They cannot preserve them properly. You'll see!

**Student X:** Why can't this person understand all our purposes, professors?

**Mr. X:** This situation is a confrontation of different ways of looking at life: a scientific way and an environmentalist way. This person is one of these fundamentalist environmentalists. For them, feeling is more important than reason. He considered that what we were doing was bad for his region, when the truth was right the opposite. I am interested in conserving because that's why I studied but people understand all the contrary. The knowledge we produced is more than the damage. Besides, we do not collect but a little of the existent biological populations. It is a pity because we hadn't had a single problem with the community. We had the support of the mayor, the people, even the

priest. But a problem has to rise when someone designates himself as an “environmentalist”. One of those who believes nature is only for contemplating. Pfffff! Besides we are all world experts on our fauna groups. We are not horsing around. We know what we do. What to collect or not. And the information we help to develop can be useful for the region. In fact, regions waste a lot of money funding biodiversity studies with people who have no experience. Because of that, the Z Town invited us to go there. The mayor was interested and we came as guests not as depositors and now, all results in this! This man has the right of expressing what he believes but he also has to respect our work. We have studied. We are researchers. We have been working on this for many years. We are not ghosts.

**Pancraccio:** Professor X, why didn’t you try to convince him? All what you say is persuasive.

**Mr. X:** I do not pretend to talk to him about all these things. You simply cannot. It is like talking about religion with a fanatic. You cannot convince this kind of people about these things. Those are things that you have on your life. It is incredible that now we have to stop what we are doing because someone who calls himself “environmentalist”, says so. But listen very well, boys, not because these people pretend to defend the environment it means that they are right. Today anyone can say ‘Hey, I am an environmentalist’. This is like fundamentalism and in this country, it has been distorted and these environmentalists are stopping us in our research run.

**Pancraccio (thinking):** Don’t people change their beliefs? Isn’t it dogmatic that position about dogmatism? I wonder if it would be possible to change Mr. X’s perception about what collecting is.

**Grinch:** Awful! This citizen doesn’t have any idea either of what a teaching practice is. This has been done since half a century ago. In fact, this was a bad place for collecting, perhaps because it has been altered too much during 400 years. But with my group of students it is enough to collect ten frogs for all. Well, I am conscious that students collect even garbage, nothing worth for the collection. Instead, my monitors and I collect with better purposes. As today, my main interest was with snakes, we had the intention of collecting all that we found. But we just captured two, plus other two already dead that a doctor of the town gave to me...

After a brief and intense interaction, Gandalf and Big Bug separated from the rest of the group saying they had to travel to a close city for doing a procedure in order to let the entire episode clear. What they are going to do there, is obscure for us. The rest of us get ready to depart from Z Town. Everybody is commenting here and there about what happened. We went to our bus and our travel to Bogotham City starts.

**Pancracio:** All this controversy for collecting some vermin!

**Mabael:** Yeah, and I think that collecting is more important than what is collected. Our country already has many specimens you know? I think there are statistical techniques in order to predict where the organisms are. In fact, I believe that with time, collections are not going to be necessary. I think collections are not essential for biologists work.

**Pancracio:** That's an opinion that would be quite interesting for our professors but Mabael, what about all the studies of environmental impact and evolution? Don't they need constant collecting work? You already know things change constantly by means of nature or by means of men and we must measure that changing, don't we?

**Mabael:** Even in studies of conservation and evolution, it is impossible to gather all the diversity and we have to be conscious that nature has a loading capacity. You just can't keep collecting without restriction. Catching all the diversity is an impossible mission. We have to determine what to collect and what not. I insist we already have a lot of material in the biological collections.

**Pancracio:** Well, that's true, but I ruminate about whether the collecting work with scientific purposes is considered within our community as a practice of never ending. That is, as something that will have to be done as long as biology itself exists. Nature always changes, as Heraclito would say, and collecting is one part of the complete and assumed processes of measuring a few points of a dynamic process of change.

While talking among partners, some professors and students keep the conversation about the incident and associated problems. Mr. X seems to be very active in this interaction.

**Mr. X:** Let me tell you a story. I had once a problem with the Negro community in a town in the south of the country. We were in a field trip like this and we were disposed to take some biological samples of a little river. But then, some members of the community told us we could not collect in their ancestral rivers. Okay, they have the right of demanding

that. But honestly, I consider they abused in their use of their rights and especially considering that rivers are of the country. That's what legislation says. But what do we do in those cases? We avoid trouble. We avoid arguing and go other place to collect.

**Student X:** It looks like you would prefer not to collect where these minor communities inhabit.

**Mr. X:** Try to get into places of afro and ethnic communities! You try! You are a stranger in your own territory. I feel that sometimes you can do more things in a foreign country than in your own. They ask you what you are doing there. It's like traveling to a very different place in your own country. You cannot work there because you are not from the community. I ask myself what if they come to the capital and they go to study to a Respectable University and we ask them 'why are you here? what are you doing? who gave you permission to?', that's how I feel, as a real foreigner in my own country. They have the right of keeping their territories but we researchers have the right of researching.

**Pancracio (thinking):** No doubt Mr. X is demanding for a symmetric treatment in some issues with other communities; matters of rights and matters of facts. If they have the right of not being asked or if they are allowed to do some action in places where they are not native, then why scientists should be treated in an apparently different way? Of course, if some ethnic groups go to other places and collect things that are consider important for residents, surely they would impose to these groups some usage limitations.

**Mr X:** There are norms we follow. There are institutions that monitor. There should be no problem with that but these communities have to understand that we do not come to steal their biodiversity nor go asking about the uses of biodiversity or extracting molecules in order to get some financial profit. We just want to know what the species are in their regions. We study biodiversity and its distribution. But for me it is easier to go to the market and buy some species there because if I go to collect organisms in wild places some people will not allow me to. The ministry's guarantee should be enough. They regulate and can check our competence, our trajectory. But do not tell me that even if I have the Ministry's permission, I have to ask other people if I can collect there because they want to protect their ancestral territories. Afro came with Spanish people, ancestral perhaps indigenous but they cannot tell me I am not Colombian. I am Colombian just like them. It is quite convenient to have the indigenous or Afro hat for asking things but what

about peasants? What about their territories? They are also Colombians. Then, there must be consultation to everybody. And the peasants do not treat you the same way. You do not feel as a stranger with them though, they also have the right of being there.

**Pancracio (thinking):** For Professor X there is recognition of the ministry competence about the regulation of their activities but the community's competence in these issues is not accepted. That is, there is an asymmetric treatment in matters of regulation of scientific practices. Interestingly, communities are not considered all the same: peasants are preferred over indigenous communities and these over Negros ethnic groups. Even though for Mr. X all Colombians have the same rights. In fact, there is a legitimate questioning — governmental— and an illegitimate one —the one coming from some minor ethnic groups—. Why am I starting to think in this way?

**Mr. X:** Besides, let us consider one thing that is not quite evident. Behind all this process of consultation there are people who are getting some benefits from all these. What benefits? I am not going to tell you, but where do you think that the lawyers and anthropologists in all the process of consultation are? I think some places of our country are prohibited for us. And this is not done by the communities but some industrious subjects that get profit in taxes. They are not angels. Think about it!

**Pancracio (thinking):** Some kind of hidden agenda is considered to be under the difficulties of the consultation process. This has a cost, and the suggestion of the professor gives us the impression that some actors, different to ethnic members, have some kind of economic benefit.

**Mr. X:** If someone believes in Yahve I am not going to discuss with him. Okay, you believe in that and if that makes you think that you cannot have a blood transfusion, okay. But if I need a transfusion do not tell me I cannot have it.

**Pancracio (thinking):** What about if an indigenous person tells you: if you believe that by doing this research you are going to deliver progress and improved conservation for species by means of killing them, ok I respect that. But if you come here and kill species on my land do not tell me I have to allow it.

**Mr. X:** This is similar to the case of abortion. The priest can think whatever he wants but I am not going to live under his religious beliefs. Same thing with environmentalists. They cannot tell me what I have to do. They see the things under a sentimental point of view. I

have my scientific point of view. I am under judgement of experts, for example, when I send an article to a journal. But I am not going to be judged for something that I know is ideological. Look, I do work that is scientific and of academic training with my students. I have some rules for that. There is a scientific method and all that it implies. There is scientific rigurocity. There is another way to see things. And it is equally valid. But this way is not scientifically rigorous. It is about what you belief, just please, not an imposition. I respect but you should also respect my way of doing things. That's what I think.

An air of indignation surrounded all the interactions on the bus; indignation for an apparent lack of understanding of the practice of collecting. Indignation for hidden interests of some members that are against the interests of the scientific community. Indignation with people who guided by feelings, values but not reason make decisions against the development of biology. Indignation for not understanding that collecting animals is important for the knowledge of the generation. Meanwhile, professors are highlighting similar points in their discourses, one student suddenly interrupts them for giving them bad news from the Capital.

**Student X:** Professors, I called to Bogotham City and one friend just told me that we are on the news! They say that we have been arrested for sacrificing animals in a Natural Park!

**ALL (in chorus):** We were not arrested! We were not sacrificing animals! We were not in a Natural Park!

**Student X:** The News said that following Colonel Igor Grandson, The Respectable University had no permission for collection in the Natural Park.

**Grinch:** We collected in the surroundings of the town but not in the Natural Park. Though, I have a good relationship with the director of Natural Parks and no doubt, they would allow me to do it. People who work on journals say this kind of information for causing a scandal.

**Pancracio:** But in fact, didn't we kill animals?

**Batman:** Careful! When someone tells you that what you are doing is killing then they are discrediting you. By doing this they disown your technical capabilities and professionalism. We were on a teaching practice. We use the expression "scientific collection" instead of "killing" because "killing" has many connotations, and here in

Colombia we think in slaughter like those acts committed by armed groups. Or when we think of these words we associate them to images of dolphins and whales being murdered without mercy; blood everywhere...

**Mr. X:** That's true. All depends on what you call "killing". Someone like Professor Gandalf, a world expert on Birds, working here, on a periphery country, is the one saying what to collect or not, as easy as that. Yeah! We kill! But we have scientific collections! We are on the scientific field. You can give any name to what we do: "killing", "genocide", "birdcide". It really does not matter what the news say, what really matters is that you understand what we do as professors of a Respectable University.

**Pancracio (thinking):** As professor Wine has noticed, many sociological studies considering lay public and experts show that the last ones define public resistances as based on ignorance and irrationality and excluding "good reasons" for their denials to a scientific account<sup>203</sup>. "Killing for killing" is not at all, what they do. A "birdcide" of course isn't what they do. It looks like these words are attributed to the misunderstanding of people, for not understanding the real value and the real reason of their actions. Mabael is trying to tell me something surreptitiously. As a peripheral commenter who confesses to me.

**Mabael:** Before this trip I used to think that some professors collected for collecting but it is not like that. I see now that this has purposes and measures that are taken.

**Pancracio:** Who did you think that collected just for collecting??

**Mabael:** I do not know. What I tell you is a gossip! I do not want to say a name. Maybe I can be arrested. Hahaha!

**Student X:** Hahaha! Do you want to hear something funny? Someone has commented the News saying that he/she disagrees with us having to sacrifice life in order to do research work: "research how to preserve life, not how to remove it".

**Grinch:** Ecocrazies! These are environmentalists who do not want anybody to kill anything. They think that what we already have in our collections was enough. Nonsense!

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<sup>203</sup> Take a Wynne (2004, p. 138)! In the same line Guivan (2011, p. 62) thinks we can associate a deficit model with a governability model of risks and innovations associated to science, in which perceptions of risk among scientists and lay public are due to irrational models of lay people attributed to cognitive bias, in this case "lack of understanding of the need of the collecting practice" and the difficulty to reason according to probabilities, like considering it is very unlikely to impact an ecosystem due to collecting with research purposes.

**Batman:** Besides, we have a criteria for collecting. It is good to respect life, of course. But we need to collect. The real problem, as I said to my students, is collecting and not gathering any kind of information. There are other fields of biology as primatologists in which you do not have to kill but even in these disciplines, sometimes, some specimens have to be sacrificed in order to gather some knowledge.

**Mr. X:** This is similar to what is happening with bullfights. Anyone can agree or not, the important is that no one imposes to others what to do.

**Mabael:** We need to sacrifice to understand the environment but in an ethical and responsible way. In fact, this research work can help humans as in the case of the most popular scientist in Colombia, Dr. Pawstream and his studies about Evilynaria. Though in this case, he has done it in a wrong way because he is sacrificing many monkeys in order to find the vaccine for Evilynaria but not effective results have been found yet. But we biologists have to learn to collect in a responsible way.

**Pancraccio (thinking):** Looks like their technic expertise subordinates their ethic expertise of others members of society. My aunt Shirly, a lawyer, has told me that in some cases where there are scientists involved in a controversy, some people see them, and they also see themselves, as *the best representatives of public moral commitments*. Is this an analogous case?<sup>204</sup>

**Student X:** Wanna hear more? Another person says that we already have enough material and that before going in this field work, we'd better go to the Institute of Natural Facts and study biodiversity there, in order to collect only what it is necessary.

**Grinch:** We already do something like that but field work is for learning field techniques, it cannot be replaced with something else.

**Student X:** Yeah, how could it be?

**Batman:** As biologists on formation, you must understand that when studying biodiversity we must capture variation. We had estimated the towns we have visited in our country and these are quite few, not even ten percent of towns. So, there are many places from which we don't really know anything about their biological composition. Of course, we try to avoid collecting what we already have. I understand than many people do not want to

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<sup>204</sup> My aunt is also sociologist or something like that. Read her in (Jasanoff S., 2011, p. 29).



sacrifice organisms in the name of science progress, even biology students, but if you do not want the subject, well, it is not mandatory! Anyways, we have to teach field techniques. We do not pretend to teach our students how to kill but how to proceed in collecting work.

**Mr. X:** Some people believe that we kill organisms because we feel some kind of pleasure by having a lot of dead animals and not for scientific and educational purposes. Let's imagine you go to a driving school but you are not allowed to touch the cars. Well that's a way of looking at things. And now, some people tell us "teach them to collect but do not collect". We end defending ourselves of something that should not be defended as it should be evident.

**Pancraccio (thinking):** Mr. X interventions remind me that another professor from another institution told me once about all this ecological agenda with a *'crazed ecology' philosophy enforced by the media and absorbed by the government that has replaced effective work programs with bureaucratic 'paper ecology', creating what he calls 'directionless environmental sciences'*. For him soft talk has replaced knowledge and a lack of scientific involvement in research and educational programs has created new myths and opened ground for erroneous concepts<sup>205</sup>.

**Mabael:** Pancraccio, I, nonetheless, can agree with that statement. Do not tell professors! Hahaha The thing is that sometimes, I feel we go adrift in these trips. They say that we have to collect many individuals for population and genetic analysis but I do not really know if this has to be that way. They say that as it is a new place, that we have not visited, then we will collect everything we find. I insist that we should minimize our collecting work.

**Student X:** And finally, it is said that there exists technology in order to stop killing organisms like taking samples of DNA, photographs, videos using GPS, etc.

**Grinch:** Idiots! How you take a sample of DNA without intervening an individual? There are species I just cannot identify by looking at a picture. And just an idiot assumes that Colombian biodiversity is already known.

**Batman:** Well, we do all that but it is supplementary to collecting. It cannot replace the practice.

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<sup>205</sup> Look at: (de la Penha, 1993.) (Cotterill, 1995, p. 187)

**Mr. X:** I cannot take DNA of a fish without removing it from the water. And, GPS's for what? If something is in the river what can the GPS do? These ways of looking show that they do not know how things work in Science.

**Mabael:** One more time, I think I am the black sheep. I agree. We do all these and there are methods for knowing where animals are. We need to know these kinds of alternatives and put limits to collecting, especially for mammals and fish. In fact, something I did not like in this field trip was that we collected but we never established a relationship among what the different groups got. Like an integration of information. This collecting effort could benefit our educational process. I agree, we need to integrate these new technologies. That could also be good for our future as professionals!

**Pancraccio:** Looks like we scientists have many trammels for doing research in our country, don't we?

**Mr. X:** Honestly, with all this I feel helpless. Some people seem to have more influence than we have. You have to show all you have studied and your curriculum in order for someone to believe in your good intentions. Every day is worst. What is paradoxical is that many people need our information, not only us, but when we try to get it then they built a whole number of trammels against you. They should let us research. This is the law country. And they can bother you for anything, the same legislation works for all. With the same screw X but help Y. I hope a new legislation starts to trust scientists. Even in Peru and Ecuador, they are in a better position. They treat researchers better and considering, the high indigenous influence in those countries.

**Grinch:** People believe we have already collected everything. Of course we have collected a lot. I have just described for science 250 species of frogs in this country. We have the biggest collection of herpetology in our country, thousands in our shelves. But we still have to work more in order to know very well our biodiversity status.

**Batman:** Mmmm... I think there are no trammels. I think that News tend to inflate all this. We have been working and going every single semester on a field trip. But it is necessary more understanding of what we do, it is very important. In our country, we manage a double moral: for some things we believe that the animals are victims for other issues, we do not care about them. We, of course, must have a social contract with the relevant

precautions. But the institutions have to implicate seriously in this kind of incidents. Our universities have to help us construct an appropriate environment for doing research.

**Pancracio:** What I do not know well, in this moment is if we have the required permission for doing collecting work as the current normativity asks us.

Many faces look at each other as not understanding the question. But then, the coordinator pronounces strongly.

**Big Bug:** If the government is negotiating with the guerrilla then, they have to negotiate with researchers. Fuck it! If they are forgiving people who killed other people why can't they forgive researchers?

**Pancracio:** Forgiving for what?

**Big Bug:** For collecting without permission! We all do that. Our Respectable University did not process the permission and we all were convinced that it had done it. But in this country the legislation is done upside down. My children, for example, are on preschool if they collect specimens for their grade they will not have any problem but I, the expert on bugs, have to surpass many obstacles in order to collect as the normativity says. I think they will have to be the main researchers of my projects for not having obstacles! Look, in this moment there are processes already on prosecution of scientists that are being investigated for collecting without permission. I know four cases. Not one, not two, not three, but four cases! There is one case of a professor of the University of Paisaland who has been for two years where there is the presence of prosecution. Poor man! There are other cases sanctioned for 14 millions for accessing to genetic resources without a contract. I believe behind all this there are dark interests and some people who do not like other people making reports because I do not think somebody working for a Scientific Regulating Institution has the role of tracking down what we do or we do not.

**Pancracio:** But isn't that an expected function of a regulatory entity? to check if their targets of regulation are doing things the way they are supposed to do?

**Big Bug:** I worked there many years, and they have so many topics on this mad Institution that I do not think there is someone looking if scientists have their permission for doing research or not. In any case, we have to be careful with what has happened in Z Town. The journalists are already researching. I can talk to our Respectable University Journal in order to give the true statement about what happened. They retained our specimens

because of our research labour and the actual legislation treats us simply as criminals. But what I advised to all of you is avoiding talking about this. Because even if there are noble motivations for knowing something about this case, we do not really know if some of our professors could be implicated tomorrow for doing their job. Why are we going to screw the professors? Careful with witch hunt my friends. It looks like scientists hunting season is open. If somebody wants to know the truth about the Z event they could read what our Respectable University News will say. No doubt they are objective and neutral. The personal favour I want to ask to all of you is forgetting this case. Nobody of us is going to give an opinion about this now or never. Not even to other researchers.

**Pancracio:** If they do not have your permission they cannot force you professor.

**Big Bug:** The important matter is not the permission but that people understand why they should not talk about this incident.

And nothing was ever published about this Z event<sup>206</sup>.

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What is this entire Z event about? Journalists, sociologists and even biologists who are asked to tell a story in which they are involved or they are researching —here about a scientific practice and one incident associated to it with an unfortunately output for biologists— have to deal with the task of giving a sequence of events that structures its narrative by mentioning some details, some difficulties, a starting point, and a given direction to what all the event is about. This means that storytellers, scientific or not, have to select information, to choose and order, and to highlight some relevant points so that the narrative can be conceived as meaningful and credible depending on their goal of problematizing a situation, analysing it or reporting it.

The dialogue about this Z event doesn't have, however, the explicit intention of making the reader believe that what it is concerned about it, is an accurate description of what

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<sup>206</sup> And nothing was ever known about Pancracio. We believe he got stuck on a quantum anomaly for traveling on time. He can be real. He can be fictional. Just like the Z event itself.

really happened in a specific place and time in Colombia. Nonetheless, there are explicit intentions —more explicit right now— with this text:

1) The Z event is not just any story. In fact, it was based in some revision of news, documents and five interviews about a R event, that is one that could be qualified as a more Realistic one. This is a clarification in order for the reader to know that this is not literature work. Not because the literary effort is completely absent in the text —for the writer that could be impossible in a more empirical and traditional text—, it is because the performative role of this text given the context, that is, the other sections of it, is to sum up a situation which associates the words “collecting”, “regulating”, and “problems”, and to exemplify that this association is better represented as a dialogue of a controversial situation.

2) Though it is quite common not to say names of informants in ethnographic analysis it is also considered less informative than doing it. Sometimes pseudonyms are used in order to protect the identity of actors (Zlolniski, 2015). In this case, the decision of not simply describing an R event and not revealing the identities, is for being more informative, though it can sound paradoxical if you consider that giving the real names of actors, places and dates is an inevitable action that a good analyst of a *real situation* has to do<sup>207</sup>. Let me explain this tangled point. If I had chosen to describe a Realistic event using the names, the places and the exact words gathered in my interviews, I would not have been able to use some of this material because I did not have the required permission from the actors to do it. Besides, to reveal their identities, as some of them explained to me, could bring negative consequences to their future actions<sup>208</sup>. In that way, as the Z event is based on informative interactions, then now I can use it more freely, and it is more informative than having chosen the description of the R event in an apparent more revealing way.

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<sup>207</sup> No doubt this is something a historian is demanded not to forget. So, this is one point in order to say this is not history work.

<sup>208</sup> And this is not a juridical work or a journalistic one with the purpose to reveal who are the victims and who the victimizers. Who was right and who was not.

3) This chapter can be seen as an answer to the “call to narrative” that Turner (2001) did, when talking about regulation of hormones in Canada. For his case of interest, he decided to write two stories, in order to have a narrative awareness that underwrites political awareness, “and so becomes particularly crucial to the study of regulatory controversies” (Turner, 2001, p. 501). His choices, as mine, of writing in a nonorthodox way to narrate a sociotechnical controversy, have the effect of using different opinions, by means of having not two stories in my case but different characters to show their preferences and arguments implicit in their versions, meanwhile one situation unfolds and becomes problematic.

This dialogue is therefore an exercise of “consciousness of narrative structuring”, following Turner, by means of other ways of describing controversies.

4) This text can also look like a parody of a real situation and in that way, it can be judged less informative, less interesting, and even an inappropriate exaggeration of what could have really happened in a normal situation<sup>209</sup>. Of course this interpretation could be difficult for the acceptance of the text as something useful in an academic ambit. But here the strategy has been conceived as an opportunity to use an “alternative to the conventional, univocal form of sociological analysis” (Mulkay M. , 1985). Following my academic grandfather<sup>210</sup>, analytical forms which use two or more textual voices have the advantage to re-present and display the ever-present possibility of interpretative multiplicity (Mulkay M. , 1985, p. 10).

This multiplicity in fact, can be taken as a signature that we are dealing with different actors, whose arguments and actions go in different directions or similar ones by different means. For example, in our dialogue Mr. X shows himself always as someone who can accept that others have the right for interpreting the facts in a different way than his —as environmentalists or ethnic communities— but that these other interpretations and the legitimate right of having them, are not enough reason —in fact, they are not considered

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<sup>209</sup> In fact, actors for analysing their own situations, tend to form parody of their statements. For example, consider professor Big Bug saying why his little daughters should be the main researchers because following the normativity they can collect without a problem but he can't.

<sup>210</sup> A social study of science gossip: Mike Mulkay is the academic parent of Malcolm Ashmore and Olga Restrepo. Both, professors that have passed on me epigenetic information concerned to this sociological world. The book *The Word and the World* (Mulkay, 1985) is in my personal library for an interesting story. Would you like to know it? I could make a parody of it!

reasons at all— to stop his own actions. Mabaël, on the other hand, agrees, in some instances, with some sentences that are not preferred by professors but at the end, she tends to sign the legitimization of collecting but inputting some limits to the activity.

I firmly believe, as Mulkay suggests that there is a real advantage of performing academic chapters or doing “analytical dialogue” because this “allows more than one voice, and more than one interpretative stance, into the analytical text on an equal footing” (Mulkay M. , 1985, p. 5). The monologue and more traditional form of telling and analysing in academic texts —as this thesis can be classified— can input a constraint to the storyteller-researcher in order to consider these multiple voices that researchers always have to deal with and, in the case of sociological analysts, are demanded to be of strict consideration by constructing a representation of their diversity.

This thesis, in fact, can be conceived as an effort of multiplying information, by means of multiplying styles for talking about a controversy whose nature can be considered irreducibly diverse by itself. That is, if you know your set of interactions are diverse then why not to choose diverse ways of talking about them? Of course, this diversity of actions and interpretations must find a diverse way that could represent, more or less, the possibilities that are already inside them, avoiding constructing other stories whose lack of diversity oversimplifies or deforms completely relevant aspects of the matters of research. And this careful movement and believe while writing, we can call it objectivity. Besides, I have introduced, in this section and in previous ones —as Mulkay did in his book— “textual agents” that have had the role of multiplying interpretations (Pancraccio, Student X, footnote commentators), focusing on other interests, and commenting what the main commenter would not do it in order to avoid to look incoherent, as character and as argumentative.

**Jury Judy:** Such a strange thesis! Let us turn the page in order to find something more like a traditional analysis. If there is an analysis at all! Or at least, to know how this *story about collecting, regulating and social interactions* ends.

## 6. Two



Every single specimen –News, scientific articles, forums- are used for catalysing allies recruitment. An important aspect of today recruitment of allies is the technologies that allow to visible very fast a position without doing a great effort of argumentation. Examples of this are the comments, twits, or images, that can have a lot of support (via *likes* for example) but that do not exhibit a lot of information or details. In fact, today a single phrase or one image can be enough in order to get instant support or rejection. In our textual collection, we first considered the News. Written News. Second, the Z event was based on interviews and other texts. First and second talked about a problematic situation: a scientific community having impediments for developing their research projects by means of their habitual practices. In this story about regulating and collecting, there were other specimens that help to unfold this controversy. Some of them are multimedia devices call videos. Others involved informal conversations on academic events and interactions in academic forums. Let´s take a look at them and how they reveal other actors, places and events of relevance for our case under scrutiny. With the next chapter, we conclude –finally- the configuration of the problematic situation. Remember that old phrase: god and the devil are in the detail.

### 6.1. Two Videos

We live in a world in which the communication via the internet is becoming more and more important. Especially the interactive media as videos, animations, and, more recently, *gifs* travelling by thousands on the web. Some of the News considered in previous sections, in fact, were published in web media, and just some little part, in physical media. The videos, on the other hand, are other vehicles in the explanation of the



problematic situation, and, in fact, the content-information-knowledge revealed a more dichotomist relationship among the journalist and the person being interviewed. In the News written, sometimes it is not clear what the voice of the reporter is and which is the voice of the informant. The way journalists do for delimitating (as we researchers tend to do) what they think of what their actors do is by enclosing a fragment of text in quotation marks or by direct reference when a paragraph says “and this is what Mr Expert thinks”. On the other hand, in the video *every word has a face and every face express more than words*. Of course, this does not mean that the face is more “realistic” in the sense of believing that the information of a video is the best representation of a given interpretation of the informants. But *faces* and *voices* can be considered rhetorical devices that create an association among a discourse and a particular person. The face introduces an element of factuality. “The experts talk”. Let us considered briefly two of these “multimedia specimens” where two actors -two experts-, which have both, in different ways, important roles in our story of regulating scientific practices, express their opinions. Both were already mentioned in previous sections as mere traits of Bad News.

In the first video<sup>211</sup>, titled *Trabas para investigar biodiversidad* (Figure 6-1), the main character is Gabriel Ricardo Nemogá, a lawyer-sociologist who was one of the head leaders in developing an evaluation for considering how serious was the situation concerning research projects that did not have permission for accessing to genetic resources in our country (in a coming section I will focus on one part of his actions and purposes in order to relieve the problematic situation). His studies allow to publics to “see” how big the problem of researching illegally was in the whole country.

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<sup>211</sup> Information extracted from <http://agenciadenoticias.unal.edu.co/detalle/article/trabas-para-investigar-biodiversidad.html>; journalist: Carlos Andrey Patiño; published: 25 of May 2010. The video can be seen in *YouTube* channel of *Unimedios* in <https://www.youtube.com/watch?v=nEdf20FYBFQ>.

**Figure 6-1:** Nemogá's Video. Published at *youtube* by UNAL in which one journalist shows a problematic situation related to the contracts for accessing to genetic resources and research permissions of biodiversity (Published 25 May of 2010). **Left. The journalist:** Carlos Andrey Patiño Guzmán reporting for *Agencia de Noticias UN*. **Right. An expert talks:** Gabriel Ricardo Nemogá, the lawyer and sociologist, and also, as it is mentioned on the interactive label of the video, an expert in legislation about biodiversity. This label is another rhetorical device: associate an appropriate membership (expert), add a specific topic (legislation about biodiversity) and put it a face and a name. As the label is in function of the topic of interest, then, the informant is of high relevance.



The video, after showing a brief institutional introduction which show the text “*Agencia de noticias UN*” (which constitute a way of saying “This is a UNAL product”, and therefore labelling an institutional authorship), we can see the person that starts to talk without presenting himself, that just in the final part -as is used to in this kind of reports- reveals his name, and his evident enrolment as journalist of UNAL. His words are context and presentation: context for the content that the next person to appear – Nemogá- will reveal; presentation of the problematic situation shown as a failed interaction among Academy (UNAL) and Government (MAVT). There is a demand for a formal response from the government to university respecting to a purpose made by academy about an adjustment of the legal regulatory framework for accessing to genetic resources. Then, the main source of the video – the expert- appears. He does not look at the camera. He looks to look directly to the journalist who just listened and in no single moment interrupt or interact meanwhile the video elapses. His intervention starts by expressing a numerical comparison: 34 of 600 projects have a contract for accessing to genetic resources. So, the rest of them are out of the legal framework. These frequent contrasts of numbers produced

by its team PLEBIO<sup>212</sup> and they were used repeatedly in other texts like News, memories of events, and in presentations in order to sustain –numerically- the problem for doing research in Colombia. A *big number* is taken as a systemic signature of a phenomenon. A pattern, a “bad pattern” in this case because no one wants to be in an illegal framework. Interestingly, the expert marks out one ministry (let us suppose it is the Ministry of Environment because it is not mentioned which one) as the entity with the mission of fixing this situation. Though scientists are the ones that have to make the respective procedures, it is the regulatory entity the one that is having a problem and in some way provoking this systemic phenomenon. In the video, there is not a dynamic of conversation, in which one person action is linked to the action of the other. But the video has a structure made of sequences of participation in which there are intercalated the journalist and the informant. As the journalist is not a primary source of information, he -as for me in many instances of this thesis – reproduces or summarises or paraphrases – another source of information. So, the sequence can be seen as a way for multiplying voices, streamlining participation, but with, basically one centralised source of information, in this case, Gabriel Nemogá, the expert. The journalist then, in its second “active” participation, mentions that one purpose is to equate biological resources with genetic resources into a new concept call, “biogenetics resources”.<sup>213</sup> Though it is not clear in the two minutes video – but I will make it clear by considering another textual specimen in the next sections-, Nemogá considers that there is another problem: accessing to biological resources is easier than accessing to genetic resources. Why is this a problem? So, here what is named a problem does not have the enough elements for sustaining it as a problem than any lay person can consider that way without hesitating. It is a problem just because the expert says it is.

Nemogá emphasises also that Biodiversity has to be researched. Even for protecting is necessary to know the biodiversity. But there is another problem: many researchers do not know relevant legislation for their discipline, which can generate “a lack of understanding”

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<sup>212</sup> This group belongs to UNAL, and its branches of research are access to biological resources and its derivatives, public politics and economy, and protection systems of traditional knowledge. For more information: <http://www.plebio.unal.edu.co/index.php/grupo-plebio/quienes-somos>

<sup>213</sup> In one posterior section it will be shown the importance of this equivalence among concepts for reducing procedures, and therefore, minimizing supposedly the number of scientists as being illegal.

about the normativity that regulates their practices, and therefore, committing acts illegally, in some cases, will be an act even of naivety. For ending the video, the journalist -the legitimate finisher- adds that PLEBIO has sent a purpose for MAVT, one year ago (if true, by 2009), but no response has been emitted by the governmental organisation. This absence-of-response in an intended starter of a formal interaction – here a proposal to speed up a procedure – is taken as another problem. In any interaction, face-to-face, as when a conversation at the bar is occurring, or when some texts with content that required something like an “answer” is not promoting an *inter-action*, then, can generate interpretations, with a negative connotation, from part of the transmitter – here PLEBIO from UNAL-. In fact, an absence of an answer can be interpreted as some kind of answer<sup>214</sup>. This answer-no-answer in many interactions can be translated and simplified as signatures of the following scenarios or causal factor for this answer-no-answer: no-interest; no-importance; no-legitimate solicitude; no-worthy; or, less negative, no-arrive to the correct recipient. Of course, this absence-of-answer, in the case in question, can basically imply that the proposal is not completely legitimate, reasonable, or, the proposal is being studied for a long time – almost one year- and the bureaucratic nature of the regulatory entity, has slowed the effective – fast- process of communication for giving a proper answer to the scientific community. The video, then, is also a way from the academy to ask the regulatory entity for an answer due to an apparently failed interaction. The video is a denouncement of a failure in a pretended interaction among the Academy and the Government.

In the second “multimedia specimen” (Figure 6-2) I consider Gonzalo Andrade, one already known character in this controversy, who is interviewed in the framework of the event *Expouniversidad 2011*<sup>215</sup>, an academic event realized in Medellín (Antioquia) from 29 September to 7 October of 2011. In the video –published on the *youtube* channel of UDEA- he relates the problem of getting a contract for accessing to genetic resources with the problem of collecting with research purposes in general. An introduction always is necessary: He first says that scientists need in some occasions to get DNA of any

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<sup>214</sup> I am sorry about the “bad” logic implications of above affirmation.

<sup>215</sup> Video extracted from <https://www.youtube.com/watch?v=N4CfqngGkUM>; publisher: UDEA; published: 21 of November 2011

species, for any purpose, and these genetic material is conceived as a *genetic resource*, that is, what constitutes a natural component of natural entities, become something of interest that can be consider useful for humans. These resources are regulated and associated to a series of texts of international constitution like the Convention on Biological Diversity (related to Rio Meeting in 1992, that promotes the recognition of the country of origin of these resources and promotes a fair distribution of the benefits that can be extracted from them); the Andean Community of Nations built the Decision 391 of 1996 (which regulates contracts for accessing to genetic resources, which implies a negotiation with State about the use and benefits of genetic resources); and national documents like Decree 309 of 2000 (which regulates also the permission for collecting and doing research with biodiversity). For Andrade this normativity, that forces scientists to have research permission, has become a perverse instrument for research development. To exemplify and support this asseveration, Andrade makes -as Nemogá did it in his video- a numerical contrast: 540 projects of research financed by Colciencias in 2008, 96% of them are in an illegal framework<sup>216</sup>. For Andrade this percentage talks about the impossibility of scientific community to get the contract because the time they have to wait in order to obtain the contract, on average, is 3,5 years, which in one way justified this illegal activity. Lack of velocity justifies illegal actions. For Andrade is not sufficient to quote big numbers to exemplify his point. He even says that –even contradicting himself- that “all research activity in Colombia is illegal”. This sentence can be consider an exaggeration because: not all the research activity is biological research; not all biological research uses genetic information; not all biological research that need to use genetic information, is done without the required permissions and contracts –as he exemplifies-; and not all genetic research has been done in 2008 (the year that sustained the quoted cipher). Besides, Andrade also give support to his point by considering the academic and the economic benefits of getting access to these genetic resources. One more time, he quotes an invisible research (information used in News are not normally sustained in a *bibliography* or the like) to affirm that the economic benefits of this kind of activity will overcome the ones

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<sup>216</sup> In fact, if we compared the data presented by Nemogá previously in 2010, we can assume they are referring to the same research data– the same numerical contrast- but one gives the net numbers and the other talks about a percentage. Though one talked about one year and the other of four years, the proportions are quite similar.

obtained by gold, banana, and any other remarkable product of our country. Of course, using genetic resources must be done in a sustainable way (a clarification in order to show another way for economic growth without the ecological bad implications of what other traditional economic activities are associated with). Another exaggeration? Let us not talk about exaggerations but of a way to highlight the possibilities that some scientists believe about the outcomes of the Republic of Science.

**Figure 6-2:** Andrade's Video. *Left.* *Expouniversidad 2011* at Medellín (Antioquia) a place for a dialogue among Science and Industry *pro* innovation. The image of the event and the first image of the video. One of the academic spaces where our actors divulge their problems and possible solutions. *Right.* Other expert talks: Gonzalo Andrade, the biologist and adviser of UNAL Research Vice-rectory (in that moment of history).



The mentioned legal framework then is situated as the direct cause that scientists preferred to do illegal actions in order to proceed with their projects. Though the only person in the video is Gonzalo Andrade, his intervention is not a *continuum*: it is evident that his interventions are “sections” arranged by someone (the editor?), and, every section can be the answer to a specific question of someone you cannot see or identified, that is, a hidden journalist that has structure actor participation in a specific way to bring a short video with a coherent topic. Of course, the video (the hidden journalist) does not lose the opportunity to ask, in the last part, to the expert about the event itself – *Expociencias 2011*- and the expert can just say good things about it.

Written News and Multimedia News are of increasing importance in this Millenials Age. However, for the case of the videos revisited<sup>217</sup>, the visualization on *YouTube* in

<sup>217</sup> One possible exception: “*Piden eliminar contratos para ciencia*” (Published 16 February 2012) in <https://www.youtube.com/watch?v=0BYBKQYsP5c> with Gonzalo Andrade starring one more time and summing up some of the already mention problems in many parts of this text. 1270 visualization at 22/10/2012. And that is a good number for *Unimedios* Channel! But if we still compare this cipher with other videos from the same channel we cannot consider it popular at all.

more than six years of being published “Nemogá’s video” got only 237 visualizations; on the other hand “Andrade’s video” has only 80 visualisations in five years. Of course, these are not videos of Nemoga and Andrade. These are videos of UNAL with two experts as main characters. As they are the main figures of them, they -the videos- become vehicles of them -the experts- and of course, of their perspectives –of both-. An opportunity for experts and their problems to travel around the world. With Newspaper is more complicated to estimate the amplitude of its distribution. But the rational assumption we can get is that, as these News –in videos and in texts – of our case, are mainly published by universities, therefore, its scope will be concentrated to members of their own communities<sup>218</sup> which will constitute the main part of its consumers. In fact, the majority of these News and videos have no commentaries or public responses in the spaces built in virtual platforms for that<sup>219</sup>. So, in order to get more impact, scientific community has to use other “habitats”, and textual specimens, in order to involve, and inform, more actively the “other part” of their problematic situation, that is, the people inside the government.

News are passive. They are high structured. Even though News consider many actors – by quoting or making questions to them – they, in practical terms, can be considered short monologues exposing a problem. But if one collective desires an effective change in a regulatory process then the monologues must become dialogues, and dialogues imply more sophisticated interactions with people that really think different to you, and, whose responses, cannot be structured or arranged quite easily. Of course, for promoting an interaction, it is of importance to construct manifestations directed in not ambiguous manner, so, the recipients can conceive themselves as *recipients* of a message and, as possible transmitters of other ones. Let us consider other two different textual specimens of a set that also inhabit -and move through different frontiers- in this controversy, arriving directly at the heart of government.

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<sup>218</sup> Let us remember that in the case of material published on *YouTube*, 27 visualisations do not mean that 27 different people have seen the video; the virtual platform just registered how many times the video is “played”, and not even if it is finished. That is why these numbers displayed by our own videos cannot be considered to having a big impact in the media.

<sup>219</sup> The exception being one of the News considered in the previous section published 31 of May of 2012 by UNAL about the supposed biologists arrested by doing research. This News has more than forty commentaries, very likely, of many students of Biology involved in this event. But, the majority of the publications have on average zero comments.

## 6.2. Two Letters

One formal way and therefore a quite expectable way for communicating among institutions are based on sending a text with the next characteristics: data, city/place, remitter (and its affiliations and signatures), receiver (and its affiliations), content (little discourse) and, normally, one phrase for promoting a response. The key elements of this kind of textual specimens are the ones that generate a tripartite association prefiguring a future interaction: one-remitter/one-issue-of-special-concern/one-receiver-and-expected-responder. A letter is not a conversation and not an interaction. As a product –not as a process- it can be conceived as another monologue. But, different to the News and videos we have been considering, they are directed frequently to a particular person, and its content, quite often it is a suggestion for promoting a particular response. Of course, this response cannot be as fast as when we interact in other media –as *WhatsApp* or a more traditional conversation face-to-face- but, when you are the first to send an e-mail or a physical letter, and if you expect to receive a response, you want it as fast as possible given the particular circumstances. If this answer is considered to arrive “too late”, the feeling of failure in the interaction can arise, and many interpretations of this response are constructed. In our first video analysed Gabriel Nemogá exposed a failure in an interaction when he and his team sent a proposal to MAVT. Before that video was constructed by UNAL, Nemogá published two editorials in the journal *Revista Colombiana de Biotecnología*, in June<sup>220</sup> and December<sup>221</sup> of 2006. So, here Nemogá in two successive numbers of a journal decides to dedicate the first pages of both issues -using his freedom as invited author to write about his topic of interest- to a problem for biotechnology development itself. Interestingly, both editorials have a little content relationship with the rest of the content of the journal<sup>222</sup>. But both editorials are highly related among them, and even the last can be conceived, more or less, as a continuation of the first.

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<sup>220</sup> Nemogá, G. *Es responsabilidad de todos resolver el problema de acceso*. Rev. Colomb. Biotecnol. Vol. VIII N° 1 Julio 2006 3-4.

<sup>221</sup> Nemogá, G. *Señor Ministro, ponga usted fin a la ilegalidad en la investigación*. Rev. Colomb. Biotecnol. Vol. VIII N° 2 Diciembre 2006 3-4.

<sup>222</sup> Esoteric topics of biotechnology.



The first editorial (*Es responsabilidad de todos resolver el problema de acceso*) starts releasing of the exclusive responsibility -respecting the issue of accessing genetic resources- to the MAVT. A quite different tone if we compare it with many other specimens consider in posterior years of our case. The cause of the problem is not only on the other side of the yard. The problem involves many technical, political and juridical variables that are out of the entity competence. In fact, the finger points out more: the scientists are also guilty of not knowing about legislation. “Ignorance does not excuse the breach”. Of course, researchers are put as victims of costs and processes. But this document is different in the sense that Nemogá’s suggestion implies that the problematic situation is not only situated on one side of the society but, that there are many factors that have promoted the continuation of the problem. One of these factors is the lack of compromise of universities for generating a good administrative and bureaucratic environment in order their researchers can proceed with the enough internal help of their institutions in their procedures affairs. On the other hand, the legal framework of Andean Decision 391/1996, is not considered the main problem. In fact, it is said that it does not even deserve a change. For Nemogá, to eliminate this convention would imply to establish a new legal regulatory framework in which “biopirates” will get more benefits of exploiting biodiversity without considering their proper distribution to the communities. In fact, this exploitation could be performed by countries, like the United States, which could want to get some benefits using the way of free trade agreements in order to take advantage from tropical biodiversity without recognising the rights of the local communities in the process of exploitation.

Biotechnology has brought an age in which DNA, in its entire variable nature, has increased its potential economic value, therefore, the countries with most biodiversity in the world –as ours- become attractive places to negotiate, now, its genetic resources, or, as Nemogá fears, to stolen these resources. In this process of increasing value of biological specimens, it is clear for Nemogá the economic and political role of scientists that, in some sense, have a responsibility of exploiting without affecting biodiversity or the different cultures that have used them before. Nemogá ends its first editorial by considering that the challenge with a future change in regulation must construct an equilibrium among

promoting-research/defending-sovereignty-by-defending-biological-resources/considering-ethnic-communities-for-fair-distribution-of-possible-benefits. In fact, he, as researcher, as indigenous descendant and as Colombian is defending what constitute his own identity.

This entire topic has a “a more rude second part” that corresponds to the second editorial of 2006 published in the *Biotechnology* journal. The first is inclusive in terms of causation of the problematic situation, but the second is a straightforward solicitude and the title introduces it very well: *Señor Ministro, ponga usted fin a la ilegalidad en la investigación*. The first paragraph of this new editorial contrast significantly with the first paragraph of the one written six months before in the same journal: from considering the multiple factors of the problems for doing research using genetic resources to point one single institutional actor as the principal cause of inefficiency. The problems for doing research in Colombia are economic; due to the lack of human qualified capital; problems for accessing to regions with armed groups; BUT now *institutional inefficiency* appears as one more to add to the list following our invited editor. One more time, MAVT is the principal bad guy in this story. It is signed as having an active role in putting obstacles for doing research and of not hearing the proposals coming from Academy<sup>223</sup>. Governmental incompetence is exemplified by the apparent inefficiency of the State for controlling the phenomena of *biopirateria*, allowing many different actors to access to genetic richness without any kind of regulation. No regulation for some actors and too much regulation for others? From two different sides, respecting regulation of genetic resources, the message is “Our government is inefficient”. Of course, Nemogá manifests that there have been multiple efforts for creating spaces for effective communication among the relevant entities (mainly, universities and MAVT). He quotes, for example, a meeting realised in the context of the *II Congreso de Zoología* in Santa Marta in which the topic of accessing to genetic resources was the topic of one meeting group and in which members of MAVT were invited to hear academy<sup>224</sup>. On the other hand, the editorial is composed of “one

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<sup>223</sup> Nemogá makes reference particularly to the proposal leaded by him in PLEBIO group: "*Propuesta de acceso a recursos genéticos*" Instituto UNIJUS, Facultad de Derecho, Ciencias Políticas y Sociales de la Universidad Nacional de Colombia. 2003. Look at [http://www.plebio.unal.edu.co/proyecto\\_RE\\_acceso.php](http://www.plebio.unal.edu.co/proyecto_RE_acceso.php)

<sup>224</sup> This event was carried out in November of 2006, with the title: *Mesa redonda- la investigación en Colombia, entre la imposibilidad y la biopiratería*. Following the memoirs of the event, there were members of MAVT and experts on the topic. Among them, one of the speakers was Nemogá himself. This event will

letter”, whose authorship is unknown, but had the purpose of recruiting signatures in order to support his content. The editorial is a vehicle for a manifest looking for support. The letter is addressed to Juan Manuel Lozano, in that moment, the minister of environment in Colombia, the main chair on environmental issues in our country.

**Figure 6-3:** Letter to Mr Minister. The letter, as part of an editorial, is one way of calling by means of a scientific publication. Scientific union for a common cause. More people, more pressure for Minister Juan Manuel Lozano.

"Bogotá, 15 de noviembre de 2006

Doctor

Juan Lozano

Ministro de Ambiente, Vivienda y Desarrollo Territorial

Bogotá

Apreciado Señor Ministro,

Nos dirigimos a usted para manifestar nuestra preocupación por la obstaculización que enfrenta actualmente la investigación genética en el país debido a la falta de claridad en la aplicación de la normatividad vigente sobre Acceso a Recursos Genéticos por parte de ese Ministerio. No solo se está retrasando el desarrollo académico, técnico y científico del país, sino que se están bloqueando las escasas pero promisorias iniciativas comerciales para la aplicación de dichas tecnologías. La falta de claridad y agilidad en la aplicación del régimen legal de acceso impiden desarrollar iniciativas que fomenten la creación de empresas, o la solución de problemas de alimentación, salud y medio ambiente, y hacen imposible la generación de beneficios en los que pueda participar el país y las comunidades indígenas y locales. Peor aún, la ineficiencia del régimen vigente antes que prevenir la biopiratería, la está fomentando.

La situación actual es completamente incongruente con el propósito de promover el conocimiento y utilización de la biodiversidad y fortalecer las capacidades técnicas y científicas del país. En la pasada convocatoria de Colciencias varios proyectos de investigación avalados por pares académicos como idóneos y pertinentes no recibieron financiación por la imposibilidad de contar con el permiso de acceso a recursos genéticos. No se justifica que los investigadores debamos invertir tiempo y esfuerzo para preparar propuestas de investigación que luego no se pueden realizar por falta de una gestión oportuna en el MAVDT para resolver solicitudes de acceso. Adicionalmente, la ineficacia de la legislación sobre acceso está impidiendo obtener recursos internacionales para investigación.

La firma de un solo contrato de acceso a recursos genéticos en los diez años de vigencia de la Decisión 391 de 1996, y la duración de los trámites más allá de los términos previstos en la ley, coloca a los investigadores en recursos genéticos y biotecnología en una condición de ilegalidad que contradice la importancia y necesidad de la investigación en Colombia. Aún no se ha entendido que tiene poco valor para el país su excepcional riqueza biológica y genética si no se apoya y fortalece decididamente la investigación para otorgar valor agregado a nuestros recursos biológicos.

Los abajo firmantes reiteramos nuestro malestar por el hecho de que la aplicación (o mejor, la no aplicación) de la norma esté bloqueando la ejecución de proyectos de investigación cuyo objeto de estudio sean los recursos genéticos y sus productos derivados. Con ello se está limitando la creación de conocimiento proveniente de actividades básicas como por ejemplo, la caracterización molecular de diversidad biológica, la detección de plagas y de enfermedades mediante tecnologías de genómica, procesos de selección en programas de fitomejoramiento, entre otras.

Esperamos que el despacho ministerial a su digno cargo se pronuncie prontamente sobre esta materia, pero más importante, que aplique mecanismos que permitan fortalecer e impulsar iniciativas científicas colombianas. Resulta inaceptable que los esfuerzos invertidos en realizar investigación genética en el país nos conduzca a una condición de ilegalidad por ineficacia en los mecanismos administrativos. Como investigadores colombianos tenemos derechos fundamentales al trabajo y a la realización de investigación científica los cuales están reconocidos en la Constitución Política y que el Estado tiene la obligación de garantizar".

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have the goal of not only talking about the permissions for doing research and the access to genetic resources but also to relate this with the free trade agreement and its implications for scientific and economic national development in an apparent situation of lack of competitiveness, in part, for the criticized legal framework of national researchers. Worth noting that *II Congreso Colombiano de Zoología* was performed under the presidency of Gonzalo Andrade. Memoirs are Andrade et al. (2006).

The letter says basically three things: *i)* there is no clarity with the normativity because of MAVT; *ii)* there are slow and expensive procedures because of MAVT; *iii)* there is no development, no money, no inclusion, no knowledge, no work, illegality, biopiracy, plagues because of *i)* and *ii)*. Besides it is said by Nemogá in the editorial that this letter is supported not only by him but by many people (47 researchers especially from UNAL and UMNG) and that many others can join the cause<sup>225</sup>. The editorial is a call for mobilising people and in this case, this will not be the last time where a letter is constructed in order to talk more directly to people, with *high social status* and with key roles in government. They, *the key ones*, can hear academy and catalyse some political actions in order to solve the problematic situation. That was the expectation. Talk to Dad, he can quarrel big brother.

Almost five years after this letter was sent to MAVT -now MADS-, another letter was sent the 22 August of 2012 to a quite important political actor of our varied biodiverse political ecosystem. In this opportunity, the intentional receptor was not simply another minister. After years of supposed unsuccessful process of communication among Academy and Government, another letter is constructed in order to have a bigger impact. Though its content is almost the same in terms of the problematic situation that has been described before, in this case, the letter was signed by 1084 persons<sup>226</sup> and sent to President Juan Manuel Santos. That is, more people supporting the letter and directed much higher in the organigram of the Republic of Colombia. More people talk to the king. If the king hears, ¡that could be great! The signatures of this new letter belong to members of scientific community, which make it a more important letter that if it is signed by another kind of social collective due to the rational status Science and its members have. If so many scientists sign something, its content must have good arguments we can guess.

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<sup>225</sup> If you want to support, please contact plebio\_fdbog@unal.edu.co

<sup>226</sup> Of course, it would be fancy to believe that such a short letter has been created by all the people that sign in it. I suspect his author is Gonzalo Andrade (of course it is not proper to use the first person while writing in a paper that want to show a collective concern). But this is only a suspicious because: he in previous occasions has sent letters to different sectors of MADS talking about the same topic; he also starts to become one of the principal persons to use different resources (e.g. News published in UNAL); he has participated as a quasi-representative of the problematic situation in different instances (e.g. *Expouniversidad 2011*); and, he gave the letter to me.

**Figure 6-4:** Letter to Mr President. This letter was reconstructed based on material given by Gonzalo Andrade because this was cut on pieces on different slides on one of his presentations (the colour is mine).

Agosto 22 de 2012

Doctor

**JUAN MANUEL SANTOS**

Presidente de la República de Colombia

Bogotá D.C.

Respetado Señor Presidente

La Comunidad científica y las instituciones que desarrollan investigación sobre Biodiversidad en el país vemos con mucha preocupación las dificultades que estamos encontrando para poder desarrollar proyectos de investigación sobre la Biodiversidad en Colombia por que es necesario tener un permiso de investigación científica. En caso de que la investigación requiera análisis genético, se necesario obtener un contrato de acceso a recursos genéticos (CARG).

Entre 1997 y 2011 el Ministerio de Ambiente y Desarrollo Sostenible MADS, ha otorgado únicamente 46 CARG. Un análisis en el que se revisaron todos los grupos colombianos categorizados ante Colciencias y que hacen investigación en Biodiversidad, muestra que 565 proyectos de investigación que necesitarían tener un permiso y un contrato de acceso no los tienen, simplemente porque el Ministerio de Ambiente se demora en promedio 3.5 años en otorgarlo.

Por lo anterior, el pasado mes de abril, se propuso al Ministerio que los proyectos de investigación con fines científicos no requieran de un permiso de investigación ni de un CARG y que cuando como resultado del proyecto se obtenga algo con fines comerciales o patentable se debe proceder a informar a MADS para obtener el CARG. Esto fue acogido por la mesa de trabajo que preside el MADS con una variante, que las instituciones para poder acceder a lo anterior, deben estar registradas ante el MADS cumpliendo unos requisitos (tener grupos de investigación categorizados en Colciencias, tener programas institucionales de investigación registrados en el Ministerio, contar con sistema interno de registro y seguimiento de la investigación y las instituciones de educación superior deberán estar acreditadas institucionalmente), las instituciones que no cumplan lo anterior deberán solicitar el respectivo permiso de investigación y/o contrato de acceso. Pero a la fecha no recibimos ninguna respuesta por parte del Ministerio.

Una vez preparada esta carta, se convoco a los investigadores y representantes de instituciones de investigación que realizan proyectos en Biodiversidad en el país. Producto de esta convocatoria se alcanzó el respaldo de 1084 investigadores pertenecientes a 228 instituciones colombianas, 44 independientes y 74 instituciones del exterior que manifestaron su adhesión a la carta vía electrónica. Se adjunta la lista de estas personas, la institución, identificación, ciudad, cargo y ocupación y el nivel de formación, y se conserva en archivo la identificación de su correo electrónico.

Con todo respeto por el Señor Presidente, manifestamos nuestra disposición para exponer en detalle nuestros argumentos y propuesta para que los investigadores en Colombia, uno de las más ricos en Biodiversidad del planeta, podamos seguir adelantando investigación sobre biodiversidad, así que de usted estimarlo conveniente puede fijar una reunión para recibir una comisión de los firmantes.

The letter exposes -one more time- the problem for doing biological research and accessing to genetic resources. It shows some -already known for the reader- cyphers as a symptom of the problem and, by exposing the numbers or supporters makes an effort to

show how-big-the-problem-is. It also purposes a meeting with the president looking for a solution directly with him in order to explain the arguments necessary for enlisting the maximum head of the executive power of the country. Here the logic of this letter is the next: the president Juan Manuel Santos is not going to solve the thing by himself. Perhaps he has no idea what these scientists are talking about. But, he as the big head of the organigram, has political influence to say the proper actors to act fast and *fastness* is always something under issue and desired. If Santos is persuaded and the expected support is achieved in the direction in which scientific community can feel included and satisfied with the possible results, then, the regulation of scientific practices will change.

Unfortunately, neither Andrade nor any of the 1083 signatories of the letter ever met with President Juan Manuel Santos. That was asking too much. The expected response was changed by another letter (and another, and another) directed to Gonzalo Andrade, signed, not by Juan Manuel Santos, but for one of his advisers, Camila Berrocal Guerrero<sup>227</sup>. In this text, it is said that the *1083 letter* has been redirected to Colciencias and ANLA for their respective consideration. Another response came from Presidential Office (*Alta Consejería Presidencial para el Buen Gobierno y la Eficiencia Administrativa*)<sup>228</sup> in which it is said that the letter about research scientific permissions and contracts for accessing to genetic resources will be redirected to MADS and ANLA for their respective consideration. At 17 October of 2012 Colciencias responded<sup>229</sup> to Gonzalo Andrade by redirecting one more time his letter to MADS for his respective consideration. Why all redirected Andrade to MADS? Being simplistic, because MADS is the entity which has the role of taking care of the topics under discussion: the regulation of all these scientific stuff. Finally, the MADS responded at 8 October of 2012<sup>230</sup>. This *response* is signed by Juan Gabriel Uribe, the minister of environment at that moment<sup>231</sup>. Though the document is signed by the minister, it is in fact elaborated -as the document says in the small print-

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<sup>227</sup> OFI12-00098727. Presidencia. Secretaría Privada. República de Colombia. September 11 of 2012.

<sup>228</sup> OFI12-00102909. Presidencia. Alta Consejería Presidencial para el Buen Gobierno y la Eficiencia Administrativa. September 20 of 2012.

<sup>229</sup> No. 20121110111751. Departamento Administrativo de Ciencia, Tecnología e Innovación.

<sup>230</sup> CITE: 8000-E2-410. Ministerio de Ambiente y Desarrollo sostenible. Despacho del Ministro. October 8 of 2012.

<sup>231</sup> In fact, at the moment he was new as the minister and he was *presto* to answer any important solicitude (even if he was not the one that elaborated the letters that he signed, as it was in this case).

by Giovanna Fernández Orjuela, an official of MADS. In this formal response to the request of scientists, in three pages basically says (let us being one more time simplistic): *i)* we care about your concern; *ii)* dialogue and collective construction is important; *iii)* the normativity framework is relevant for future legal constructions; *iv)* concerning research permission is important to consider X, Y and Z normativity; *v)* concerning contracts for accessing to genetics resources is important to consider P, Q, R normativity; *vi)* MADS is waiting for proposals of scientists; *vii)* MADS has designed a specific team to speed up relevant procedures.

**Figure 6-5:** Letters and more letters. An aliquot of texts as responses for Gonzalo Andrade from Governmental entities. From superior left to low right: From Presidency Secretary; from Presidency Office; from Colciencias; from MADS (See Annexes for a sample with a better resolution of them).

The figure displays a collage of official correspondence and legal documents from Colombian government entities. The documents are arranged in a grid-like fashion, showing various levels of government interaction.

- Top Left:** A letter from the Presidency Secretary (Secretaría Privada) to Doctor Gonzalo Andrade, dated September 11, 2012. It references a previous communication and discusses the process of granting research permits.
- Top Middle:** A letter from the Presidency Office (Ala Consejo Presidencial) to Doctor Gonzalo Andrade, dated September 20, 2012. It discusses the process of granting research permits and access to genetic resources (CARG).
- Top Right:** A letter from Colciencias (Departamento Administrativo de Ciencia, Tecnología e Innovación) to Doctor Gonzalo Andrade, dated October 17, 2012. It discusses the process of granting research permits and access to genetic resources.
- Middle Left:** A letter from the Presidency Secretary (Secretaría Privada) to Doctor Andrade, dated September 11, 2012. It discusses the process of granting research permits and access to genetic resources.
- Middle Middle:** A letter from the Presidency Office (Ala Consejo Presidencial) to Doctor Andrade, dated September 20, 2012. It discusses the process of granting research permits and access to genetic resources.
- Middle Right:** A letter from Colciencias (Departamento Administrativo de Ciencia, Tecnología e Innovación) to Doctor Andrade, dated October 17, 2012. It discusses the process of granting research permits and access to genetic resources.
- Bottom Left:** A letter from the Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible) to Doctor Andrade, dated October 8, 2012. It discusses the process of granting research permits and access to genetic resources.
- Bottom Middle:** A letter from the Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible) to Doctor Andrade, dated October 8, 2012. It discusses the process of granting research permits and access to genetic resources.
- Bottom Right:** A letter from the Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible) to Doctor Andrade, dated October 8, 2012. It discusses the process of granting research permits and access to genetic resources.

From all these letters, the only one that has an expected valuable content of interest to scientists (the signed by minister Uribe) is not of interest for Andrade. He is a qualified actor in all the legal framework he, and his colleagues, pretend to change. He knows very well this story, so he is very aware, by his own efforts, what academy has already proposed, in fact, as he will notice directly to the minister himself in a future interaction (See next chapter), the letter he sent to President Santos itself is evidence of the proposals from Academy. Then, we can assume – momentarily- all these exchanges of official letters were conceived by science community as a failure on the interaction. No apparent effective communication was achieved. No regulatory change was performed at that moment.

Many specimens on my textual collection: News, videos, official requests and no apparent change on the Science Horizon. But for scientists was key to involving some key actors in habitats where our scientists habit. Textual vehicles are not enough. If you write News, perhaps someone of her/his interest will read it. If you appear in a video, perhaps someone of her/his interest will watch it. If you write letters directed to very important persons, perhaps –and only perhaps- these very important persons will read and respond as you want. So, in the development of this controversy, there were also organised habitats for promoting the direct interactions among different specimens. Places for face-to-face interaction. In these places, our scientists called people from the government directly to engage in their discussions and to being involved in their agendas. Science's Agenda. They will see, hear and learn from each other in these particular habitats. That was the goal. Some of these habitats were the forums.

### **6.3. Two Forums**

Other texts produced what constituted an alternative framework for showing the problematic situation besides News: academic texts. Their authors have scientific degrees; their editors are the universities; the articles' titles have no special power of attraction with a varied public but can look complex and political neutral. In 2011, for example, Gonzalo



Andrade published an article for the *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales*<sup>232</sup>, about Colombian biodiversity status and its threats. In this article he exposes with tables and diagrams some of the richness of our country in different ecosystems and bringing the reader special attention to the problems like mining and deforestation as some of the main local problems that put in danger our biodiversity. For the effect of what we are discussing, this scientific article, in its final section after talking about biodiversity and its threats, takes advantage to relate this biodiversity problem with the problem of doing research on biodiversity. In fact, Andrade, after exposing the already known problems we have mentioned, declares that Andean Decision must change, especially the concept of *genetic resource*, in order that scientists needing accessing to DNA for their projects do not have the obligation for making a contract for accessing genetic material<sup>233</sup>. One threat for researching on biodiversity becomes also a threat for biodiversity itself.

### 6.3.1. Sad Memoirs

Before some of the News and Videos analysed were produced, one event was realised by an alliance of two important universities of our country. One text is the vestige of that event: Memoirs of a forum that was realised 21 May of 2009, supported by UNAL and UJTL (published and performed spatially by the last one). Its title can be translated like this: *Legal framework and alternatives of application to procedures of research permissions and to access of genetic resources about biodiversity, in areas of ethnic influence. Case studies*<sup>234</sup>. A title whose extension and content is a matter of concern for the persons in charge of installing the event: Beatriz Sánchez Herrera, vice-rector (at that

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<sup>232</sup> Andrade-C., M. G. Estado del conocimiento de la biodiversidad en Colombia y sus amenazas. Consideraciones para fortalecer la interacción ambiente-política. *Rev. Acad. Colomb. Cienc.* 35 (137): 491-507, ISSN 0370-3908

<sup>233</sup> Of the 23 conclusions of this article, one is dedicated to the problematic situation under analysis: “*Las comunidades étnicas desempeñan un papel muy importante en la conservación de zonas significativas de gran biodiversidad y valor cultural, pero si no se cambia el procedimiento de la consulta previa para desarrollar actividades de investigación con fines científicos, esta se puede convertir en un instrumento perverso y llevaría a coadyuvar a la pérdida de biodiversidad ya que en promedio este tipo de procesos en Colombia gasta 3.5 años y mientras no se surta de manera positiva este proceso no es posible la obtención de un permiso de investigación o un contrato de acceso a recurso genético en el territorio nacional*” (Andrade, 2011, p. 505).

<sup>234</sup> *Marco legal y alternativas de aplicación a los trámites de permiso de investigación y acceso a recursos genéticos sobre biodiversidad, en áreas de influencia étnica. Estudios de casos.* 2009. UJTL.

moment in charge of Rector) of UJTL, and Diógenes Campos Romero, Academic vice-rector of the same university. For the first, the title itself is “heavy” but reflects the situation. For the second, its length is proportional to the complexity of the topic. Even the theory of complexity is quoted in order to exemplify the magnitude of the issue of the meeting and with that, its high relevance. Both hosts -as tend to do hosts of these kinds of events- show the importance for Science, for Society, and the need that a change must be done. That’s the role of the introducers: to engage public by saying expected discourses. Then, they frequently disappear. This case was not the exception.

Though many of the academic events that scientists organize are about specific topics of their respective areas of interest, it is not quite odd that inside their esoteric events, some part of the agenda is intended to talk about this “humanistic aspects” of science, like history, philosophy, sociology, art, politics and legislation. Sometimes, scientists even organize events in which they do not talk about frogs, DNA, epigenetics, or fossils but instead, they get together to talk about a concerned topic of their disciplines. “How they are, where they can go, what should be done”. That is the case of the forum realized in UJTL, an event that was performed with the goal of talking about the problems for researching in our country, for talking about the problems for doing genetics instead of talking about the genes by themselves.

The memoirs have a sequence we assume the forum had: first the introduction made by people with important positions of the Host University (Our already mentioned hosts). Second, there a presentation of one important and relevant actor of the Host University. Third, the interventions of people of different dependences of governments. Fourth, scientists from different universities. Following the sequence let us continue with Manuel García Valderrama, Research Director of UJTL. One person in one position that can be conceived as strategic in the sense that this dependence is concerned with the possible problems that researchers have, in fact, these dependences have the role inside universities of promoting research in general. So, it is supposed that they must be aware of the normative and possible problematic procedures. Quite important to consider that research activity is one of the topics the universities are more concerned, especially in times of

accreditation. In the first presentation<sup>235</sup>, Valderrama, after presenting a wider justification of the importance of doing research about biodiversity (he even mentions the classic authors of history of biology, like Aristotle, Darwin and Mendel), he explains how research is the motor for economic development and how to develop biological research can make us more competitive internationally. But this economic competition requires *fastness*, and this is what some procedures, following Valderrama, are not favouring in our Colombian context. Besides, there is the factor that many countries of the north hemisphere have been “ransacking” the genetic richness of African and South-American countries. This stolen genetic capital of course, is estimated to promote the medicine advances and enterprises richness in the areas of pharmaceuticals, agriculture, and even cosmetic products. How to regulate properly without restricting development asks the Research Director? A question without an answer but that has the role for introducing the other interventions on the forum.

After this introductory intervention, representatives of two branches of government appeared on stage. This is the second section of the forum. The first ones are Aleyda Martínez and Adriana Lagos from Direction of Licenses, Procedures and Permission of MAVT<sup>236</sup>. Their role – I do not know their presentation- can be seen as a list formed of more lists. Their topic, all the legal framework for doing research with scientific purposes of biological diversity and accessing to genetic resources and alternatives of application in the cases of areas with presence of communities afro or indigenous. Their role is then, an effort to summarise all the texts of legal content (decrees, international agreements, laws, and the like) that are related to the topic of research. So, every list, and comment on it, constitute this legal framework the authors want to describe in order to establish, the topic of the regulation for doing biological research, as something related to international agreements, like Convention on Biological Diversity (1992), Andean Community Decision 391 (1996), and something with an endogenous legal constraint (*Constitución política, Arts. 70, 79, 80; Decreto-Ley 2811 de 1974; Decreto 1608 de 1978; Ley 29 de 1990; Ley 21 de 1991; Ley 70 de 1993; Ley 99 de 1993; Ley 165 de 1994; Resolución 414 de 1996;*

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<sup>235</sup> Title: *La investigación biológica en Colombia. Encrucijada: Dependencia o Desarrollo.*

<sup>236</sup> *Dirección de Licencias, Trámites y Permisos del Ministerio de Ambiente, Vivienda y Desarrollo Territorial* (Today the name of the entity is *Ministerio de Ambiente y Desarrollo Sostenible*).

*Decreto 730 de 1997; Resolución 620 de 1997; Decreto 1320 de 1998; Decreto 309 de 2000; Resolución 1115 de 2000; Resolución 068 de 2002; Decreto 302 de 2003*). The way they argue-persuade is by mentioning one *legal paper* after another, extracting a relevant issue from it by mentioning a specific article or by means of summarising or quoting the title of the *legal paper*. At the end of this *list of small lists*, their attention focuses on the matter of ethnic rights by giving another framework in which is established the importance of considering the participation of ethnic communities, their veto power, and their role in the fate of projects of research, their derivatives and possible benefits. No paragraph but a diagram is shown as a conclusion or final remark, but no allusion to a change is performed, just, the legal framework that already exists. First government intervention shows a state of the world that constraints research activity and practices in a local and global legal context of action and inaction.

Next presentation: Esperanza Leal and Hernán Alonso Montero from the system of National Parks<sup>237</sup>. Of particular interest for these authors is that one of the problems they have detected, in areas where exists an overlapping of protected areas, like Natural Parks and also presence of ethnic communities, is the lack of interest and prevention from ethnic communities due to their difficulty in expressing their knowledge compared to the scientific one and the little relation they found among scientific purposes and their own problems. The goal here it is to generate interest and consciousness but considering the authority and local knowledge. No place for a simplistic external hegemonic discourse, even if it is a scientific discourse. The situation cannot consider that ethnic communities just have to appropriate what scientists believe it is right for them. In fact, they –Leal and Alonso- do believe that the presence of these communities is good for the goal of conservation of national parks because of their own special management of the territory due to its legal status as a minority group and to their particular worldview or way they relate with nature and administrate the territory. The ethnic communities have their own expertise and their authority is not only legal but also rational. For the authors, it is this recognition of a particular worldview and the generation of an effective “intercultural

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<sup>237</sup> More exactly, *Grupo Estrategias Especiales de Manejo, Dirección Territorial Amazonia-Orinoquia, Unidad Administrativa Especial del Sistema de Parques Nacionales Naturales*.

dialogue” that has generated a successful result in these overlapping territories. Therefore, in this context, for the representatives of Natural Parks –another governmental entity– these ethnic communities have an important role in the conservation of biological resources in our country. Here, these communities are not pointed out as an obstacle for scientific development as we have seen in other texts. For a successful experience, it is of interest for their management plan to include a definition of “common interests” which implies to think in the “*Razón de Ser del Área Protegida*”, that is, to construct with indigenous communities a justification for the importance of these areas, taking into account ecosystems services, cultural aspects and historical topics. Nay, the intervention directs its intention to improve mechanisms for protecting traditional knowledge, increasing ethnic participation for information appropriation, improving interests of communities with other projects, creating strategies for multilevel participation (community, family) and the definition of spaces for decision-making with concerted game rules. All this increases the importance of indigenous communities in their control of the territory; therefore, we can assume that is a way to validate the consultation process that some scientists do not like too much.

For mobilizing effects, the interventions of MAVT and Natural Parks are not in the same direction of the other cases presented in the forum. And this is because in the other interventions we can see some elements for constructing a collective complaint via the successive presentations after governmental ones. These presentations are performed by professors associated mainly to Science Faculties and biodiversity research groups of different universities of Colombia. These are, in order of appearance: Francisco Gutierrez,<sup>238</sup> Gabriel Ricardo Nemogá<sup>239</sup>, Adriana Ortiz, Tatiana Lobo Echeverri, Mauricio Sánchez Saéz<sup>240</sup>, Patricia Chacón, Nelson Toro Perea<sup>241</sup>, Alberto Acosta<sup>242</sup> and, for closing, Andrés Franco Herrera<sup>243</sup>.

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<sup>238</sup> UJTL professor. *Facultad de Ciencias Naturales, Departamento de Biología, Grupo de investigación, modelado y simulación de biosistemas. Conferencia: Análisis normativo y científico de una fallida solicitud de permiso de investigación con acceso a recursos genéticos en recursos pesqueros marinos.*

<sup>239</sup> UNAL professor. Founder of PLEBIO (Research group on Policy and Legislation on Biodiversity, Genetic Resources and Traditional Knowledge).

<sup>240</sup> The last three, professors of Facultad de Ciencias, UNAL Medellín headquarter.

<sup>241</sup> The last two, professor of *Facultad de Ciencias Naturales y Exactas, Universidad del Valle, Grupo de Investigación de Estudios Ecogenéticos y de Biología Molecular.*

The next list is a construction based on these interventions which constitute (as News did in their own style) one way of validating, supporting, exemplifying, arguing, why things are being problematic with the process of collecting with biological research purposes, to accessing to genetic resources and the problems with ethnic communities in the process of consultation.

- 1) Unsatisfactory experiences for asking permissions.
- 2) Research projects are with non-profit intentions (conservation and basic research).
- 3) Non-appropriate arguments from governmental entities or incoherence in the interpretation of normativity (like consultation demand when scientists believe it should not be done).
- 4) Research projects as inoffensive for ethnic communities' culture or development.
- 5) Not doing research impairs biodiversity conservation.
- 6) Difficulties for applying international *legal papers* (like Andean Decision 391/96 for lack of clarity in the internal –local- process of consultation).
- 7) Time/costs/bureaucratic difficulties.
- 8) Importance of research for ethnic own benefice.
- 9) Desisting of doing a research as a reasonable election given the circumstances.
- 10) Lack of clarity in some procedures.
- 11) Institutional inefficiency affects scientific progress.
- 12) Delay in procedures affects methods' implementation, the expiration of information, and even the reputation of scientists with universities and financial entities.
- 13) Consultation process can be taken for some actors as spaces for “doing politics”.
- 14) People of communities involved in process of consultation must be formed in their respective roles in the procedures. Roles are not the adequate in the processes.

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<sup>242</sup> PUJAV professor. Facultad de Ciencias

<sup>243</sup> UJTL professor. *Programa de biología marina, Facultad de Ciencias Naturales, Grupo de investigación dinámica y manejo de ecosistemas marino-costeros.*

- 15) It is necessary to change even the Andean Decision 391/96 in common agreement with other countries in order to erase the “unnecessary” stuff, especially when accessing to genetic resources are with no commercial purposes.
- 16) Doing the correct changes in normativity will diminish that scientists do research without the required permissions (in an illegal framework).

From these set of scientists claiming one change facing a problematic situation, one of them is of my particular interest because he is of particular interest for other actors in this controversy about collecting and regulating and you already know him. Gabriel Ricardo Nemogá, at that moment professor of UNAL, and now working at the University of Winnipeg, where he works as professor of the Master of Arts of Indigenous Governance, is -following his profile at that University- “a descendent of the Muisca Indigenous People of Colombia” that is, he is the only one among the presenters that can be considered to be highly related to a minority ethnic community, besides his membership as an academic. His curriculum is quite diverse:

“He has a PhD in Human Ecology (University of California-Davis), a MA in Socio-Legal Studies (Brunel, UK), a BA in Sociology (National University of Colombia), and a BA in Law (Free University of Colombia). Nemogá has conducted field and community participatory work with Indigenous peoples and organizations in Colombia, the Andean and Amazon region, and Mexico. His research interest covers Biodiversity Law, Protection of Traditional Knowledge Systems, Indigenous education, and Indigenous rights and economic development” (Taken from: <http://www.uwinnipeg.ca/maig/faculty-bios/bio-soto.html>)

His research interests and diverse formation point out him as an expert on the issue of discussion and, he can look even suspicious for working in empowering ethnic communities in our country. In fact, he has published articles alarming about the rights of indigenous people in cases of biological research (see for example, “Biodiversity research and conservation in Colombia (1990–2010): the marginalisation of indigenous peoples’ rights, 2015). However, his results will be used constantly in this controversy for other people to exemplify that there are many problems for doing research in Colombia in part for the consultation process with these marginalised people. His work, PLEBIO’s work, are key in the understanding of the situation, especially of the problems for acquiring

contracts to genetic resources<sup>244</sup>. In the forum, in his presentation named *Contratos marco de acceso a recursos biogénicos*, after a description of the problem for getting a contract for accessing to genetic resources, he develops a strategy in order to handle with the problem, but, as he confesses, without solving it completely. In fact, this presentation can be taken as a summary of the series of actions that his group has been working in the years before 2009 at UNAL. His lecture focuses on one possibility, that for him exists inside the Andean Decision 391/96: the possibility of “setting contracts for accessing to biogenetics resources” (*Contratos marco de acceso a recursos biogénicos*). As I have mentioned in previous sections this *marco* contracts would, at least, make that many projects, that could be classified as belonging to a similar line of research, then, can ask for a contract that could include them all. This would mean fewer procedures for every project.

Nemogá tries to clarify to his public that they cannot configure the problem just as a “bureaucratic problem”. No. For him there are scientific, politics and juridical variables of importance that has to be taken into consideration if this problem wants to be understood as a “country problem”; a problem of sovereignty and real control of natural resources taken into account the national and international legal framework. The problem here is not only about what a legislation says but about what kind of country we want to live in. In the development of his presentation, he starts to quote himself and his team. Their results that have been considered for many of our actors in other textual fragments: just 25 contracts for accessing to genetic resources have been conferred by MAVT of a total of 565 projects registered in Colciencias, therefore, the majority of projects are illegal. A similar situation happens to respect to the acquisition of permission for researching on biodiversity following the publication of Decree 309 of 2000 and the consultation with ethnic communities: in many cases scientists are collecting and working without doing consultation in the situations they must, following the law. Their own

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<sup>244</sup> Consider for example: Nemogá-Soto, G. R., Ávila-Sánchez, L. A., Blanco-Martinez, J. T., Chaparro-Giraldo, A., Jimenez-Ariza, O. F., Lizarazo-Cortes, O. A., et.al. (2010). La investigación sobre biodiversidad en Colombia. Propuestas de ajustes al régimen de acceso a recursos genéticos y productos derivados, y la Decisión Andina 391 de 1996. Bogotá: Universidad Nacional de Colombia and Instituto de Genética; Gomez, D., Nemogá, G. (2007). Ilegalidad de la investigación genética en Colombia. *Pensamiento Jurídico*. Bogotá (Colombia) No. 18: 265-284.



investigations were the ones that help to reveal a wider phenomenon about the investigation in Colombia, showing a systematic behaviour and a problematic situation as a global issue. These “facts” were the ones used repeatedly for informing and structuring “Bad News” and other texts as we have noticed before.

Nemogá qualify the entire situation also as “tragic”, in the sense that some researchers, before doing an election of what or where to collect, have to consider first some *trade-offs*, due to time, the costs and the possible consultation processes involved in a given scientific project. In many cases, the only presence of an ethnic community in the place of research changes previous decisions about *where-to-collect*. “If they are present there, then, the rational decision is not to collect there”. Of course, for Nemogá and others, this kind of variables do not be criteria for doing research and doing collecting work in one particular place. In that sense, ethnic communities determine, in some circumstance, the territories for doing Science. The problem here is not that ethnic communities are an obstacle for research. It is most worrying –for PLEBIO and his leader- that in many of the projects that are postulated in areas of ethnic presence it is not processed the permission for consultation. So, scientists can be in an *illegal framework* because of any of these following situations: *i*) not having research permission for studying biodiversity (as demanded by Decree 309 of 2000); this, in practical terms, can be traduced as not processing a permission with Ministry of Environment for collecting in a specific are of our country; *ii*) not having contract for accessing to genetic resources (as demanded for the same Decree and, being consequent with international agreements as the Nagoya Protocol, the Andean Decision 391 and the Convention on Biological Diversity); *iii*) not doing consultation process with ethnic communities when it is requested or of using its traditional knowledge without permission (the entire process needing to be guided by Ministry of Interior). Three overwhelming obstacles for scientific willingness for doing research and collecting.

For noticing, Nemogá’s analysis considers a conceptual confusion as one factor for scientists for being in illegality. For him, acquiring research permission is easier than acquiring a contract for accessing to genetic resources. But, both permissions referred to,

in a legal framework, to different kind of resources: biological and genetic. But, talking about a biological resource and a genetic resource can be considered as overlapping categories for scientists. For biologists, and any biological-informed-person, both resources can be seen as indistinguishable, then, the confusion arises. So, a researcher can have a permission for doing research in biodiversity, and therefore, believing that they do have access to genetic resources. But, unfortunately, in the legal context -even if the distinction in the academic world is absurd- the word *genetic* and the word *biological* have different procedures and permissions to be awarded. This *overlapping of concepts* can make one researcher considers that having one permission –the easy one to obtain, that is, the permission for researching-, can be enough in order to use its genetic material. Let us exemplify the situation like this: one biologist is interested in studying the evolutionary relationships of one family of crabs in Colombia. Under the legal framework of that moment (Decree 309/2000), that researcher has to process a permission for researching biodiversity due to he/she has to collect crabs from their habitats in order to do his/her project. But, if this scientist wants to construct her/his phylogeny using genetic information, besides he/she must ask for a contract for accessing to genetic resources. Besides, if her/his crabs of interest habit in a Natural Park, a special permission has to be asked to Direction of National Parks. And, if the crabs habit in territories where ethnic communities also habit, then, the scientists must procedure with Ministry of Interior in order to verify it; if that is the case, the researcher would need to start a process of consultation with the respective community. More procedures imply more time, more money, and, of course, dislike of scientists. So, as we have seen in previous sections, there is an effort to problematize all these situations, and, in the solutions, as we will see in the next sections, will imply the modification of other textual specimens (Decrees and resolutions) in order to change this state of the world.

But, where are the alternatives to that particular legal state of the world? Nemogá explains that for the year that was done the forum on UJTL (2009), there were already some proposals in order to facilitate these processes. One of them, in fact, is one of the main objectives of his presentation and it is related with a possibility that he considers exists inside the restrictive international framework of regulation. The possibility of using

“framework contracts for accessing to biogenetic resources”. For Nemogá and collaborators, the rights of ethnic communities supported for international instances like United Nations and, in our country, for NGO’s and the Ministry of Interior, are directed to protect, on one hand, their traditional knowledge, and, on the other, their territories and natural resources. They must be beneficiaries of the processes of exploitation and that is not an issue under discussion. In fact, for giving it importance to this point, Nemogá makes a contrast with the topic of defending authorship in the case of scientific articles. As he assumes reasonably, his main public is going to be constituted by scientists, then, he contrasts the situation of *one* collective –ethnic community- with a normal situation of *your* collective –scientists-, comparing an analogous risk here the danger of not being recognized socially as an author or the legitimate holder of a specific knowledge. Though the way of legitimation and validation is quite different in both situations (indigenous quite oddly published their results or reflections in journals reviewed by pairs or assist to academic congresses), the law recognizes that they are holder of their *traditional knowledge* (though this is another topic of interesting discussion), and therefore, their rights must be protected, as would happen in the case of a scientist whose authorship would be used by an unauthorized actor. On the other hand, Nemogá shows that this protection not only is mandatory but, the distrust of ethnic communities is because there have been situations in which there has been access to genetic resources in areas of indigenous people, there have been an economic benefit from them, but the State has not assured the distribution of these benefits to the ethnic communities. So, they feel there is, in fact, *a lack of protection* of their rights and traditional knowledge. For an effective consultation process, it is not only necessary to consider the ethnic communities but what we can call the *key actors* in their communities, like *sabedores*, *mamos*, or *taitas*, that is, *the traditional authorities* and not just some political leaders, the academic personal or some NGO- members. Their experts are not the ones necessary with political influence or academic degrees but people whose expertise is -if we can call it that way- endogenous to the communities. These key actors are, therefore, important people for negotiating *what-to-protect* and *what-actions-to-allow*, in the case exogenous communities, as science community, have some interests in their resources or traditional knowledge. For these *sabedores* -following our *sabedor* Gabriel Nemogá- protecting the territory, the language

and the culture is indispensable for “conserving, preserving and protecting traditional knowledge and wisdom”.

Besides considering the key actors and the key topics, which involve a proper participation of “marginalised” communities, another factor that influences a good result on the process of consultation is the issue of communication. As we have noticed in previous sections, it is often to point out a *lack of understanding* and the necessity for constructing spaces of dialogue among groups in order to show lay people the importance of scientific practices and the purposes that they are associated with the research projects. But here, professor Nemogá mentions the issue of communication in the contrary way: here the researchers and lawyers are the social groups that are suggested to understand other ways of communicating effectively with other collectives, so, it seems necessary that biologists learn of fields of knowledge -Nemogá suggests- like anthropology in order to improve their communication competencies in processes of intercultural dialogue.

Their proposals, therefore, will focus not on removing the *ethnic-obstacle*, basically, because Nemogá does not construct consultation as an obstacle, but on speeding up the procedures by *reducing* and *centralising*. *Reducing* first conceptually: instead of talking about two different kinds of resources –biological or genetic- we could start to talk about “biogenetic resources”. This is not a trivial change. It has legal implications and their intention is to generate “one procedure” what it was usually done by “two procedures”. Remember our example of the crabs I have explained before. The logic behind this is that if we start to talk about one resource, instead of two, the procedures will be halved. What do you prefer, my dear scientist, to go through one way or two in order to achieve your lovely goal of producing knowledge? But first, we must change some *words* in legal papers that could minimise your given steps!

On the other hand, his interpretation of Article 35 of Andean Decision 391/1996 brings a possibility of interpreting in what situations it should be necessary, or not, a contract for accessing to genetic resources: if the goal is to make an inventory –to establish the biodiversity of a particular place- or doing taxonomy – to establish *what* is there-, by

means of using molecular information, then, as this does not constitute a particular traditional knowledge, then, in these cases the procedure can change. When there are commercial purposes the thing gets complicated, and in that case is mandatory to precede in a regular way: permission -> consultation -> contract for accessing -> using traditional knowledge. The commercial purpose will suppose some potential economic benefit that will have to affect communities. But, there is an extra complexity to the situation: it is not quite clear when a research will have an economic benefit, even, if that is the expected. So, this uncertainty about the possible output of doing science could complex possible changes in normativity. *Uncertainty* always looks to be a problem for regulating and doing research.

Finally, a setting contract (*Contrato marco*) implies that the series of procedures that has to be done individually, now it could be done by collectives if there are established clear lines of research in the institutions. With Decree 309/2000 every single researcher has to do the process or apply for the contract for accessing to genetic resources for every single project. But the possibility purposed –and that is a possibility inside Andean Decision 361/1996- implies that one requirement can cover many projects, having, as professor Nemogá would say, an “umbrella effect”. Here “umbrella” is used as a metaphor to indicate greater coverage, suggesting fewer resources invested by person avoiding a bureaucratic downpour. This possibility also imply more internal regulation from universities who should monitor researchers’ activities, duties and obligations, and even create an *information system* in order to communicate to the State regulatory entity the evolution of the projects and their associated products (for Nemogá this entity must be only one and it must centralise all the procedures<sup>245</sup>). In practical terms, Nemogá and his team are trying to make a proposal without affecting the rights of ethnic communities and that could promote the centralization and reduction of procedures.

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<sup>245</sup> One problem that Nemogá suggests is the fact that many of the applications must pass in different institutions like CARs, urban centres, and other environmental authorities, which multiply the number of actors trying to interpret the same legislation, interpretations that are seldom the same. More actors, more interpretations. More interpretations, more ambiguity and even more incoherence. So, centralising the process look to be another good idea in order to facilitate – and to fasten- these regulatory processes.

Let us now travel on time one more time. UJTL forum was realised in the year 2009. In those years, Nemogá and his team were very active in his role as a denouncer, a proposer and a researcher to support, with numbers and arguments, the entire problematic situation<sup>246</sup>. He not only published in these memoirs but in scientific articles dedicated to the issues of legal procedures, consultation, and research on biodiversity, which it is expected for someone who led a research team on biodiversity politics, legislation, genetic resources and traditional knowledge (PLEBIO). But his leadership in our controversy will only be surpassed by Gonzalo Andrade. The last -as we saw in previous sections- appeared more actively in News and as having important political networks and partners for mobilising resources in order to get more support to the cause. But, Andrade will be one of the main consumers of Nemogá and PLEBIO's textual products. Gonzalo Andrade's year will be 2012, though he had been active years before<sup>247</sup>. In 2012, the controversy would be unfolding in unexpected ways, and finally, a direct participation in the process of policy-making would be achieved. But first, we have to deal with another important habitat for this controversy. The last habitat where a *polite battle* was performed and I -wanting without wanting- was a witness as a young biologist anxious to know something about the problems of my own tribe<sup>248</sup>.

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<sup>246</sup> For example: Gómez, D. & Nemogá, G. (2007). Ilegalidad de la investigación genética en Colombia. *Pensamiento Jurídico*. 18, 265-284; Rojas Díaz, D & Nemogá, G. (2007). Evaluación de la normatividad vigente sobre permisos de investigación científica en diversidad biológica en Colombia. Primer caso: UAESPNN. *Acta Biológica Colombiana*, 12.; Rojas Díaz, D & Nemogá, G. (2010). Desencuentros institucionales sobre la investigación en diversidad genética. *Revista Colombiana de Biotecnología*, 12 (2); Nemogá-Soto, G. R., Ávila-Sánchez, L. A., Blanco-Martinez, J. T., Chaparro-Giraldo, A., Jimenez-Ariza, O. F., Lizarazo-Cortes, O. A., et.al. (2010). La investigación sobre biodiversidad en Colombia. (Research on biodiversity in Colombia). Bogotá: Universidad Nacional de Colombia and Instituto de Genética.

<sup>247</sup> In fact, he was involved in the production of Decree 300 of 2000. One of the "bad textual specimens" in this story. Why was badly constructed if it involved the participation of experts on biodiversity?

<sup>248</sup> And my memory of this habitat, plus some video material and News (UAND, 2012) are the sources of the next section of this textual collection. The naïve ethnographer starts his description. Unfortunately, video material obtained just showed few minutes of the forum (Taken from <http://www.ustream.tv/recorded/25165877>). So, it could not be analysed completely. That is why you will not find many details in the next section. I am sorry. I do not have a good memory.

### 6.3.2. A Habitat for a Polite Battle

When I was young –almost four years ago- I assisted to a forum at *Universidad de los Andes* (UAND) (Bogotá, Colombia) at September 12, 2012. Its name was suggestive: *Opening doors to scientific research in Colombia*<sup>249</sup>. There were celebrities from ministries and from academia, especially biologists. They got together to talk about the problems, initiatives and proposals in matters of legislation of collecting species for academic interests and the problem of genetic access. I didn't go with sociological purposes to that place. I went as a biologist that wanted it to know the *social problems* of my profession (Figure 6-6). You know, it is a duty to go out sometimes of our comfortable *esoteric circle* to see what happen out there, to see what was affecting our practices and goals. I went as part of a non-explicit scientific movement, which wanted to change the policies that caused problems for our scientific practices and noble *scientific developmentalism*<sup>250</sup>. Let me tell you something of what I see, on another *time* on that forum. Trust my words, because I'm a biologist!

**Figure 6-6:** UAND forum. *Left.* Silvia Restrepo, the UAND scientist host on first scene. *Right.* The naïve ethnographer (or young biologist), Juan Pablo González Medina.



<sup>249</sup> Foro “Abriendo puertas para la investigación científica en Colombia: obtención de permisos de investigación, contratos de acceso a recurso genético y colecciones biológicas”

<sup>250</sup> The expression I borrowed from Gómez (2005) concerning his discussion about the uses for science policy purposes of bibliometric information. See, Gómez-Morales, Yuri Jack. (2005). Política científica Colombiana y Bibliometría: Usos. *Nómadas* (22): 241-254.



*First scene: Contextualization.*



A member of the aristocracy of UAND starts the session with the role of host of the show but at the same time as another actor of the play. She is not impartial as the host of the entire situation, she transpires a political... sorry, a *scientific position*. She says Welcome. She is a scientist and also has a noble position in her kingdom: Chairwoman of Biological Sciences Department of Los Andes<sup>251</sup>. Silvia Restrepo, which is her name, is a sympathetic lady, tall and short hair. Though belongs to the scientific aristocracy she does not dressed the way other aristocrats do in such events. Her simplicity and her soft but firm voice call the attention of the audience. Her actions: to say why we are here, and in this way the name of the forum is illustrative: We are here to open the doors to scientific research in Colombia. We are here to take action. She gets “ears” at her disposition because the audience looks to believe that they are not only spectators, they want to be actors, and I confess my own disposition is the same. In fact, the forum is some kind of participative theatre. The audience is expected to be mainly constituted by biologists with some students of natural sciences. They share an identity with the actor on stage and that circumstance mobilises not only arguments against the “bad ones” of the play but also mobilises *feelings*. She gives us some elements of what we are going to hear in the rest of the play and introduces the agenda: first, as usual, the king’s speech; second, “the others”, people from the strange lands of ministries and their proposals for decrees that are important for us; third, the main course, the scientist’s testimony about the current regulatory framework and the development of a sad story of collecting; the last, the discussion. Nice prospect, but no popcorn.

*Second Scene: The King’s Speech.*

Now is time for the words of the king of the land, a formal and frequently boring scene for these kinds of plays: Los Andes rector, Pablo Navas Sanz de Santamaría, saying to the subjects how important is the meeting that bring people of different reigns, two ministries and more than four universities, to his own land: Ministry of Environment and Ministry of

<sup>251</sup> At that moment, now (2016) she is vice-rector of UAND.



Interior, from Politics Republic; UAND, UNAL, PUJAV, UDEA, UJTL and other universities as important territories from Science Republic. Few subjects really look to hear king's speech. A boring performance. Bad beginning, but good for burning time meanwhile the habitat fills its empty alcoves with a scientific audience that use to arrive late even to the most important councils for science's sake. King's intervention is equivalent to "a tree" in a poor stage: a non-important piece of furniture for the storyline; exists on stage but does not really do too much. He is not an actor, he is an *intermediary* would say one friend of mine<sup>252</sup>.

### *Third Scene: The Others and their Regulatory Proposals*

Time for the others: two strange creatures emerge from exoteric lands to the stage. The first is Claudia Rodríguez from MADS. She is close to Biology Reign, with a wide experience in environmental policies. But here, she looks uncomfortable. She knows she is allowed for the first hit so that the academic attack could be more effective. She gives a monologue about the proposal decrees by MADS that involves research permissions, genetic resources contracts and biological collections. Important issues, not only for Biology, but for sectors like Agriculture, Medicine, and, of course, Trade. The audience, and, of course, the actors that are part of the academic Reign are aware and taking note so they will give no chance to improvisation in their own scene of appearance. Their actions are dependent on the others' actions. They are preparing their counterattacks. The monologue is dense. But its content does not mention crucial points for a required change: consultation continue to be necessary; scientific research that uses DNA requires celebrating a contract for accessing to genetic resources; collecting with biological interests, even if they do not have commercial purposes, requires permission with MADS. Everything looks like the previous regulatory framework and scientists' faces do not look satisfied. Thought in Science we are accustomed to strange and abstract languages, the performance of this first stranger show us that we are not the only one that use to express in confusing manners to society; there are other esoteric circles with their own abstractions, formulas, rituals, rules and spells, and in this context some of us are the lay

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<sup>252</sup> Consult Bruno Latour (2009) about the differences of being *intermediaries* and *mediators*. The last, promotes others's actions to change and they can also change. Intermediaries are like copies or simplistic representations that do not motivate nothing but boring.

people. The legal language is the heaviest to decipher, and not quite attractive even for scientists. Even common words can have different interpretations with different legal repercussions if they are not used properly. But in this encounter, it is mandatory to pay attention to details. Because God and Devil are on details. Her speech is about a proposal for collecting biological material that is at dispute. She finishes her act and we give her thanks with some claps. We have to be polite.

When she goes out of the stage, a colossal creature arrives to fill her vacuum. ¡It's a lawyer! He belongs to a race with bad renown in Science Earth. But when John Jairo Morales, from Interior Ministry, begins to talk, and meanwhile he does, he starts to look for me different respecting what tales say these creatures are. Wisely, he defines his boundaries: I'm from this land, I am not only a lawyer; I am a professor at this university, an academic person, from your family branch of the tree of life. Nice move. He is not a barbarian. His second action is talking about the history of laws concerning science policy on permissions for research in Colombia and Latin America. With this lesson, he shows mastery in these odd topics for biologists like me. That can be a little bit intimidating for a community not easily to intimidate. His third move, one a little bit rough, but the main piece of his performance: he talks about the issue of *consultation* with ethnic communities. If scientists want to do research and take samples into a place where habit ethnic communities, they have to do a process of consultation with these communities, and its associated costs and time. Theoretically, if people that are living in an area where a research project is pretended to be done disagree with it because they consider these can be detrimental to a cultural, environmental or economic dimension of their community, then the projects simply cannot be done. And, as our lawyer stresses "Colombian State cannot ignore the minimum vital [rights] of these communities". The creature shows himself as a democrat and that's why he insists on the importance of people participation. But, for some scientists this *Right* is not right. Well, after all, scientist previously have denounced that this consultation process -in part due to the expensive costs that have to set off from Science pockets- represents a barrier to research and development. But the lawyer move on the sly: "the general rule is that they have consultation [in research activities]. We will have to see which would be the exceptionalities [emphasis]" So, this central topic,

consultation, a way for participation, has to be accounted but, he makes out, there is a possible exception for scientific purposes. This is an intelligent performance and he does not doubt to make some distressing comments that help him to make a “jump” to do not explain the hard content of this proposal respecting consultation. “Obviously, for brevity of time, I am not going to explain consultation stages, as this would lead us to another half hour. I know you would be happy for that [laugh from audience] but unfortunately the coordinator does not give me more time. ¡I’m limited on my rights! [More laughs]. Rights have limits... consultation is a fundamental right but has its own limit. Rights have limits”. Do ethnic communities limits starts when ours finishes? The topic does not seem to be as simple as cartography. Territories among interests can be fuzzier.

The lawyer wins the affection of the public. He is no longer just a lawyer; he now looks as an ally. Someone who is willing to promote a change in normativity in order to satisfy, partially, the claims of this special community. He makes us laugh, and at the same time he avoids a boring explanation giving us the glimpse of a *world of rights* where its limits end where *scientific rights* begin. That sounds cute.

**Figure 6-7: Lawyers and Scientists.** *Left.* The Gentle Lawyer, Jairo Morales, and his presentation about the consultation issue. *Right.* Gonzalo Andrade, the main speaker and our favourite hero. On his left hand, we can see many of the principal speakers, ready to act in this polite battle, from left to right: Santiago Madriñan, Jairo Morales, Manuel Rodríguez Becerra, Claudia Rodríguez and Susana Caballero.



*Fourth Scene: Scientists, the Victims*

Not bad until now. But it is time for the scene I really want to hear, perhaps, because I already expect a known but beloved performance. It's time for scientists. In this scene, there is no doubt who embodies a biology community that suffers regulatory unfairness: Professor Susana Caballero, a molecular ecologist of aquatic vertebrates. The publication of a research group describes very well her performance: "Molecular ecology vs. Bureaucracy"<sup>253</sup>. She, with a non-academic narrative, talks about her fights in order to get the precious permission for collecting biological samples. Not because aquatic vertebrates slip away when she and her team try to catch them but because the intricate process for getting the permission to collect. Her words are shocking: "One is left with posttraumatic stress and not wanting to do it again after performing the complete task in order to get an approval for all the required applications for doing research in Colombia. Three years that become a real achievement, but one remains unwilling". I confess, and I'm not the kind of person that moves his heart with anything but after hearing professor Caballero traumas, I felt a mixture of sadness and angry. How was this possible? We scientists wasting our precious time with bureaucracy? Unacceptable! No doubt, this is the most dramatic scene of the entire play. She can make feel indignation to the public, a public that identify with her. She contributes to the tension of the story by illustrating the public with her own experiences of injustice.

But this is an academic play. There cannot be just dramatic performances about personal experiences. That is too subjective. It is needed another performance, with an academic style, and that is precisely what professor Gonzalo Andrade came to offer. He is a scientist but he also was involved in the popularization that revealed the problematic situation in our country. He is a person that lives in *Tran-science republic*, as Alan Weinberg would note, that is a place where Science and Policy intertwined for policymaking. But his character does not look infected by politics: his tone, his face, and, especially, his numbers and graphics render him with powerful persuasion devices to engage allies from both academic and political sides. He quotes Nemogá and even MADS numbers on his slides.

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<sup>253</sup> As published on *Facebook* the same day of forum at iGEM Research Group fanpage ([https://www.facebook.com/colombia.igem?ref=br\\_rs](https://www.facebook.com/colombia.igem?ref=br_rs))

He recapitulates, better than nobody, all the efforts, problems and people involved in the entire problematic situation. Andrade with a neutral attitude –no smiles, no rising voice, no cries- begins to unfold objective and quantitative information in his presentation. He also mentions some cases or sad stories about people trying to research but feeling frustrated for the normativity framework and bureaucratic obstacles. Besides those cases are supported by solid numbers; those sociologists would say those numbers and cases are a mere rhetorical repertoire. A bit of *rhetoric of listing*<sup>254</sup> here a little bit more of the *rhetoric of popularisation* there<sup>255</sup>, to sensitise the audience, as the previous feminine performance had done in her own way with her sad story. Besides, Andrade and others uses the *rhetoric of contrast* masterly: In Colombia is easier to gain a mining title, ninety days on average -a speeding up consequent of the locomotive´s development of current *Santista* government- but for a researcher whose findings can help to conserve species at risk of extinction we waste on average 3,5 years for acquiring permission to collect specimens. Incredible! And here numbers carry feelings and arguments of course. As always, Andrade´s performance is impeccable. He is becoming a science hero because he has shown us in this act that he is not just another scientist that have had problems with collection permission, he has been mobilizing scientists, but also non-scientists and perhaps some non-humans (the biological specimens) in order to promote what now I believe -thanks to him- is a necessary change.

#### *Fifth Scene: Encounter*

The Others gave their options. The scientists showed their sufferings with experiences and numbers. Now is time for the encounter, or what it is called in this kind of plays, time for debate. Unfortunately, there is not blood but pensive faces. No weapons but numbers, cases and laws. No dead people but allies. Everything is too polite. This scene reveals two new actors: the needed moderator for the encounter; and the other actor, or better, actors: *the public* that can finally participate in the play. I belong to them! Let´s better see what happen; let´s be what it is called, I think, an ethnographer, that is something like a naturalist that instead of looking bugs, observes less interesting organisms.

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<sup>254</sup> (Pinch, 1993)

<sup>255</sup> (Fahnestock, 1997)

The moderator is not a pretty face with notable legs. Instead, this role is occupied by “a sacred cow” with a shiny bald head, nothing less than the person who was the first minister of Environment of Colombia, a real living fossil of environmentalism in our country: Manuel Rodríguez Becerra, and now a professor of UAND. He gives up the turn to the others, like Claudia Rodríguez, the lady from MADS. She defines the ministry as a user of the scientific knowledge, an administrator, and not as a scientific knowledge producer. That is the opportunity waited. A person of the public begins to act; a young biologist answers: “How is it possible that MADS takes decisions over something they do not really know about?” No doubt many of the audience took it as a hit for Science. Normativity without knowledge? Policymaking in scientific issues without scientific knowledge? Decisions without knowledge? Makes no sense. The lady has to admit the limited actions of her home: Yes, we only administer, that is why it needs a tight interaction with Academy.

Another ally appears. Morales, the big noble lawyer, receives recommendations from the expert panel and makes some conclusions that finish his initial enrolment: “The research topic has to be handling as a fundamental right” One step closer to scientists recognising research as something as fundamental as life. So, the universities are special places that must have special rights because of their goals, therefore we can reconsider all this stuff about consultation. “The one that doesn’t research, is destined to fail”. For him, the scientific research is an obligation for all professionals if they want to keep alive in the race of academy. This mention, of course, looks like an homage to scientific inquiry and all the practices that feed them, like collecting bugs. For ending his intervention, the lawyer, besides talking about the importance for researching to preserve, to develop, to business, to *bla, bla, bla...* he stays that: “Be sure we [The Interior Ministry] are going to be aware of research topics in order to give it the procedure it deserves, I expedite, and we have already done it”. A firm ally is born at this forum and the “others”, in this mobilisation, are now part of us. It looks alike.

A good intention by part of ministries but, Gonzalo Andrade, our favourite saga hero, is hurt. He exposes that, before this encounter, he and other noble scientists have tried to

convince the MADS to change the relevant decrees. In fact, he says they already have *the* alternatives. “Ideas? Plan A, plan B, plan Z. There are ideas! We would like Ministry embraces some of these proposals... ¡For God’s sake! Give us an answer for solicitudes we are presenting to you from academy”. Though for many of the assistants like me, all this stuff it’s new and even ministries representatives look gentle and willing to collaborate, it looks like the perception of other is different. Of course, different people have lived this controversy in different ways. For Andrade, and some others, in fact, it looks like nothing really new is being discussed in order to improve our regulatory framework of action. It looks like their proposals are not enough. Notably, though that intervention is full of protest and non-conformism, Andrade keeps his neutral attitude. He is unable to increase his voice tone. His face keeps rocky. He enacts as a great hero for science today.

Another short intervention, with, perhaps, a touch of reflexivity, was that of another scientist: the long bear botanist Santiago Madriñan and professor of UAND says: “Science is dynamic, uncertain and unpredictable... and unlimited... and I didn’t want to come back to a privileged situation for scientists”. For him, science is complex, but, perhaps, only perhaps, he thinks that he does not want a technocratic world in charge of science. I still do not digest that aerial comment but it is worth of mention coming from a scientist in a polite battle where problems are frequently situated on the other side of our frontier.

Between interventions, the moderator, must moderate, but in this case he plays as a supporter of Science. The first minister of environment, professor Rodríguez, plays also as an adviser. He, at the last part of the “discussion”, notices a political opportunity, due to the new minister that is at charge. “I believe the new Interior Minister is *workable* in that field because he is an academic, so then, we have to work on politics, scientific gentlemen, [laughs on audience] because of this opportunity window, I think is there”. Only academic people can understand academic issues. If the new minister is an academic person then, obviously, he will understand *the reasons* and the uneasy but political intervention will help to change that stupid normativity. But this comment makes me wonder. At this moment, I realise we are strange people. Why did we laugh because someone insinuates us

to participate in political issues? Are science and policy so incompatible? I begin to suspect that many of the scientists here are politicians that haven't come out of the closet. Maybe I was wrong from the beginning! They are not performing as scientists! They have been always performing as politicians! Even this play is not a scientific one but a *hybrid play*, something that of course is related to scientific stuff but the tactics, the speeches, the performances, the possible personal interests... disgusting!, but in that sense, even the last declaration at the forum is revealing. "I promise today, that we are going to the ministry, in less than a month, to take him the proposal. I can promise because... Diana already told it, Gonzalo already told it... It's ready! So many letters and stuff to take to the ministry". That is the penultimate *political* sentence from our host Silvia Restrepo. A call for action. She is not only a host; she was a master of puppets.

The play ends with a "to-be-continue" and with the host's recognition for the effort of Vivian Bernal, the master's student that organized the forum, that stage for a little polite battle. Some claps for her, but for this story, she was another tree. The forum ends. But the play continues in another set.

Two videos + Two experts + Two forums = that was Chapter Six

Chapter Seven is for Victory!



## 7. Victory

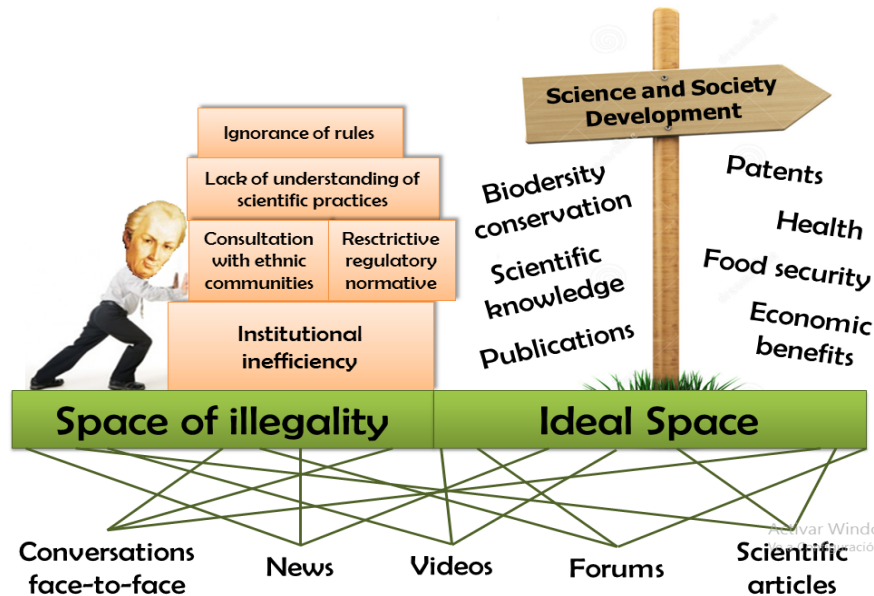


*Los expertos, actuando en lugares invisibles y de acuerdo con reglas de juego poco conocidas, controlan necesariamente gran parte de la forma en que conducimos nuestras vidas; pero los expertos, también, operan con una visión parcial, que abarca únicamente secciones de los sistemas que se les pide ayudar a gobernar.*

*Sheila Jasanoff, 2001, p. 19*

I am bored of writing about problems. No doubt you are also bored about reading about this problematic situation. Surely, you want me to conclude this story and any good story must have a “happy end”, if not, at least a story must have a final sequence that could be classified as an *end*. Well, after writing about so many problems I promise a “happy end”. Of course, this last section is the result of a kind of closing that some actors involved in my case of study also promoted (they cannot just keep discussing and acting forever about their problematic situation). Therefore, this is the concluding part of this long and problematic paper. But before talking about the victorious scientific community in their struggle for existence, let us recapitulate, with one simple diagram, some of the key elements of our problematic situation, here simplified for achieving simplicity in our communication. The constituents of our “collection”, a natural by-product of our collecting work, are textual, multimedia and experiential specimens (News, videos, recordings based on interviews, informal conversations, and personal experiences considered in this research). Those have helped us to inform -that is, *to give form*- to the general situation (Figure 7-1).

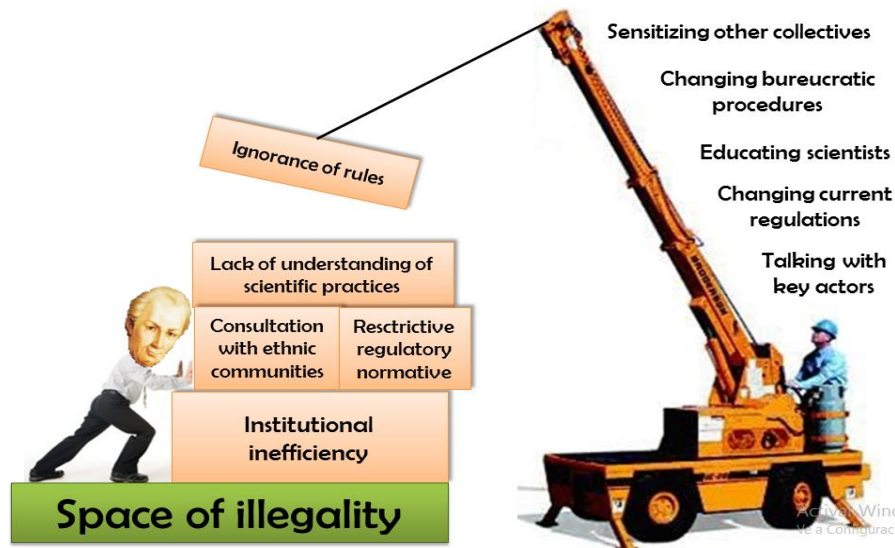
**Figure 7-1:** Troubles and scientific progress. Scientists interested in doing research in biodiversity in Colombia having problems for doing their work via collecting and sampling DNA. Every single *box* is an obstacle for doing their scientific practices. These *boxes* prevent – in discourse – the achievement of benefits from doing biological research, that is, what Science and Society could progress or promote if the movement of the scientific community would be facilitated from left to right. The entire panorama is sustained by a constraint interpretation configured by what was circulated on different specimens of this collection as have been sustained by the multiple sections of *this* textual specimen.



Problems cannot walk but it does not mean that they are not transported. In fact, previous chapters were textual spaces not only to show the different problems that scientists have associated with their practices but one way of exposing how some specimens, including *this*, transport ideas. Which vehicles and problems are recurrent? Which of them are unique to some specimens? How each of them is exposed differentially? How each of them is associated to other topics? How are they associated to local and to global aspects of society? By means of narrating, in different ways, these multiples associations had been unfolding while travelling from different textual specimens. Our particular problems were barriers that imposed a restriction in the level of freedom desired by a group of interest. As these barriers constraint their possibilities of *moving*, these obstacles restrict their actions and their possibilities of inhabiting particular spaces, which, for the case in question, was associated to the inability to get some benefits for “doing science” and to be categorized as *illegal* (Figure 7-1, *Space of illegality* against *Ideal Space*). In order to be out of some unpleasant categories, the challenge is to respond effectively to the following question: How do I remove those obstacles? What are the forces I have to use and in which direction

they must be applied for moving effectively a barrier? We have already exposed some of alternatives or ways prefigured by actors involved in order to solve the problem and this can be summarising in another diagram (Figure 7-2).

**Figure 7-2:** Removing obstacles. Problems require solutions, and these solutions are exposed as some actions in order to remove or minimising the *boxes* in front of you. Talking with different collectives, with your own collective, changing regulatory normative, minimising procedures and talking with key people were recurrent elements for creating a *situation for a solution*.



The ways for creating a *situation for a solution* involves a series of actions or what here we can name *engines* that composed a *mobilising crane* used to execute a big work. These *engines* help to move different but associated *boxes*. Some of them focused on removing the *lack of understanding* of some lay people by, for example, explaining to lawyers why some practices (collecting or accessing to genetic material) and some definitions (genetic resources and biological resources) must be evaluated in order to give it the importance they deserve or in order to have a beneficial set of concepts for avoiding impediment for performing some scientific actions. This implies that communication among groups must be promoted, *sensitising other collectives*, educating, but not only lay-people. As some actors mentioned (e.g. Gabriel Nemogá) some scientists do not understand the normativity that regulates their own practices, or can have problems with the formats or with understanding some of the legal differences used in legal papers, so, their understanding of some legal and administrative issues, or about anthropological knowledge of ethnic communities can difficult the process of the required regulatory change itself. Scientists

also think that it is needed to sensitise about the effects –the scientific ones- of doing research in order that communities do not fear Science and do not suspect of biologists intentions. So, in this case, removing this generalised *lack of understanding* would generate confidence in Science, trusting in scientific intentions and the expected practical consequences of scientific actions.

On the other hand, the *procedures* or the *bureaucracy* are elements also associated with this *lack of understanding* but also as signatures, for some scientists, of internal failures in Colombian institutions. If a procedure *X* lasts a lot of time, the problem is not understood as being dependent on the complexity of what is going to be regulated. *X* is understood as one case that represents the structural problems of one organisation (for example MADS inefficiency), and the rigid regulatory framework and complicated formats existent which must be reduced in order to facilitate scientists' actions. This constitutes another *box* to remove in order to move to an *ideal space* of scientific development. *Changing bureaucratic procedures* is one way to facilitate the movement to this space.

These *engines* must help to remove things in different places (government, universities, research institutes, ministries, and regional institutions) and involving different actors (ethnic communities, lawyers, policymakers, scientists, environmentalists). But, in fact, these previously mentioned *engines* are not as powerful as other two. First, an engine that was always there, but it is quite oddly referred by actors explicitly. The *problematising engine*, the one, that allowed to show, to share, to denounce, to factualize, to write, to report, to talk, to configure, the *problematic situation* itself. It is by configuring a problem first, that other possible engines for solutions can be considered and achieved. In this sense, the problems by themselves are used to help to change a particular state of the world. “Show me what happened, and I will tell you what to do”. Using problems for solving problems<sup>256</sup>. Using problems for removing problems.

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<sup>256</sup> As established by Gonzalo Andrade, there were many other events and actions performed in this story in order to expose the problematic situation in different places and by different means (unfortunately we could not “catch them all” for *this* research): Meeting in Presidency (Abril of 2010), but not with president; 12 meetings (Ministeries, Colciencias, ACOFACIEN, Science Academy); letters to ministers from ACOFACIEN, Science Academy, VRI UNAL); proposals of decrees; besides conferences in different academic events: *Instituto de Biotecnología, Universidad Nacional de Colombia (Bogotá, Julio de 2011)*;

This *problematizing engine* works much better if some *crane drivers* use them simultaneously with an engine whose source of energy are connections that allow achieving communication with *key actors* placed in *key places*. Here, these key actors are specimens whose behaviours are conceived to affect amply others behaviours and actions of our interest. One example, as in our case, was an effort to involve President Juan Manuel Santos, a man with great political power by showing him a letter signed by hundreds of scientists. But, in order to get around to these *key actors* effectively, sometimes is necessary to construct a network of *influential actors* whose cooperation can be effective and can help the group of interest to connect to a bigger and political powerful network (connection formed by some actors at scenarios like UAND forum mentioned in the last chapter were relevant to connect with people like minister Gabriel Uribe, and the consequent political actions that were possible as will be explained later in this chapter).

Collectives constituted by scientists are also powerful today. This is the main topic of the following sections and I will show what some scientists did and gained in order to solve this problematic situation. On the other hand, in practical terms, the shortest and considered the most effective way for facilitating this process of moving from one space (of illegality) to another (an ideal one) was by means of moving a little *stone* that was in front of the rest of *boxes*. This *stone* is another textual specimen that many fingers pointed out and we have already mentioned while considering other textual specimens: Decree 309 of 2000. So, *drivers crane* by using their engines and sources of energy for concluding a problematic story and taking it to a desired happy end, focused their efforts to move *that stone on the road*, that “Bad Decree” as one obligatory action to move from an uncomfortable state to a better one.

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*Instituto de Ciencias Naturales, Universidad Nacional de Colombia (Bogotá, Agosto de 2011); Expouniversidad, Universidad de Antioquia, Medellin, (Medellín, Agosto de 2011); Asociación Colombiana de Facultad de Ciencias ACOFACIEN (Medellín, Octubre de 2012); Academia Colombiana de Ciencias Exactas Físicas y Naturales (Bogotá, Noviembre de 2011); Consejo Nacional de Ciencia Tecnología e Innovación Colciencias (Bogotá, Noviembre de 2011); Simposio sobre conservación de ecosistemas y especies amenazadas, Universidad Industrial de Santander, UIS, (Bucaramanga, septiembre de 2012); XIV Jornadas Internacionales en Derecho del Medio Ambiente, Universidad Externado de Colombia, (Bogotá octubre de 2012); 5 Simposio Nacional Forestal, Universidad Nacional de Colombia, (Medellín, Octubre de 2012).*

## 7.1. One Decree

Decree 309 of 2000 was considered one of the key targets to transform in all the process since starting this controversy. Published in February 25 of 2000 by Ministry of Environment with the title *by which it regulates scientific research on biological diversity*<sup>257</sup>. This document was the textual expression of a series of legal compromises and international agreements in order to regulate the scientific activity on biodiversity (Figure 7-3), and its coverage is the entire set of national biological research activities, excepting health and agricultural research (unless it involves using wild species). For us – biologists- *biological diversity* is a concept that incorporates all species but this decree does not apply to pets or to us<sup>258</sup>. This decree asked people –natural or legal- pretending to do a research project to request a *research permission*. But not all institutes had to ask for it. There were exceptions: entities attached to Ministry of Environment, Regional Autonomous Corporations and Large Urban Centres<sup>259</sup>. Besides, people that did not have to collect or manipulate biological material, even if they were doing biodiversity research (e.g. theoretical, modelling, bioinformatics) did not have to request the research permission. Independently of your kind of research project, all activity was demanded to be reported to National Environmental Research System<sup>260</sup> without any exceptions. When presented a request for obtaining the research permission, the environmental authority had thirty days – if all paper was OK- for answering, denying or granting it. If granting it, the whole process could be over in a period of time up to five years, depending on the characteristics, intentions and demands of the project.

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<sup>257</sup> *Decreto 309 del 2000. Por el cual se reglamenta la investigación científica sobre diversidad biológica. Ministerio de Ambiente (febrero 25 de 2000). Published at: Diario oficial No. 43915 del 1 de marzo de 2000.* Foreign researchers that want to develop a project in our country can do it following – at that moment- what this decree asks in general but the “foreign research projects” must involve a Colombian researcher. One foreign institution can also request the exportation of specimens but these specimens must show they have acquired legally and the researcher with the interest of export must ask the ministry of environment authorization (Chap. V; art. 18). Decree 309 of 2000 is signed by minister Juan Mayr Maldonado and President Andrés Pastrana Arango. “*Publíquese y cúmplase*”.

<sup>258</sup> Art. 1. Paragraph 2. *Decreto 309 del 2000.*

<sup>259</sup> In fact, these are the entities that are the ones for granting “research permission” plus National Parks, depending on their respective jurisdiction.

<sup>260</sup> Sistema Nacional de Investigación Ambiental

Decree 309/2000 brought the possibility that many projects executed by people belonging to a “legal person” can be requested with just one permission that protects all projects only if they are thematically related in a research institution (*permiso marco*). This means that if you were part of a place like a university, you could formulate some lines of research and grouping multiple research projects in order to get the permission for all<sup>261</sup>. Among the duties a researcher had to obey -if a research permission would be consent- were: *i*) to inform with detailed data (including “collecting” information); *ii*) to deposit specimens or biological collected samples into a national registered biological collection; *iii*) to send, to regulatory entities, publications resulting from the projects; *iv*) for legal persons, to relate the projects of research before starting<sup>262</sup>; *v*) others duties not specified explicitly but pertinent. If some of these duties were not done properly, the regulator entity would proceed to cancel research permission.

On the other hand, Decree 309/2000 also regulates biological collections which independently the origin of their specimens must be registered at Institute of Biological Resources Research “Alexander von Humboldt (IAVH by its acronym in Spanish)<sup>263</sup> with all the pertinent technical and scientific information associated with every single specimen in the collection. Here a biological collection is not just understood as one place where dead specimens or samples are deposited but are the sets of biological specimens catalogued, maintained and organised taxonomically<sup>264</sup>.

The decree in question also regulates the issue of accessing to genetic resources (more specifically in Chapter IV). Article 15 declares that all research projects requiring collecting and using DNA samples need permission and must celebrate a contract of accessing to genetic resources. This decree did not differentiate among the possible uses, commercial or not, of this material and the purpose of research, which, as we have been shown previously, has been a recurrent topic of discussion in this case. Should a

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<sup>261</sup> For Gabriel Nemogá, this was a possibility in the normativity but it was not very used for institutions. In next sections, when considering the new decrees, you will see that there is created another possibility that captures this basic idea of using one research permission for many projects.

<sup>262</sup> Honestly, I did not understand anything about this obligation.

<sup>263</sup> *Instituto de Investigación de Recursos Biológicos Alexander von Humboldt*, an entity part of Ministry of Environment.

<sup>264</sup> Art. 12. Paragraph 1. *Decreto 309 del 2000*.

taxonomic study –for example- to ask permission to a regulatory entity and celebrating a contract for using DNA? Following Decree 309/2000 if you need DNA, you need to celebrate a contract, no matter your purpose or noble interest.

Besides, three important aspects are mentioned in the final chapter of the Decree considering our case of study and concerning our own collectors' concerns: *i)* It is forbidden to trade with specimens or biological samples that have been collected for scientific purposes; *ii)* if there is presence of ethnic communities in the territory of investigation, independently if it is bestowed a research permission, it must be required permission to the community; the legal process for that is the process of consultation and must be done with the supervision and accompaniment of Interior Ministry (*Ministerio del Interior*); *iii)* the people doing research on biodiversity -previous decree publication- without research permission, must request permission in order to legalise their situation.

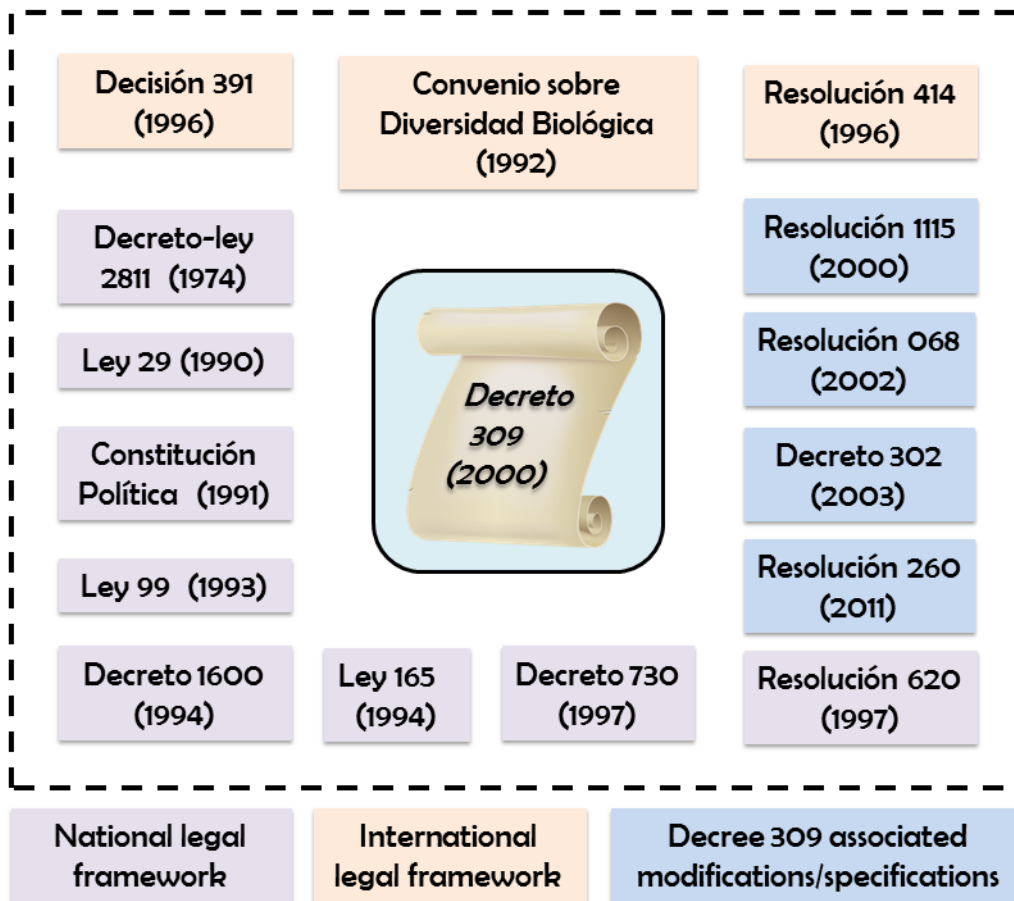
Given this brief look to our *legal specimen* of interest, and conceiving it as one obligatory text to change in order to follow a path of progress for our scientists, let us consider a story about how this controversy *ended*<sup>265</sup>, which implied that our Decree 309/2000 was to be replaced for normativity. It had to be an *extinct legal specimen* in order to lead the way to new textual specimens whose future *ecological interactions* could promote scientists to do their work without much problem. Other decrees had to *evolve* and that required a specific ecological scenario for promoting this *evolutionary change* in regulation of biological research activity.

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<sup>265</sup> Being honest, as I have tried to be in the entire text, these sections are my effort to end this story. Every single specimen, textual or not, must have limits. This does not mean that many interesting things happened after this.



**Figure 7-3:** Legal framework of Decree 309 (2000). “*por el cual se reglamenta la investigación científica en biodiversidad*”. **Decreto-Ley 2811 de 1974**. “*Por el cual se dicta el Código Nacional de Recursos Naturales Renovables y de Protección al Medio Ambiente*”. **Ley 29 (1990)**. “*por la cual se dictan disposiciones para el fomento de la investigación científica y el desarrollo tecnológico y se otorgan facultades extraordinarias*”. **Ley 99 de 1993**. “*por la cual se crea el Ministerio del Medio Ambiente, se reordena el Sector Público encargado de la gestión y conservación del medio ambiente y los recursos naturales renovables, se organiza el Sistema Nacional Ambiental, SINA, y se dictan otras disposiciones*”. **Decreto 1600 (1994)**. “*por el cual se reglamenta parcialmente el Sistema Nacional Ambiental (SINA) en relación con los Sistemas Nacionales de Investigación Ambiental y de Información Ambiental*”. **Ley 165 de 1994**. “*Por medio de la cual se aprueba el "Convenio sobre la Diversidad Biológica", hecho en Río de Janeiro el 5 de junio de 1992*”. **Decreto 730 (1997)**. “*Por el cual se determina la Autoridad Nacional Competente en Materia de Acceso a los Recursos Genéticos*”. **Resolución 620 (1997)**. “*Por la cual se delegan algunas funciones contenidas en la Decisión 391 de la Comisión del Acuerdo de Cartagena y se establece el procedimiento interno para tramitar las solicitudes de acceso a los recursos genéticos y sus productos derivados*”. **Resolución 1115 (2000)**. “*Por medio de la cual se determina el procedimiento para el registro de colecciones biológicas con fines de investigación científica*”. **Resolución 068 (2002)**. “*Por la cual se establece el procedimiento para los permisos de estudio con fines de investigación científica en diversidad biológica e investigación científica en diversidad biológica y se adoptan otras determinaciones*”. **Decreto 302 (2003)**. “*Por el cual se modifica el parágrafo 1º del artículo segundo del Decreto 309 de 2000, el cual reglamenta la investigación científica sobre diversidad biológica*”. **Resolución 260 (2011)**. “*Por la cual se fijan las tarifas para el cobro de los servicios de evaluación y seguimiento de licencias, permisos, autorizaciones y demás instrumentos de control y manejo ambiental y se dictan otras disposiciones*”. **Convenio sobre Diversidad Biológica de las Naciones Unidas (1992)**. **Decisión Andina 391 (1996)**. “*Régimen Común sobre Acceso a los Recursos Genéticos*”. **Resolución de la Comunidad Andina 414 (1996)**. “*Adopción del modelo referencial de solicitud de acceso a recursos genéticos*”.



## 7.2. The Council of Uribe<sup>266</sup>

*“Como decía Santiago Madriñan: el diablo está en los detalles”*  
Diana Álvarez, 2015

At the end of UAND forum professor Silvia Restrepo, one of the main organisers of the event made an important promise to the audience: I will get an appointment with Minister of Environment. Following the events that happened at the forum, which conclude a series of attacks, actions for mobilizing, colonizing of new territories, recruiting allies, in order to visible our problematic situation, one result of this *polite battle* was the compromise for a meeting in the kingdom of regulation for biological issues in Colombia: the Ministry of Environment. This meeting was performed in October of 2012 with the presence of the minister Juan Gabriel Uribe. To that meeting, we will refer from now on as the *Council of Uribe*. One event considered a turning point in our controversy. But, who was Uribe?

Juan Gabriel Uribe studied at UAND, the same university where the *polite battle* occurred. After the forum, it looks like the newcomer to the ministerial portfolio received a call from UAND Rector – Pablo Navas Sanz de Santamaría- whose intention was to persuade the new minister of environment to attend this scientific-controversial case which his researchers were highly concerned. Besides, another rector, Alberto Uribe Correa from UDEA, supposedly a close friend of the newcomer minister, communicated with him, perhaps, and only perhaps, for talking about our problem of concern. Important people called each other. Besides, scientists at UAND forum had the support of the first minister of environment in Colombia, Manuel Rodríguez Becerra, another UAND graduate and influential political scholar. The meeting among Academy and Ministry was accorded, but there was just one condition given by Uribe for the meeting: the rectors of the universities,

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<sup>266</sup> The following two sections are based mainly on four conversations and interviews done to Gonzalo Andrade (UNAL), Santiago Martínez (MADS), Diana Álvarez (PUJAV) and Luisa Fernanda Jiménez (UDEA). Though other people like Silvia Restrepo and Santiago Madriñan (UAND) accepted initially to be interviewed for this research, unfortunately for unknown reasons – and after sending more than one mail- no interaction was performed. No recording obtained. No social interaction at all. Another important source of information was given by Gonzalo Andrade: one presentation in Power Point of 68 slides that was used by him on several occasions and which constituted one way to *record* the antecedents of the problem, the actions performed and the proposals. This presentation was used for persuading the different public about problems facing biology in our country, including Minister of Environment Juan Gabriel Uribe in October 2012 in his *Council*.

not only the scientists, must be present in this exclusive *Council*. Which scientists would be the chosen ones?

Professor Gonzalo Andrade -one old wolf in this battle- knows that this entire problematic situation would have a significant change if scientists could generate political will. What does this *political will* mean? Basically, if someone in a good position on government is persuaded he could want to promote a change by moving his/her own resources at disposition. Forum, letters, News, academic articles, all that did not *weight* a lot for Andrade in order to define a concrete series of actions. For him, what really mattered was to generate political will to the appropriate people. Of course, we can question Andrade's perspective because of all these efforts, all these varied specimens migrating in multiple places, promoting reflections in multiple people by different means, was exactly what really mattered in all this process in order to change the regulatory normativity of scientific practices. If something *big* would not have appeared on the horizon, no *important actors* as rectors or ministers would have known of its existence in the first place. Besides, *problems* are the main sources for gaining political power: if problems do not exist neither *solvers* do, and being *a solver*, in the right moment, is of high interest, mainly, to someone new in a job, as the minister Juan Gabriel Uribe was at the moment that our group of scientists were claiming for a solution. The *problematizing engine* allowed moving people to the correct places – like the minister's Office- and allowing important people to execute pressure -like rectors- and, afterwards, of the same minister. So, *important people* with great political power could hear directly the *victims* of the problematic situation.

News were important vehicles. By exposing News in the style and the way they did, some journalists – especially from universities- were allies and co-builders of problems. An expected consequence of their institutional membership. Interestingly, Juan Gabriel Uribe before being the minister of environment had other important positions like being director of the Newspaper *El Nuevo Siglo*. In fact, in the year 2007 he was awarded the *Premio Nacional Simón Bolívar* as the year's journalist. Another journalist performing a different role, and therefore, with different capabilities of decision. This powerful journalist, now as

minister, will be conceived as another ally of science in this story about collecting and regulating. But before he was categorised as a key ally, our scholars had to expose him the entire story, and for that, a conversation face-to-face was arranged.

Four rectors and five scientists from Science kingdom assisted to the Council: professors-scientists-victims Gonzalo Andrade (UNAL), Diana Álvarez (PUJAV), Luisa Fernanda Jiménez (UDEA), Silvia Restrepo and Santiago Madriñan (UAND). The administrative leaders present were Ignacio Mantilla (UNAL), Pablo Navas Sanz de Santamaría (UAND), Alberto Uribe (UDEA) and the priest Joaquín Sánchez García (PUJAV). It is not clear why just representatives of four universities assisted to the Council. At that moment, there were approximately thirty academic programs of *Biology*, therefore, sixty more possible representatives that we assume had similar problems and interests. Unknowing what was the criteria for institutional participation (people working on the problems since many years, coincidence at the forum, political influence, institutional prestige), what I want to highlight is that the universities in its two facets, administrative and scientific, could take advantage, by showing a unified interest, in this new space for conversation, directing their arguments, rhetoric dispositive, and political pressure in order to promote what they want it to promote.

From MADS there were not only present minister Uribe. With him, there were the lawyers Santiago Martinez and Eugenia Ponce de León (this lady the former director of IAVH) and Pablo Vieira, and adviser to the minister. He needed his own team, and not only for feeling some kind of institutional support but the need of actors able to respond and guiding some conversations he -as a newcomer- could not be able to handle by his own. Besides, even if Uribe could understand and solving specific questions of the particular case, he would need some people with proper roles in the institution in order to delegate specific functions for future actions. In fact, that was the expected labour of the minister: to delegate with the political power he invested.

The Council of Uribe was accomplished at one MADS meeting room. At least, thirteen people were gathered around talking about the regulation of science activity. Andrade was

one of the main voices in order to explain the situation to minister. For it, he said he used a presentation –elaborated in *PowerPoint*- of 68 slides. This presentation was his *visual sword* and each slide a given hit directed to minister attention. He did not have a lot of time for explaining a complex situation to an important person with little time. “The person who talked to the minister was me and in ten minutes I had to explain to minister what the problem was and what the solution was”<sup>267</sup>. A representative of a Science problem had his chance for convincing this important person.

Andrade used an updated presentation he has used on several occasions, as in the forum at UAND, one month before the Council of Uribe was done. That presentation is taken by him as a summary by itself of the entire situation. The structure of the slides are summarised, simplified, and reduced in Figure 7-4. In it, or better, by means of it, Andrade makes nine movements in order to sustain the entire problematic situation and the need for solving it as a priority for ministry and for Colombia. These are represented as the nine *little slides* in Figure 7-4 and are related to nine different ways to persuade used also in several News before.

As in previous chapters we have developed the majority of *the-content* of many of these slides and would be quite annoying to explain one more time some of these issues, let me explain briefly what I believe was the role of every set of slides in the context of the Council rather than explaining with detailed the slides multiple texts.


- I. **Legal context.** Quoting some historical and modern *legal specimens* in order to explain the importance and the current legal situation about the scientific practice. Giving it legal support and delimitation to the issue.
- II. **Patterns of Science activity and its regulation.** Exemplifying the scientific practice in terms of its incidence and its need for proper regulation. Showing the

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<sup>267</sup> Andrade personal communication. But Álvarez personal communication indicates that there was not performed a presentation-with-slides and, in fact, all professors had divided the issue for the meeting and “domesticated” their corresponding rectors about the problem. She said that -respecting the rest of professors -Andrade was the one that has worked more on this. “...es él quien tenía el discurso”.

problem of *illegality* by considering the numbers of projects needing for permissions in the country. Showing graphics from scientific articles sustaining numerically and diagrammatically the patterns of research projects and failed procedures.

**Figure 7-4:** Slideshow. A summarised topic exposed on the presentation on the Council of Uribe by Gonzalo Andrade. The original slides were sixty-eight. Each number in front of each *title* represents the number of slides that I group in differential topics (another way to simplify the topics by *slide-categories*). The presentation is conceived by its author as a guide elaborated, year after year, of this controversy. Original source: Andrade (2012).

<b>Title and authorship (1)</b> <i>(Problemática para obtención de Permisos de Investigación y Contratos de Acceso a Recursos Genéticos - Propuesta de solución; Gonzalo Andrade, UNAL).</i>			
<b>Legal context (4)</b> Decreto 2811/1974; Decreto 302/2003; Decreto 309/2000; Decisión 391/1996.	<b>Patters of Science activity and its regulation (7)</b> Groups requiring contracts for accessing to genetic resources ; procedures statistics.	<b>“¿En dónde están los problemas?”(4)</b> 1. Slow procedures; 2. Non-convenient interpratation of “accessing” to genetic resources 3. Lack of accompaniment 4. Expensive costs	<b>Government proposals and new legal context (19)</b> CIPI proposal; Resolución 0260/2011; Decreto 019/2012 “Ley antitrámites; Protocolo de Nagoya; proposal for new decree (febraury 2012); proposal for new decree (september 2012).
<b>Political Constitution support to Science (6)</b> Cap. 1, Art. 27; Cap. 2, Art. 69, Art. 70, Art. 71.	<b>Actions until October 2012 (17)</b> Meetings; forums; proposals; News; letter to Xiomara Sanclemente-MADS; letter to President Santos; responses to the letter.	<b>An opportunity for change (4)</b> <i>(Propuesta cambio de código de recursos naturales y ambientales, 2012 ).</i>	<b>Biodiversity vs. Mining (4)</b> Biodiversity richness; ecosystems management; mining applications; <i>Rio Dagua</i> picture.
<b>Conclusion, thanks and question mark (2)</b> 			

- III.** *¿En dónde están los problemas?* Summarising the sentences that best described the key obstacles like time, costs, consultation, inconvenient interpretations of legal terms, bureaucratic inefficiency. Outlining and showing clarity by means of a short list of things to change.
- IV.** **Government proposals and new legal context.** Highlighting how proposals coming from government are not the more convenient by ignoring some of the

given obstacles and even worsening the situation. Including new legal context to show and increasing of the problematic situation instead of diminishing.

- V. **Political Constitution supports to Science.** Taking the *Carta Magna* as a referent for taking decisions, by showing part of it in order to show a moral guide to follow an appropriate path of development. “If the constitution says it, we have to do it”.
- VI. **Actions until October 2012.** Recapitulating the entire efforts, time, and ways followed for scientists in order to promote the required change. Showing interest in interacting and participating in a strong way in the construction of an alternative for regulating science. Even the News published in different media are shown to exemplify the significance of the case (Figure 7-5). One of these mentioned actions was a letter sent by scientists whose responder was supposedly Minister Uribe. As we have noticed in the previous section, this was not elaborated by him and this is something that Andrade put on the table when exposing to the head of MADS: “*a usted le hicieron firmar una carta donde dice lo contrario*”. The contradiction suggested in the Andrade’s sentence is referred to the paragraph of the letter in which it is asked to scientists that make proposals for solving the situation. The contradiction consists in showing that the letter of scientists was, in fact, the vehicle of a proposal. Surely, this revelation made minister Uribe feel the institution incoherence about which scientists were complaining in their interventions.
- VII. **An opportunity for a change.** Turning point in rhetoric: from problem to solution. Showing how a change in normativity – in Natural Resources Code- can be taken as an opportunity in order to change the regulation about research permission and accessing to genetic resources.
- VIII. **Biodiversity vs. Mining.** Contrasting how-good-biodiversity-is v. how-bad-mining-is, and how both are interrelated with a political advantage, and potential danger, of the last one, compared with the first one. The only picture of the entire presentation is of the *Río Dagua (Valle del Cauca, Colombia)*, showing the contamination and deforestation associated with mining activity.

**Figure 7-5:** Bad News on the Council. Slides that Andrade showed to Juan Uribe in its ten-minute presentation. This is a collection of *Bad News* in which he used the visibility of the phenomena in the media as a device for showing its importance and consolidating its factuality. Let us remember that in the majority of these News, Gonzalo Andrade himself, was one of the main *traits* or source of information for the journalists for constructing the problematic situation. That is, Andrade has an active role in the construction of *Bad News*, some of them were used by himself in order to persuade others about the necessity of a change, including minister Uribe and his team.



**IX. Conclusion, “thanks” and question mark (?).** Pointing out Colombia potential for using its biodiversity, by means of studying it, for many aspects of society development. But as research in biodiversity is something cannot be done, then, no expected reward if no change is done. More exactly as a conclusion of Andrade’s intervention:

*“Al no poder hacer investigación sobre biodiversidad desde el sector académico en donde se esta produciendo mas del 68% de la investigación en este campo del conocimiento, y Colombia como país megadiverso y en vías de desarrollo, esta perdiendo una de las herramientas más eficientes para erradicar la pobreza y construir un futuro próspero y sostenible, ya que si se basara en el conocimiento y valoración de su riqueza natural y cultural y promoviera la investigación, el desarrollo tecnológico e innovación en temas como el conocimiento de la Biodiversidad para poder fortalecer el biocomercio en Colombia, se lograría articular la academia, el sector público y el privado para incentivar la participación activa y el trabajo de innovación liderado por los investigadores, centros de investigación y universidades, para lograr impulsar la ventaja comparativa en biodiversidad del país hacia una ventaja competitiva” (Andrade, 2012).*



Thanks everybody for hearing but *question mark* opened a new space for interaction. No explicit question but a symbol for stimulating an answer<sup>268</sup>.

In the office, where the presentation was being performed, there was a woman who talked few but said the best phrase of the entire meeting for professor Diana Álvarez. She was Eugenia Ponce de León: *si se supone que acceso a recursos genéticos es para repartir beneficios equitativos hasta este momento a este país no le ha entrado un solo peso por acceso a recursos genéticos. Touché.* The minister was persuaded and the *Fellowship of the Decree* was shaped.

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*The Fellowship of the Decree was formed at MAD land (MADS) in late 2012 following the Council of Uribe. It was decided that it should be a relatively small company: the number was set at eight to represent, first, the Ministry, a land of a race of lawyers, administrators and fierce regulators (Eugenia Ponce de León, Pablo Vieira and Santiago Martínez Ochoa); Second, four scientific warriors were chosen from four different academic and noble reigns of Middle Science Earth: one came from Coffee Land (Luisa Fernanda Jiménez, UDEA); another from Xaverian Hills (Diana Álvarez, PUJAV); two more were elected for their excellent performance at Forum War that happened at the high and risky mountains of Los Andes (Silvia Restrepo and Santiago Madriñan, UAND); and finally, a modest Hobbit, a nice lobbyist and tiny creature, the only of the noble scientists without a PhD, but no doubt the main hero of this epic story who has come from the beautiful meadows of UNbiton (Gonzalo Andrade, UNAL). This diverse fellowship composed of different races, professions and interests, began an epic travel during months: they were in different reigns, discussing, negotiating and generating the expected consensus among Science and Policy in order to destroyed a bad decree (Decree 309/2000) that dominated a sacred and old scientific practice: the art of collecting fantastic and magical specimens that help to increase not only the holy scientific knowledge but helps the entire humankind and its progress on Earth.*

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### 7.3. The Fellowship of the Decree

Diana Álvarez, an energetic geneticist at the moment of this controversy was unfolding, was starting as Head of the PUJAV Biology Department. She was new in the administrative and legal spheres of the kind a Head of a Science Department has to inhabit.

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<sup>268</sup> The question mark is formed by a millipede in the slide (Figure 7-4).

She was highly interested in involving her university in this crucial process, and of course, as the administrative head of her department was something of high interest for her community. She, as many others that would assist to the meeting with Uribe, had had their own previous journeys before getting to that moment of the story. In Álvarez case she had experienced the problematic situation when trying to do a research in population genetics with flies. For her, it was incredibly absurd to think that one researcher had to ask permission, and even pay, for collecting flies, and waiting a process of nine years as she mentioned was her case. For her, -as for the other biologists- it was clear that something would have to change and she -like some other scientists- will have the disposal for participating actively in that process. Of course, the possible problems in policymaking were not strange for her. In previous chances, MADS had created spaces for involving scientific community in order to build a proposal for changing the situation. Both Álvarez and Santiago Madriñan – the UAND botanist- had participated in some of these meetings. Both professors were old acquaintances because Madriñan was the professor of Álvarez when she was studying at UAND. In these previous meetings among scientists and government, it was perceived that the key changes for the first were unacceptable for the later, basically, for possible legal consequences. “Nothing can be done” was the apparent position of some people at MADS. After participating in these apparent failed encounters and before UAND forum was performed, Álvarez and Madriñan were also involved in sending another letter to MADS (June 14 of 2012), a letter that was never answered<sup>269</sup>. Another failed interaction. Another reason for feeling frustrated and a motivation for trying a different strategy in order to be in the ideal space they wanted to be.

Álvarez also knew –before the forum- another interested member of the *Council* from another causal interaction: She met with Professor Gonzalo Andrade because, some years before, he had sat down next to her chair on the plane when she was travelling to Medellín

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<sup>269</sup> This letter was sent to Xiomara Sanclemente, Head of the office of Forests, Biodiversity and Ecosystem Services (Oficina de *Bosques, Biodiversidad y Servicios Ecosistémicos, MADS*). This letter was signed by representatives of different institutions important to Science in Colombia: Eduardo Florez (SOCOLEN), Gonzalo Andrade (ICN), Santiago Madriñan (UAND), María Hersilia Bonilla (Head of Department of Intellectual Property of CORPOICA), Miguel Tovar (COLCIENCIAS). For professor Álvarez, Luz Mercedes Santamaría of Professional Biology Council (*Consejo profesional de biología*) was also involved in the process of the making of this letter though the copy of it does not show her as a signatory. The non-answer of this letter will be shown as complain about non-hearing science community at the UAND forum.

to an academic event. Andrade was going to talk about that problematic situation in the *Paisa* city and the plane was another place to talk about it with her new friend. So, both recognised each other before the establishment of the *Council* and those previous interactions allowed them to promote their union in the entire process.

Another *coincidence* is what Luz Fernanda Jiménez, UDEA professor and ichthyologist<sup>270</sup>, attribute as a causal factor for her to participate in this policymaking process. She was worry about the biological collection of fishes and other collections that kept diverse organisms of our country. These biological collections have thousands of biological specimens captured without the required research permission asked by Decree 309/2000. So, in many instances, UDEA professors made meetings in order to establish a strategy to persuade IAVH -the place that registers and supervise biological collections in Colombia- so the institute could legalise the situation of UDEA collections. In 2011 there was a meeting performed at this *Paisa* university, led by professor Vivian Páez, an herpetologist, who had been travelling to Bogotá several times for participating in the meetings convoked by the ministry of environment and universities of the capital. However, Páez was going to start her sabbatical the next year (2012) and she could not continue to participate in these important meetings. The only problem is that participation to these encounters in the capital did not have economical support for the person that would be delegated from UDEA. It is at this moment – of economic concern- that Luz Fernanda Jiménez enters on interaction and making herself visible: “Hey, we can support this person if each research group contribute with little money for the travel” This was the suggestion that -for Jiménez- determined her own involvement in posterior interactions. “Professor Jiménez you should be the representative” “Yes”, “I agree” “You can do it Professor Luz” “Go, go, for it!” And that’s the way it was. Jiménez accepted and started to be a representative for her community in these affairs.

She had never been involved in those kinds of administrative process of Science. “*Me sacaron del laboratorio y me pusieron en una cosa meramente política y normativa*” In this new journey she was not alone. Juan Manuel Daza, another herpetologist and UDEA

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<sup>270</sup> ¡Like Aquaman!

professor, was leading this process with Jiménez. Internal institutional work was performed: first with biology professors exclusively; then, including social sciences professors (interested mainly in the topic of consultation). Even some people of engineering were in the process (perhaps, interested in biotechnology). As usual, the meeting at UDEA had many people initially (the best moments with thirty or so in each session) but finally, numbers were decreasing and Daza and Jiménez felt alone. In part, the resultant process of this *paisa* process involved participation with other universities and sending their proposals to Bogotá to the national working group at the head of Gonzalo Andrade, no doubt, one of the considered leading figure of the entire movement.

Finally, they convinced UDEA high command –rectory- about the importance of participating because, in fact, if they did not solve the problems of biological collections, this could affect the process of accreditation of the university because biological collections also mean points of accreditation for doing research. As everybody knows accreditation is a sensitive point for rectors of universities, so, the persuasion worked and UDEA had already her formal—and economical supported- representative: Luz Fernanda Jiménez, the one who, at the end of the forum get closed to Silvia Restrepo and told her about her interest in participating of the *Council of Uribe*. And that's the way it was.

About Professor Gonzalo Andrade... well, I have already written a lot of him. He had been playing as scientist, journalist, adviser of Vice-rectory of research at UNAL; he had worked at MADS and he even had been involved in the constitution of the *Bad Decree* (Decree 309/2000). Perhaps he felt guilty for helping to produce such an undesired textual specimen. But, for him, *the perversity* of the decree was because other textual specimens appeared and posterior formats were elaborated that forced researchers to give quite detailed information that they could not really supply in some occasions (e.g. How much butterflies you are going to collect and where?). Even for some rigorous empirical scientists too-much-detailed-and-certainty escapes of their own practices. Even the unpredictable behaviour of their beloved biological specimens makes the situation more difficult in order to provide reliable information. Of course, decree 309/2000 contained elements of discussion for scientists (for example, what constitutes access to genetic

resources or in which circumstances consultation is needed) that were considered problematic. No matter which were his multiple motivations Andrade was important because, he had helped to problematize the entire situation, showing expertise in scientific and policy aspects of the controversy.

Diana, Luz, Gonzalo, Santiago and Silvia, five professors that constituted a group of interest. Each of them with their own previous journeys before the constitution of *The Fellowship of the Decree*. Academically, they came from different branches of biology like genetics, botany, ichthyology and entomology. Without a common academic topic of interest, some of them perhaps would had never interacted in other spaces as intensely as they did in the journey of the *Fellowship*. All confirmed their interest in the stage of UAND forum. All seemed to know what has to be done. The configuration of this team was a matter of necessity not a question of representation or a result of a call. They were in the correct place in the correct moment, of course, constrained by their own elections. Silvia had made her promise and the rest of them will promote the participation of their rectors and other instances of each university as research vice-rectory and juridical offices. As Álvarez would express “*es un problema para biólogos pero no para el universo entero*”. So, it would be necessary to recruit other important people for this important meeting. They did it; the Minister gave them political support and delegating his own team to complete *The Fellowship of the Decree*.

Frequent meetings of the Fellowship started in October, after the Council of Uribe, and they would finish until December of 2012. The meeting, when performed by scientists only, included snacks, jokes, and talking about different topics to their collective goal. For Jiménez, this meeting implied many travels from her city, Medellín, what she did on several occasions. It was a nice group. Sessions of three to four hours performed many times in professors' offices (Figure 7-6), starting at 9 am generally. The meetings were almost weekly. One week with the MADS team or involving representatives of other institutions like ANLA or IAVH. The other week the scientists met alone and a similar dynamic occurred from the MADS part. They also started to share not only physical spaces but virtual ones. *WhatsApp* for fast communication; *Dropbox* in order to share files

of relevance and the different versions of their paperwork. The lawyers and regulators read the *lista de deseos*<sup>271</sup> and it was their responsibility to tell to scientists what was possible in the legal world. Discussing, analysing and laughing every week. Feedback here and there. Of course, this was not a construction starting from a zero basis. For years, many ideas had been circulated, had been selected and criticised, from MADS to Academy and in the opposite direction. Of course, with time, the people, the agencies involved in this previous work would be forgotten. They would not be quoted.

**Figure 7-6:** Andrade´s door office at ICN. One place for doing science and for policymaking.



Eugenia Ponce de León looks like a biologist –Álvarez´ words- though she was a lawyer. She had been director of IAVH and has a big experience in legal aspects of biodiversity and environmental problems. No doubt her criterion was taken as quite important, a key element to establish what it was possible and what it was not in the pretended new regulatory decree. Of course, she was not alone, as MADS member, in the *Fellowship*.

The adviser of ministry, Pablo Vieira Samper, was considered a key actor in the entire process. After this particular journey would end, he would have an important promotion: he became vice-minister of environment for the period 2013-2016. His appearance, in this case, did not start when the *Council of Uribe* was convoked: he had been involved in

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<sup>271</sup> Expression used by Luz Fernanda Jiménez in order to express her desires about a better regulatory framework.

previous actions performed in order to solve the problem when the Ministry had promoted previous meetings with scientists. Vieira is a chemist engineer with a PhD title from the University of Tulane (USA). A real member of Science World. This membership was something for mentioning for some of the interviewed people in order to explain why he had such an apparent important role in the entire process. “*Él entiende*”. As a scientist, Vieira was conceived as a person with the competence to judge scientific concerns. So, he was seen in the entire process as a mediator among academy and policy with a holistic view of institutional affairs but with the scientific formation.

The other lawyer was Santiago Martinez Ochoa. At the moment of the conformation of the *Fellowship* he was the head of the legal office of the ministry of environment -working on MADS since 2011- so any new decree created in the context of his institution must pass through his hands first<sup>272</sup>. Fortunately, for scientists, he was going to be directly involved in the making of the new normativity, which would ensure a legal future approval. His previous trajectory had not involved those kinds of scientific topics but he had worked on environmental problems for the private sector, doing advising. In private sector, and when entering to the public institution, he had costumed to work with people of different formation. Working with financial sector, for example, he performed similar roles regulating other people actions, like bankers. He also had worked in oil companies so he interacted with engineers and earth scientists. When he started working on MADS, previous to his designation for working with biologists in the *Council*, he had heard that many petitions had arrived at the ministry in which scientists were asking for a normativity change. So, he knew this was a delicate topic for scientists on biodiversity that had caused many headaches to other public servants in the Ministry. For Martinez, this would be an effective process if the first thing to do was to find a common language, to understand obstacles, fears, and expectations from *the others*. His mission was to generate confidence and trying to understand the other point of view, that’s was his previous experience had taught him.

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<sup>272</sup> At the moment of the interview he was coordinating the environmental topics so that our country could get into Organisation for Economic Co-operation and Development (OECD).

In the series of meetings –in the *regulating journey*- all had different styles for problematizing options and arguing. In one meeting Madriñan could have been thinking in extreme situations of application, considering the future decree in the context of a future scenario; meanwhile, Alvarez -always surrounded with copies with multiple references, footnotes, underlined paragraphs and diagrams- was looking for precedents and constructing coherence; at the same time, Jiménez was considering the institutional administrative framework of her institution in order to see coherence among what they were constructing with the legal context and daily practices of her community at UDEA; No important differences among *what-to-change* among scientists but of styles for arguing and exposing their points of view. On the other hand, Ponce de León and Martínez, the juridical input, were checking language, achieving legal coherence and creating possible problematic situations due to *what-other-legal-texts-say*; Vieira was in charge of relating institutional functions and, as a scientist of formation, had the role to understand much better his scientific pairs. Martínez would have to understand the problem and the counter positions in front of the topic inside the Ministry and would had to put his position even considering that some options were not shared by others members of the ministry. The MADS team also agreed that decree 309/2000 was too restrictive and it pushed scientists to be in a space of illegality. For them, Scientists were victims, not offenders. On the other hand, for Martínez, decree obligations -from a regulatory point of view- were almost impossible for verification and of impossible fulfilment so, as the lawyer said “we ended in the worst of the possible worlds” a completely “inoperative norm”<sup>273</sup>. MADS team were considered by Science team as being contextualised. “*uno no se sentia hablado a una pared*”<sup>274</sup>. Good interactions were performed among teams. No apparent lack of understanding. The regulators seemed to know what they were talking and they always

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<sup>273</sup> Though News and scientists talked about that they could be in legal risk, even of changing their labs for jails, following Martínez an infraction on decree 309/2000 can result in a penalty fee but not jail because it does not constitute a criminal offence (*delito penal*). In fact, no one –neither lawyers nor scientists- know of a single case of a scientist in jail for collecting without permission or accessing to genetic resources for not celebrating a contract with the State. Some researchers, following Andrade, are being investigated, and in one case, UNAL had to pay 14 million *pesos* as a fee for accessing to genetic resources without having to celebrate the respective contract. In general, most biologists did an illegal action but will not be investigated for that.

<sup>274</sup> Diana Álvarez.



were playing for scientists' side. So, they were conceived as fundamental in the entire process not as another obstacle.

The entire process was conceived as a collective construction in which each part really contributed to the structure of the resulting decree and no great discord among academics and among lawyers was revealed. As Santiago Martinez said, involving universities is not very usual, but what it is frequent is to involve *other actors* in order to generate a norm, especially depending on the impact of the norm. Besides, these processes are published to a public. They receive commentaries and this constitutes one way for promoting participation for a group of interest. In this case, there was a specific demand for scientists but also a disposition to work. In fact, there was a constant demanding for working more directly and actively in policymaking. Following the lawyer, the idea of regulation with more participation is also demanded by the OCDE, and for that, it is necessary to establish better methodologies in order to promote a wider participation in the generation of a normative. "Today ministries are not so rigorous in those processes but that is the direction to follow". Though the controversy involved the topic of consultation there was not apparent need to convoke ethnic communities because the new decrees do not touch the topic of *consultation* at all. Besides, its participation would be considered one obstacle more in the process. For them, it was good that the team would be small. Too many people, coming from different places, with multiple purposes and with different interpretations would complicate more the process and this was a process that would have to proceed fast. Even MADS was making pressure because political changes in the Ministry could difficult the entire process when coming new people to the political game with the change of administration.

The entire journey produced not one but two decrees: one centred on the practice of collecting and research permission (*Decree 1376/2013*); the other in biological collections and its regulation (*Decree 1375/2013*). Of course, those textual and legal specimens were highly related among them. So, it was relevant to review one when constructing the other in order to avoid contradictions.

In the entire process, the Science team considered there were many points in common but there were some particular aspects that were controversial. For Martinez, for example, “Santiago Madriñan básicamente quería desregularizar el tema”. For the lawyer, every article generated controversy which makes decree constitution not as easy as other could have believed. Another important aspect was the duration of *research permission* given to universities and how much confidence would be granted to the universities in order they would serve as guarantors of compliance of decrees. Behind all the discussion was the issue of *confidence*. If new decrees were going to be more flexible than the old one, all these *absences* of legal constraints imply that regulator would trust more in the universities and their researchers. In fact, at the end of the process, scientists would say that this change constitutes a way in which State shows how society can trust in scientists work and intentions.

Many of the discussions were about using proper terms and possible interpretations of them. Some of these looked not to be problematic but other were crucial in the change of the new regulatory framework and its implications in procedures. That was the case on considering what constituted *accessing to genetic resources*. As I have mentioned previously, the old decree (309/200) regulated also the issue of accessing to genetic resources. Following the old normative, and being coherent with some supranational agreements (Andean Decision 391/1996), if you take a sample of DNA, no matter what you are going to do with it (for commercial purposes or for doing systematics of frogs), it is required that you celebrated a contract of accessing to genetic resources. As doing systematics, or similar studies, were not realised for commercial purposes, then –scientists argued- it should not be necessary for them to celebrate a contract for something would not generate economic benefits but basic knowledge. Initially, this was one of the topics ministry did not want to cede. For scientists, if that point would not change then all the policymaking process could be considered unsuccessful. “We are going to ask if it is possible” said the lawyers. Finally, after one final discussion at the end of the *regulatory journey*, scientists wan by achieving the desired distinction which, in the Decree 1376/2013 is represented by the following paragraph.

**“Artículo 2. PARÁGRAFO 5o.** Las investigaciones científicas básicas que se adelantan en el marco de un permiso de recolección de especímenes de especies silvestres de la diversidad biológica con fines no comerciales y que involucren actividades de sistemática molecular, ecología molecular, evolución y biogeografía, no configuran acceso al recurso genético de conformidad con el ámbito de aplicación del presente decreto” (Decreto 1375/2013).

This clarification was considered one of the most important achievements for biologists in order to facilitate the realisation of its practices. It means that many projects of research, if shown that do not have commercial purposes (no patents expected), then do not need to celebrate contract for accessing to genetic resources, which, in practical terms means, less time, money and bureaucratic procedures for Scientists involved in that kind of research activities. In an era of molecular information becoming more pervasive, this distinction in this legal specimen would facilitate the life of many researchers, especially those doing a molecular analysis.

The journey of the *Fellowship of the Decree* ended in December of 2012<sup>275</sup>. Ten to twelve meetings were realised with their respective minutes. All the process was qualified as a kind of negotiation in which it was unavoidable to give in some aspects in order to win in others. This was also a space for revealing internal functioning of institutions. At December the decrees were published in the web page of ministry<sup>276</sup>. Decrees were exposed to the public audience and the ministry received many *good* comments which were considered for evaluation (following lawyer Martinez, MADS team checked, more or less, fifty commentaries to these versions, in general, before they were signed by President Santos and Minister Uribe). Many other universities participated when decrees were shown to the public on the web. Though it was a practical reason to have a reduced number of people for this kind of processes *in the making*, a virtual forum was created in order to let others gave their opinions<sup>277</sup>. After celebrating Christmas there was a meeting

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<sup>275</sup> It looks like there was another team working in parallel to our fellowship on the problem for accessing to genetic resources. But no one interviewed could say what happened with it. It looks like this unknown team was not as successful as ours.

<sup>276</sup> Following an announcement signed by Alexander Gómez Mejía, vice-rector of Research of UNAL (*Comunicado Número 01 del 2013 a la comunidad universitaria*), MADS would give a grace period until January 30 of 2013 for external comments. Interestingly, the announcement of Gómez is signed at 22 of January of 2013, only eight days before the last day of the term. Gómez also invited the community to assist to an information session guided by Gonzalo Andrade in order talk about these new proposals for regulating the biological collections and the collecting practices with scientific purposes.

<sup>277</sup> Of course, some professors explained that some things were not conceived as good at all for their colleagues. When decrees were published many questions raised. There were socialisation of advances with

on January 17 of 2013 only with the scientists' team. But they had no idea what was happening inside the ministry with the final versions of the decrees. Some months later, there was a forum at UNAL about genetic resources where Alvarez and Vieira met by chance. He informed the professor that everything was okay and the decrees were ready to be published. But the final versions of the documents were seen by scientists until the President Juan Manuel Santos signed them on June 27 of 2013, that is, when they were already published by MADS. The two expected decrees -after 13 years of a reign of a *Bad decree*- finally were born<sup>278</sup> and the *Fellowship of the Decree* was formally dissolved.

## 7.4. The Two Decrees

Two towers of great power - Government and Academy- were involved in the creation of two new decrees that regulate the ancient practice of collecting and its main product, the biological collections. Decrees 1375 and 1376 of 2013 were the tangible treasures gathered in the journey of the *Fellowship* (Figure 31). For Santiago Martínez scientists were involved until the end of the process. For him, it was never denounced to them some kind of dissatisfaction with the method and the products. The entire contrary: thanks for hearing! But, as mentioned before, the final versions of the Decrees were not reviewed by our scholars. Some things were changed by MADS respecting Scientist's last version. For example, professors did not want it that teaching practices at universities needed of permissions (in fact, schools do not need permissions if there is an educational purpose).

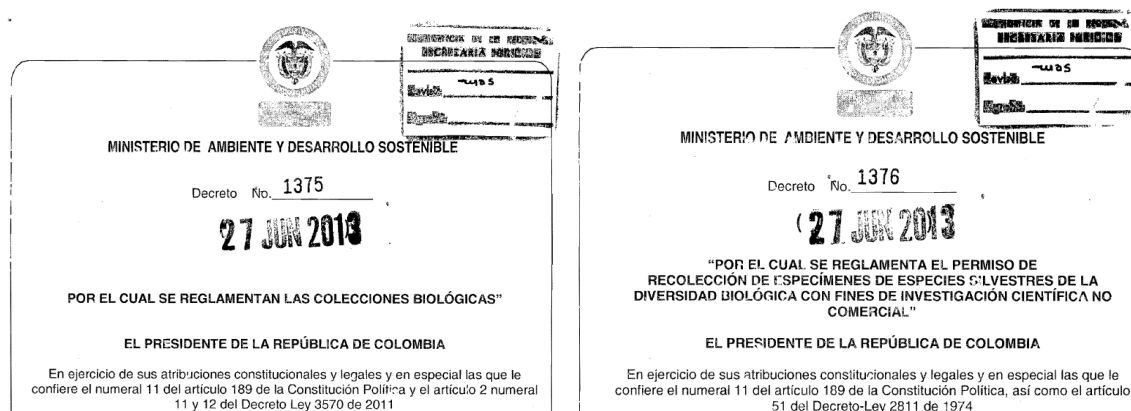
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professors in the process of their making but if they did not feedback in the right moment, "sorry!" There were complaints but they were not said at the right time, some members of the fellowship admit (e.g. what to do with a thesis that uses specimens in collections that do not have research permissions?).

<sup>278</sup> In this birth process and in the breeding of the decrees (posterior integration to institutional systems; education processes for socialising them; elaboration of formats and platforms) were involved many other people. Just for mentioning some of them and the institutions they belong: Juan Carlos Bello Silva, Coordinator of the program of management of information and knowledge of IAVH a dependence that control the topic of biological collections and the System of Information about biodiversity in Colombia (SIB, for its acronym in Spanish); also from this institution Karen Soacha, Oscar Orrego, Rodrigo Moreno and others. From ANLA there were people mentioned in the interviews as Ivan Dario Melo and Ana María Umaña. Many of these people, though belonging to the "inefficient government" were considered people that understand the problem and were trying to facilitate the situation that was also not convenient for them. Just one person in all this controversy, belonging to MADS, has been point out as -quoting another person- "*una de las persona que más impidió y más ha jodido en todo este proceso*". Claudia Rodríguez is a biologist and her scientific membership was considered some kind of irony in the process. "How should be possible that one of us hold up our own scientific practices?" For some of them, Rodríguez "no era interlocutora, era piedra en el zapato pa todo".

But the final version of decree 1376/2000 does not exclude academic practices of being included in a line of research of the university (even if *doing research* is not the intention of the educational practice) and therefore, their need for a collecting permission. Besides, all research activity in universities has to inform the ministry about their results periodically. For scientists, each year would be enough in order to keep feeding with information the biological system of information but, in the final version, this period is reduced to each semester. Another important aspect that was not accepted in the decrees scientists' final version was their request for amnesty for specimens collected since 2000 without research permission (which are thousands and are present in all the registered biological collections of the country). Let us remember that when Decree 309 of 2000 was published, the government approved an amnesty for specimens collected before the year of application of that old decree. But on this occasion, no amnesty was allowed and thousands or even millions of biological specimens are of illegal precedence. Therefore, if a biologist wants to perform a research with the material that already exists in collections, he/she could be involved in a juridical trouble if cannot be sustained the specimens legal status. What is going to happen with all these illegal specimens? For now, ignore them.

**Figure 7-7:** Two decrees. Decree 1375. *Por el cual se reglamentan las colecciones biológicas.* Decree 1376. *Por el cual se reglamenta el permiso de recolección de especímenes de especies silvestres de la diversidad biológica con fines de investigación científica no comercial.* Both documents sum up twenty pages and were published by MADS at June 27 of 2013 and signed by President Juan Manuel Santos and minister of environment Juan Gabriel Uribe. One important difference between a scientific article and a legal paper is that the personal names associated with the text, in the first, are considered their authors, in the second, the persons that approved them. So, in Decree constitution is not considered relevant to show *who-write-it* but *who-approve-it*. For a research like *this*, you cannot feel satisfied with just two *big names* on an assembled paper.



Besides these non-discussed *omissions* in the final versions of the decrees, we can add some other *obstacles* that persisted *in-the-texts* but that were part of the entire problematic situation described in previous sections. First, the problem of accessing to genetic resources is not solved when there are commercial purposes. For Professor Andrade the problem is solved for the projects with scientific purposes, whose intentions do not pretend to generate an economic benefit but just basic scientific knowledge. So, the products of these investigations are shown as altruistic with the goal of benefiting society in general. However, though some research projects have non-commercial intention there are many of them that could produce a possible but not foreseen commercial output. As it was said previously, it looks like another team worked on this particular situation but no solution from the decrees produced by our *Fellowship* was achieved where this economic output is expected<sup>279</sup>; second, consultation was another *chicharron*<sup>280</sup> not solved. So, if there are scientific communities present in your place of interest, you have to do the entire process as before (Scientific criteria following Álvarez: don't go to places where there are ethnic communities!).

If there were things ignored by the ministry and some *obstacles* that were not surpassed (what makes our *happy ending* not so happy), then, what were what scientists, journalists, public servants, lawyers, considered as the perceived main achievements with these new textual specimens? They are varied and can be summarised in the next list above. Of course, many of them are directly related to the already mentioned claims discussed previously.

- i) The researchers that worked at universities that accomplished the requirements for requesting a *permiso marco*, do not have to make the procedures as individuals if his/her projects are members of a *line of research* on biodiversity supported by the university. This *permiso marco*, in theory, facilitates

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<sup>279</sup> In personal communication, Andrade told me that he had talked with Paulo Vieira in order to establish an analogous procedure – another *Fellowship*- in order to solve the problematic of accessing to genetic resources which are of high interest for many biologists, especially for those doing biotechnology.

<sup>280</sup> Álvarez personal word. *Chicharron* refers to a very difficult obstacle or to an unpleasant action to do but that has to be done anyway

- procedures because scientists have to report back to their universities, not to ministry.
- ii) This *permiso marco* is given to universities that accomplished all requirements for a period of ten years. In these ten years, the scientists can collect for the projects they have registered in their universities.
  - iii) Now the permission makes reference to *collecting work* not to *research permission*. Though it seems an irrelevant difference, and perhaps it does not change practical actions of scientists, it was argued that the *Carta Magna* supports *research* and must protect this activity, so, the permission must be asked for collecting biological samples not for doing research on them.
  - iv) Projects using *molecular information* in order to produce *basic science*, as molecular systematics, population genetics or molecular ecology, must not be interpreted as projects needing to *access to genetic resources* in the classical legal meaning of the expression. Basically, because this knowledge does not intend to produce economic benefits, at least in intention. This change implies that these scientists doing this kind of science do not have to celebrate contract for using DNA from biological samples, and they will not be regulated by normativity related to the topic of accessing to genetic resources.
  - v) Now the “business” is with the university. The ministry does not have to be very involved with research issues but with the possible negative effects of the projects. The dialogue is not with scientists but with the person in charge for these procedures in Research Vice-rectory of each university. So, direct interaction among government and scientists diminished, and with that, the administrative and legal work of the last.
  - vi) This change was taken as *a matter of faith*. A change of attitude in which the Government, basically, decide to give more confidence to the scientists. This gaining in confidence is traduced in regulating in a more flexible way. *Big Brother* is not going to be above you all time.

Besides this new territory gained in the reign of bureaucracy, the new decrees also produced new challenges or -if you prefer to name- new problems or undesired outputs. Let us consider some of them to start to configure another *possible problematic situation*.

- i) Subjects like *Animal Taxonomy* or *Systematics of Plants* have as normal teaching practice a field work that implies the collecting of biological specimens. This practice is not considered *research*, in a strict sense, but Decree 1376/2013 demands that this teaching practices in some way must be classified in one *programa de investigación* but, as this field work is classified frequently as part of a *programa académico* a new problem among distinguishing this aspect arises inside universities. What does *research* mean? And which dependence must manage it?
- ii) In order to accomplish the new compromise with the ministry, researchers must present reports every single semester by means of their universities. Presenting informs when being in an illegal framework, was not *a must to do*. But in a legal framework this is demanded and it means spending more time that scientists would like to invest doing something else.
- iii) *Permiso marco de recolección* that protects all research projects on a given institution implies that scientists have to learn some new procedures and doing some associated actions they did not use to. Managing their internal process for registering information. This implied internal capacitation with researchers, so, the institution can assure that its scientists are going to be in synchrony with its own bureaucracy.
- iv) Given that scientists must keep reporting their discoveries periodically. This implies that they cannot accumulate collected material (some collectors identify specimens even some years later after collection). It is important they do evacuate this material in order to keep informed the biological system of information of the country.
- v) If a university wants to request a *permiso marco de recolección* they will have to develop –or to buy- an internal information system for storing information of



- research projects on biodiversity. If the institute does not have the information system, it cannot apply for the permission.
- vi) The distinction that considers that when there are not commercial purposes, a scientist can collect and use genetic material without the necessity of acquiring a contract for accessing to genetic resources was something welcome but it is likely against Andean Decision 391 of 1996<sup>281</sup>. Contradiction with a supranational agreement? A minimum risk for the *Fellowship* considering that some other countries that signed the Andean Decision have not applied it strictly. So, there is like a non-explicit-consensus among members of Andean Community that this decision is quite rigid. A trade-off is considered in which the possible benefits could be more than the risk of having an international sanction.
  - vii) As it was commented before, there was amnesty for specimens in biological collections without permission when Decree 309/2000 was published. With Decree 1375/2013 that regulates biological collection, no amnesty was accepted<sup>282</sup>. This means that a significant part of the collections will be considered problematic in legal terms, which can cause that this material would not be reported to the biological information system or that is going to be ignored for possible future research projects.
  - viii) *Permiso marco de recolección* implies more institutional responsibility respecting scientists' actions. This is traduced as a new collective pressure for behaving in order to promote a correct process. On the other hand, individual permission with the new decrees is as complex as with decree 309/2000.
  - ix) New *bureaucratic paper* had to be created in order to formalise the entire procedures asked for the new normativity. Some of our scientists, as Andrade and Álvarez, also worked on format elaboration with IAVH and ANLA in the

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<sup>281</sup> The definition of accessing to genetic resources of this supranational agreement says: “*obtención y utilización de los recursos genéticos conservados en condiciones ex situ e in situ, de sus productos derivados o, de ser el caso, de sus componentes intangibles, con fines de investigación, prospección biológica, conservación, aplicación industrial o aprovechamiento comercial, entre otros*” (Decisión Andina/1996)

<sup>282</sup> IAVH proposed that any registered biological collection has to send a letter saying that all collected material was legally collected. The collections in Colombia are full with illegal material. So, the purpose was denied, basically, because it was evidently false. Today, we can say that scientists and regulators just “ignore” this big illegal part of the biological collections.

second semester of 2013. These new formats had to be discussed, analysed and socialised for their correct fulfilment.

- x) Though the entire process was considered successful in general, for some scientists *se necesita comunidad científica y de peso*<sup>283</sup>. It is conceived that no sufficient union exist among scientists. This is explained because actual organizations are not attractive enough or good leaders are not doing a proper management of Science (ACCEFYN, *Consejo profesional de Biología* or *Colciencias*); scientists are dedicated exclusively to their scientific duties, therefore, they are not investing time to administrative, legal and political issues as they should if they want to gain more political power; poor ability to convene, lack of leadership; Science activity is considered important for ordinary life but its benefits are in the long-term, so, the absence of scientific work does not look of high concern for government in the short-term. If they stop collecting specimens the risk is not going to be felt as when the community of truckers stops driving. *No es una cuestión de inmediatez como un paro de taxistas*<sup>284</sup>. More scientific power for mobilising is demanded.
- xi) Today anyone can report any biologist that had collected without the required permission previous to the publications of the new decrees. The entire biology community is still in danger and new juridical cases can arise for their previous collecting practices without permission or for using illegal material deposited in collections.
- xii) Today scientific community is in a better position than in the time lapse of 2000-2013, respecting their *regulatory comfort*, but still worse than before 2000 (that is, before any regulation of their practices by means of Decree 309/2000 existed). So, possible future changes can still be done in order to achieve a better position for scientists.
- xiii) It is conceived important to keep promoting the construction of normativity with people that understand problematic situations for scientific practices, that can understand living systems dynamics and uncertainties and working with

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<sup>283</sup> Álvarez.

<sup>284</sup> Álvarez.

people that know the legal terms and the mechanics of constructing laws. A necessary synergy to hear different positions and weighting options. The State must have knowledge and understanding of the possible impacts of the regulation and their alternatives; this knowledge must be obtained, mainly, from the community regulated.

- xiv) There are people questioning –even biologists- if the entire change was a good idea because of the new problematic situation that seems to emerge.

*Usted tampoco puede hacer lo que se le dé la gana* said Álvarez in the interview respecting to scientific activities and their regulation. But if scientists were able to choose another possible output of their journey, no doubt they would change some relevant aspects of them. In fact, in the interviews, I asked them how would be *an ideal decree* if they would have the power to elaborate them without legal restriction. Though not all responded the same, here are some answers they gave for this *dreaming exercise*.

- i) *No pedir permiso, dar cuenta de*<sup>285</sup>. No need for asking permission for doing research, collecting specimens, or accessing to genetic resources in Colombia if there is a scientific purpose and performed by national researchers within the institutions registered to regulatory entities.
- ii) No need for authorization for interchanging biological specimens between national or international institutions.
- iii) No asymmetric treatment. If it is asked permission to A institute why not asking to B? (Decree 1375 and 1376, as did Decree 309, excluded for asking permission to MADS institutions what was considered unfair an illogical given that the universities produce the majority of scientific knowledge that was used for governmental institutes).
- iv) If you are a biologist (with business card), just for being *that* you should have an automatic permission for collecting.
- v) In indigenous territories, we must communicate, ask permission directly to communities but if there is a research without a commercial purpose or

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<sup>285</sup> In fact, for Professor Álvarez would be nice that the word itself “permiso” would disappear.

damaging communities, a legal procedure should not exist. For professor Jiménez collecting always must imply informing the community what has been found. She is agreed with consultation but she thinks that some communities are using this as a way for financing themselves, satisfying some personal interests and even political.

- vi) More self-regulation of biology community instead of being regulated by an external agency embodied in a decree.
- vii) Not asking extra permissions. For example, fishes are also considered *hydro-biological resources* and it means another procedure even if you are not going to eat them. In protected areas, as national parks, there is also necessary to request another special permission. Less permission the better.

Achievements, challenges and new problems. No matter if the balance is good or bad for our scientists, new decrees were published and now (2017) two textual specimens (Decree 1375 and 1376 of 2013) regulates the antique practice of collecting with scientific purposes and its main product, the biological collections. Though it is recognised that normativity change has its own limits, the entire process was considered successful for the academy, the government and the journalists. It was time that our heroes return to their villages, tell the story, and keeping doing what they use to do best: Science<sup>286</sup>.

## 7.5. The Return of the Scientists

Coming back to their ordinary actions: catching butterflies, classifying them, detecting their threats, doing genetic analysis of them; publishing and sharing in congresses; you know, those are the kind of actions biologists do in their natural habitats. After decrees were published, some letters were sent to rectors of universities that participated in the process of policymaking in June 2013 written (signed) by minister Uribe: Thank you so much for your participation, we have fulfilled.

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<sup>286</sup> Of course, *doing politics* is not a strange practice for them, and they can be very good, as this case exemplifies, on the Policy field of action.

The process and the products were celebrated, as expected, mainly in the News of our already known university journals (Figure 7-8). “Good News for Science” said headlines and journalists in different ways. “No more troubles for doing science on biodiversity in Colombia” claimed the textual specimens. Álvarez, Jiménez, Andrade, Madriñan, Restrepo, and their respective universities were redundant traits appearing on this new generation of News. No single textual specimens concerning the new decrees could be qualified as having a negative connotation about the entire process. It was Victory! and Good News were their flags.

After the journey of the fellowship, some of our *heroes* were interested in keeping very active in administrative roles. Álvarez and Andrade did a campaign for deans in their respective universities (without being successful). Álvarez came back to study his beloved flies and Andrade kept working in other administrative and legal issues. He even was named the president of the *International Union for Conservation of Nature* (UICN) for South America and perhaps, as Álvarez said, he could become in next years the first biologist at the head of the ministry of environment. More luckily, Silvia Restrepo, after being director of the department of Biology became dean of Faculty of Sciences and today she is Research Vice-rector of UAND. No doubt a successful path in an academic-administrative career for her. Madriñan and Jiménez came back to study their fishes and their plants. Pablo Vieira, the scientist inside the minister that was part of the *Fellowship*, became Vice-minister of environment for three years.

**Figure 7-8:** Good News. UNAL, UAND, UDEA, UEXT, EL ESPECTADOR, UNIVERSIA, were some of the virtual habitats that replicated the feeling of victory at the end of this particular process of policymaking. Many of these textual specimens (approximately 80 per cent published in almost two months following decrees publication) highlight the policymaking as a co-production and good dialogue among Government and Universities. In any of them are reported the new possible problematic situations.

Boletín UN Investiga EXTRA

Año 4 No. 163A  
28 de junio de 2013

Firmados decretos para permisos y colecciones biológicas

### Decretan permiso de recolección de diversidad biológica por diez años

Con los decretos 1375 y 1376, el Gobierno nacional reglamenta las colecciones biológicas y el permiso de recolección de especímenes de la diversidad biológica. Así, los investigadores ahorrarán tiempo y dinero.

BOGOTÁ D. C., 02 de julio de 2013 — Agencia de Noticias UN-

VIVIR 2 JUL 2013 - 10:08 PM

## Menos trámites para investigar en Colombia

A partir de esta semana los científicos que desarrollen estudios relacionados con biodiversidad en territorio colombiano ya no tendrán que someterse al tortuoso camino de trámites necesario para obtener un permiso de recolección de especies biológicas o muestras de material genético.

### Permiso de recolección de diversidad biológica

ARTÍCULO | JULIO 3, 2013 - 8:46AM

Publicado el miércoles, 17 de julio de 2013

### Nuevos decretos regulan la investigación biológica

por Pedro Correa Ochoa - UdeA Noticias

Están listos los decretos que definen los procedimientos para permisos de recolección de especies de la diversidad biológica y el trabajo con colecciones biológicas. Un respiro para la investigación universitaria sin fines comerciales sobre biodiversidad.

Destacados

Año 4 - No. 167  
25 de julio de 2013

Inclusión investigadores UN en permiso marco de recolección (Decreto 1376 de 2013)

## Firma a los decretos para permisos y colecciones biológicas

02 Jul 2013

(0 votos)

### Decretos sobre Colecciones Biológicas y Permisos de Recolección de Especímenes: Incentivos a la Investigación

Nueva tramitología para investigación científica de las universidades Lina María Díaz

Julio de 2013

14 de mayo de 2014

### Nueva reglamentación de permisos y colecciones biológicas

Se firmaron los decretos 1375 y 1376 en los cuales se reglamentan las colecciones biológicas, y el permiso de recolección de especímenes de especies de la diversidad biológica con fines de investigación científica no comercial.

BOGOTÁ D. C., 26 de julio de 2013 — Agencia de Noticias UN-

### Disminuye tramitología para investigación científica

De ahora en adelante, los grupos de investigación de las universidades tendrán mayor facilidad de adquirir el permiso para realizar sus labores de estudio en biodiversidad. Activar Windows

BOGOTÁ D. C., 06 de mayo de 2014 — Agencia de Noticias UN-

All of them now can keep constructing Society by doing Science...

...and all what it implies.

*“Por fin podemos dedicarnos exclusivamente a nuestra labor investigativa con fines científicos sobre la biodiversidad en Colombia. Ya no tendremos que superar las dificultades de trámite para solicitar un permiso de investigación, una licencia o un contrato de acceso a recursos genéticos”.*

Gonzalo Andrade  
Agencia de Noticias UN, 2013

## Perotatio: A Sociologist Closing a Sociotechnical Case... and so?

Eleven, eleven of 2016. Half past ten in the morning and I am in a small office surrounded by papers on shelves for – I know- their proper organization: factures, requests, letters and other papers everywhere which are part of the textual archive of the Master on Social Studies of Science (now on MESC, by its acronym in Spanish), a master offered by the *Departamento de Sociología* of *Universidad Nacional de Colombia* and the repository of the main thesis collection of the Republic of Colombia related to that esoteric topic about Science and Society. In the room, I am not alone: Florecita is writing important things on her computer. She has been a public servant of UNAL for many years, and she, probably, will be the one that will receive the expected complete documentation (Director's approval, jury's solicitude, and thesis!) in order that my textual specimen could be evaluated for experts in the fields associated with the content of *this* document.

But before any approval could be achieved and I could do a dissertation of my research topic of interest in a classroom of my campus, at this moment what I have to do in *this* place is an expected summary with paragraphs with the form of *conclusions* in order to generate an effect of *closing* of this textual specimen. Of course, the important conclusions are the ones that have been generated meanwhile my invaluable readers have been checking the previous sections. The non-explicit ones will remain obscure for me, the writer.

Let us structure *this closing* by making reference to the first thing you probably read about this thesis, that is, its title.

### *Biologists, Policymakers and Other Specimens: A Story about Collecting, Regulating and Social Interactions (González-Medina, 2017)*

The first word represents a scientific community, *biologists*, with their varied beliefs, scientific practices and theories and social demands. For the entire case, they constantly made evident the category they belong and used it as a resource for sustaining

what they did, what should be done in order to change a state of the world to ease their scientific practices, mainly the practices of collecting of biological specimens and using DNA samples. So, the importance given to their membership as scientists and the understanding of their practices was important in order to move from an uncomfortable state to another. But for *moving*, recruiting and problematizing -as mentioned- biologists did not only act as pure scientists. They also were administrators, citizens, victims, victimizers, ecocides, and, some of them, finally, could be classified using the second word of the title of this thesis: ***Policymakers***. They demanded a change in their regulatory affairs, and, for the case of interest, this implied they had to be something different than scientists without giving up its traditional membership. Some of our actors-actants-agents-organisms performed different roles but being policymakers was a practical achievement in order to obtain some of the changes they desired. They wanted to change policies, and they helped to do it as I shown in the last chapter. Two new decrees were born – Decree 1375 and 1376 of 2013- and with them, a new regulatory framework for doing Biology in Colombia. No doubt, a big travel from the first word to the second one. From biologists to policymakers.

Being ***policymakers*** made them responsible for writing a new script for other people like lawyers and scientists. In the end, policies can be seen not as descriptors of what a group will do but as some rules of the game that some players –here the scientists- must followed in order to win (legally). Our protagonists wrote new rules of the game that regulated the scientific practices in question. Though this new decrees are not necessarily a good descriptor of how some communities are going to behave in the future, it was evident that their publication will have some implications in the actions performed by journalists (material for writing “good news”), for lawyers (a new point of reference for regulating and checking scientist’s actions) and scientists (a guide of how to act in some instances and new material for discussing about regulation of its own practices).

When you also gain another identity –as now being considered a policymaker or a politician- then, you are going to start to be judged following what a group believe are the actions, obligations, responsibilities, *nature* this new identity has. That is, the scientists



that were highly involved in the process of policymaking are going to be demanded to act, to intervene, to account, to advise in similar processes. In fact, some of them can feel more comfortable in this “new suit”, so, this can promote their future participation in similar actions. Let us remember that some of our members of the *fellowship of the decree* pretended or continued –if they were lucky- a path of a career with more management and political style (Vice-rectors, deans, presidents of organizations). Besides, if the products of the process of policymaking are going to be conceived as “inadequate”, they – the new policymakers- also have to handle the criticism, especially, of the members of the group they represented. Though this part of the story was not explored here, some of the comments of the people interviewed and other informal conversations are indicative that there are still point for controversy, in part, because not the entire problematic situation was solved (consultation, periodic reports) and, mainly, because there was no amnesty with the illegal material that was collected before the new decrees were published. The cost and the benefit of gaining another identity are that you are going to be more visible for being clapped or accused of doing what you do in this new role. As it was mentioned in chapter one, when scientists go out its republic to another -as politics- it is possible they will be suspicious of being “contaminated” for other ideas, interests and ambitions. Though this was not evident in this case, more investigation, and more time will be needed to capture the different responses to the actions performed in this process. In fact, it is recommended a new research that focuses on the unfolding dynamics that happened after the process of constructing the problematic situation and the resultant decrees.

On the other hand, the part *Other Specimens* of the title of the title referred to those multiple actors involved in the case like indigenous people, journalists, lawyers, environmentalists and their actions’ products, as News, decrees, letters, videos, articles and conversations. In fact, *this thesis*, and the different resources used to construct it is a part of this *Other Specimens*. Here, a specimen can be seen as something similar to that notion of an actor, actant, agent, and the like, that is, as something that does something interesting for our research case. In fact, the writer is another important specimen in the case. Not only because it’s the writer but because he was also a witness, a student of biology, a biologist and someone who supported the changing of the regulatory normative in the

moment of the controversy. The writer of this thesis is conceived as someone important in the construction of this story (Dah!) and, as it is the first time he writes a research of this nature, it was of his interest to make explicit some of his beliefs, experiences in the process of his collecting process and reflexions about the situation by including himself as an issue of the story. By doing this, he wanted to reveal some parallels in his own process and the content of the thesis. That is why he chooses the strategy of *being anecdotic*, writing dialogues in which he was *really* involved, and to put some ironic footnotes in some strategic places. Let us understanding the uses of *irony*, perhaps, as some ancient Greeks understood it: the paradoxical consequences of a line of arguments and evidence. This *ironic movement* can be a serious way to point out a possible incoherence in actor's or writer's points of view or just a comment for leaving space to another possible interpretation.

The writer was showing himself as a collector, a writer, a reporter, a social researcher, but also as a biologist, as a member of the group of interest of his own research. In fact, the strategy of doing some recurrent parallelisms among *doing this research* and *doing biological research* (like in chapter three and four) was also conceived as a way for comparing apparent different worlds: the difficulties, methods and styles that a researcher decides to write about a story of scientists and the difficulties, methods and styles the biologists uses for their own practical affairs. So, the process of the writing and the ways of exposing information in this thesis –especially in chapter three and four- had the intention of getting close to our invaluable readers the forms and difficulties that our scientists of interest have when getting to the problem of organizing information. By doing parallelisms the goal is to focus on similarities but also about potential differences among these worlds. Similitudes and differences among worlds are only achieved by means of using in varied –and similar- ways the words. As many of my actors performed the case in different places and using different ways (News, articles, forums, letters) for changing a state to the world, similarly, I opted for showing these differences by means of writing a thesis in different ways (phylogenies, anecdotes, dialogues, diagrams). My actors were part of dialogues, my actors wrote monologues, my actors were reporters, my actors reviewed information of different sources, my actors talked about people, my actors used a

legal language, my actors used figures, my actors made contrasts, my actors used metaphors. So, I, as Latour would suggest, followed my actors in their different places and decided to show *that* tracking to different places by using different ways of exposing words. That was one way I got the *logos* of my research project<sup>287</sup>.

Newspapers, forums, scientific articles and radio programs, can be considered “truth-spots”, (Gieryn, 2002), places where claims originate and help to construct authenticity and universality, through different ways because of the differences among places. The Newspapers are built by journalists in permanent contact with scholars; as some of the News considered in our case were engendered at universities, and universities are places where science inhabits *par excellence*, these kind of News can use the social prestige that universities have (“you know, I know it because I read it at UNAL newspaper!”). Though this is a hypothesis for working in a future investigation, News coming from academy can look as being “more objective”, based on experts and less unbiased compared to others sources of information. In our case, these News were quite important to expose what scientists believed had to be changed and to recruit people and, as I showed in last chapter, this was used for professor Andrade to show the impact and factuality of the problematic situation to minister Uribe.

Other important places were the forums which constituted stages for performances, for dialogues, for looking each other face-to-face, for feeling indignation but also for persuading people to align to a cause as it was mentioned especially in chapter six. These spots were the discussion places with the “arguments” that legitimate and gave credibility to the entire problematic situation. Besides, dialoguing with the counterpart of a controversy can make people feel more engaged with the demands. The forum at UAND was one important place for establishing the direct strategy to convince people of the high hierarchy of academy (rectors) and of the pertinent regulatory entity (Minister). Chapter seven shown how different people of different universities started to construct a leading

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<sup>287</sup> One meaning of the old word *logos* was *word*, or, it can make reference to *different ways of using those words*. Of course, the meaning associated with that important word in science is that of *reason, account or explanation*. For this case the *logic* of the research is achieved by using *words* in different ways, that is, by showing different *reasons*.

group that would become essential in the process of policymaking. Though, the members of the fellowship of the decree were the ones that will have some degree of social recognition for being directly involved in the writing of the new decrees, it is also true that many “invisible ones” were highly involved (for example the people of PLEBIO and members of MADS and IAVH). One more time, this thesis is incomplete for not considering other possible participants as main sources and members of my own textual collection<sup>288</sup>.

In each spot, we have also seen, by different narrative styles, mobilisation of allies, as represented at the forum where the people from ministries were engaged to do something for Science and Development. In those different places, we found common specimens, like “Gonzalo Andrade” who can be conceived –doing some taxonomy – as a *hybrid social actor*, that is, a scientist, a policymaker, a journalist, and administrator at the same time (Wynne, 1992, p. 750). That position among worlds, Science and Policy, Media and Forums, give him power and more authority because he has been playing as a scientist, as a witness, as an administrator, as a policymaker and as a promoter. By performing different roles he became a considered expert in different stages. The heroes exist in the sense that they are considered that way for a specific group of interest. No doubt, Andrade was considered important in the development of this case but, his “dark side” has to be a source for another discussion, let us remember that he was also involved in the construction of the first decree (309/2000) that was considered problematic. Besides, he has been accused by some “invisible members” of biology as someone with political, and even, economical interests. This “dark side” of our hero, of course, is not sustained here. Just some insinuations were collected in order to have into account in possible future inquiries.

Probably, there is a word in the title that could not be considered comfortable for some readers of this thesis. That is precisely the word *story*. *A Story about...* Is this literature? Why not choosing the most respectful word *History*? Was this thesis *history* or

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<sup>288</sup> No process of *collecting and analysing* is as complete as you would like to, but only my invaluable readers will determine if it was, at least, enough for now.

*a story*? Perhaps, neither of both. Is *Story* for *history*, what *Alchemy* is for *Chemistry*? The first is presented as something fancy, with much more incongruence and fictional content; the later as more academic, real, and trustful. But I have been honest (see Chapter five). I am pretty conscious that this writing is the product of reading some material that, in any way, can be seen as more realistic or more fantastic. Someone can argue that I wrote a history but I cannot pretend that *this* textual specimen is a reliable representation of a *real specimen* habiting out there. No. This textual specimen was born in my computer. But it was conceived in a process of connecting my computer with many other places in the world (in the world out there?). The local with the global. But also by connecting the *fancy* with the *real*<sup>289</sup>. The point here is that I chose to say that I was going to construct a story because I have no formation for constructing *the history*, even, if have brought some elements here for it. On the other hand, some elements of this thesis cannot be considered descriptive a reality in a classical sense because of some episodes and dialogues, especially those exposes on chapter five (The Z event), though were based on some material that habits other places of the world, they were a real fantasy. Does it matter here the discussion about this distinction? I do not really know it. What really matters is that you, my invaluable reader, could be affected, in some way, by reading it. In that sense, chapter five –“the most fictional”, represented not only a plausible situation but was a way *to embody* some specimens a caught in the unfolding of this research, and even, my own experiences when being an undergraduate student of biology. So, though I do not want to compromise “the Z event” as a realistic description of *what-really-happened*, it was designed for illustrating a situation *on the field* of our case and, at the same time, for exposing some practices, exercises, methods and problems biologists have when doing *collecting work* for educational and research purposes. This *collecting work*, as explored in chapter two, was also a topic for associating different worlds and something that deserves further exploration.

In this story, it was necessary the *collecting* of arguments, contrasts, commentaries, signatures, allies, and other elements, for constructing a solid *problematic situation* which

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<sup>289</sup> Perhaps, it is quite irrelevant to consider this as *history* or as a *story* (perhaps this discussion would not exist in Spanish). A term in between could be interesting. Something like *Istory* just for a further discussion. This does not really matter.

revealed as an obligatory process the changing of the regulatory framework of some scientific practices. *Collecting* process is not just a previous phase for research but a topic itself full of experiences that deserve wider analysis. The change on normativity was indispensable for many of the actors involved in order to surpass their problematic situation: for the *Ministerio del Interior* there was the problem to make respect the consultation process from part of academy and with it, ethnic community rights; for the *Ministerio de Ambiente*, there was the problem of increasing results in biodiversity research which supposedly will have an impact in the progress of society and as a way of showing to the government and other instances good management and good politics for science and nature development; for biologists there was the problem of paying, wasting of time, being in illegality, etc., if they wanted to research in a juridical right way. These actors could assure different goals if there was a change in the decrees. By achieving that change, the entire process and products were conceived, in general, positive. MADS got academic allies, especially Juan Gabriel Uribe, in those days a new Minister; besides, the Ministry has, in potential, more results coming from basic research to fulfil its missionary goals; Scientists now could research without investing too much money, time and bureaucratic processes. So, in the end, their alliances look to benefit each other. Though, as it was pointed out, a possible *emergent problematic situation* could arise because of the new challenges and problems that were not solved, especially the lack of amnesty for the specimens that were collected before the publication of the Decrees 1376 and 1375 of 2013 and even, how these new decrees were “deviations” of the international agreements that the Republic of Colombia had agreed with other countries, especially in the case of Andean Decision of 1996.

The newspapers, the videos, the audios, the forums and the conversations, as I intended to show in an impromptu way here, give us incredible material to analyse this *language uses and transformations* that, of course, will nurture a most interesting story. What are the differences to show a problematic situation in a News, a lecture in an academic event, a scientific article, an interview or in a video? How each of these *vehicles* helped to construct the problematic situation? What are the rhetoric dispositive use by them? The chapters elaborated here -though did not solve those questions in a rigorous way- brought

some elements to assemble a story of problems which allow me to examine some of the features of every specimen related to our case in question. In this story, it was also evident that, in those different vehicles, the actors –myself included- constantly were defining boundaries and establishing the frontiers of their republics. As Jasanoff stays (1985, pag. 199): “many of the boundary disputes between science and policy are played out in the realm of language”. Meanwhile considering the specimens in this research the *differences* appear as delimitations stated by actors, but in any moment we can consider ontological *worlds, republics, circles* and the like. No map to go to one reign to another, just people talking about diverse issues. The worlds exist but in the words. The different specimens used different words and rhetorical dispositive in order to persuade their intended public. By means of contrasting among situations, enlisting problems and benefits, quoting relevant people or relevant documents, showing a big tendency, showing serious gestures, exposing numbers, handling legal terminology, exemplifying with sad stories, etc. All this help to construct the problematic situation and help, at the same time, to configure the expected solution.

When tracking a case, it is inevitable to see patterns among the specimens considered. This was a constant work in this thesis as it can be evident when many different topics appeared in one chapter and another. Here *redundancy* is relevant. Redundancy allows “one thing” to be replicated in other habitats and also becoming more available for its use. What we call *genes* would not have existence if *genes* would not replicate. Here the traits present in different specimens have a physical replication and a literally one. Of course, without replications things like “matar por matar”, “Ministerio de Ambiente”, “3,5 para obtener un permiso” would not become facts. Facts are facts, in part, because they are redundant and, if they become redundant, in respectable newspapers, in the words of experts, scientific articles and in legal papers, its capability of persuasion becomes too high. Though this was not a polemic and popular scientific case of a wider public attraction (like global warming, transgenic food or the extinction of sea turtles), the redundancy in some varied specimens helped to mobilize people and to change some of the demanded issues of the case. So, to duplicate in different vehicles was important for a group of interest to get to the places and to the people required.

We can say that our case was also a story about *regulating* scientific practices. The goal of many of our main characters was to change a regulatory framework in order to ease scientific activity. Though the regulatory process can involve different phases each of which are important in order to achieve the required change, this story focused on the construction of a problematic situation, which, was a phase of the regulatory process indispensable for the constructing of the new normativity framework of regulation. However, the story cannot be understood just as a sequence of phases like the next one:

**Identifying a problem -> advising process -> Policymaking -> Change on normativity**

Too simplistic for being the truth. Regulatory processes are not just a strict chain of events in which a problem is identified for experts and then an advising process is required for performing a change. In fact, we can say that putting this story of regulation in a single sequence is not realistic. *This story was branching*, that is, each part of it, instead of consisting of a series of events, one preceding another in a coherent and deterministic way, was a process that requires the multiplication and, at the same time, unification of a series of ideas and events for showing a coherent but diverse situation. For explaining a little bit better this point, let me say first that this story was branching in two different senses: first, it was branching in the sense that some of the actors involved associated their respective starting point of the situation with other events, problems, and topics. For example, associating the topic of mining and its assumed advantages if we compare that practice with the one of collecting with scientific purposes. In order to validate the association, it was necessary that, our actors, explore a little bit the topic of mining, so that they could find information that could be used in order to execute a contrast with a negative balance for science but the contrast itself was positive in the sense that it becomes something you can use to construct your problematic situation. By doing this association, we can see it as a *branch* in our controversy, something that makes part of our *tree* that if it is explored and used in other ways, can grow and becoming an increasing part of the controversy. In fact, multiple interpretations that our actors made of one relevant topic were also multiple which constitutes another way of *branching* the situation under analysis. Other starting



points have made our actors to associate the problem of collecting biological specimens with other topics as we have commented in the previous chapters: consultation with ethnic communities, accessing to genetic resources for commercial purposes, establishing priorities of development in our country, innovation and economic growth, among others. Each association can bifurcate in other little branches, making our tree even much dense, even if it is explored superficially. The entire text is a brief exploration to some of these many topics and its multiple associations.

Second, this story is branching in the sense that the writer did not follow a specified and preconceived sequence of events strictly. In fact, when reading, researching, analysing, talking, many bifurcating situations had to be confronted for him. Though the thesis can be conceived as a sequence of chapters, in fact, it is bifurcating everywhere: every chapter has many sections, every section has many footnotes, and many footnotes have references, ideas and suggestions not very well explored. Each section has a bunch of associations, places, contrasts, events, and other ideas. Of course, any writing is expected to be subdivided in others. What makes them part of a tree is the product of the work of the writer in order to establish not only a hierarchical organization of topics but the different relationships among them that, in some way, justify its presence in the text. The videos made a branch. The videos and the letters were classified in chapter six. They were similar in the problematic situation they exposed but different in the way they were constructed, structured for the public they were directed. Chapter three and four were two big branches: the first was forced to bifurcate in order to establish a way for structuring a story of News, *a systematics*; the second was *the natural-history of a problem* that revealed another branching pattern. Chapter five took some Bad News and interviews to generate dialogues, that, can multiply opinions by bifurcating the voices (dialogues allow the participation of multiple voices, in different ways, traditional academic monologues tend to have a linear and more predictable sequence of events). A story like the one that has been written here had as a starting point the interest of its writer about a problem of a scientific community when he once read a “Bad News”. After that, he, the writer and one of the main co-builder of this story of *collecting, regulating and social interactions*, then started to follow different trails, different specimens that, for him, showed a resemblance each other. But

when constructing this story, each specimen offered not only similarities with others but also differences, and as the *research* -the main form of constructing this story- unfolded many ways for exploring and analysing the growing textual collection were conceived, some of them were followed, and other were abandoned. In that sense, the starting point, with all its specimens, with the ways followed and those that have the potential of enriching this story, all of them constitute also a branching pattern. The forums, the articles, the News, the interviews, the conversations, the imagination, all were different branches, all of them were grouped in different “clades” (sections of this thesis), even the footnotes, are a structural part of this *tree of specimens* that constitute this story.

Creating a branching pattern is complicated and frustrating if you want to *close* a text. But it is stimulating if you wish is to connect even more different branches to a single tree. What is interesting about getting a branching pattern instead of a mere sequence is that we can start to see the possible stories that can be written. In fact, using the same tree, we can explore one branch more than another. As it was evident when I explained my Systematics of News, the possible arrangements of different specimens are incredibly high. Similarly, the resources and their organization in this thesis could have been written in quite different ways.

*Research is a branching process as it is life.* But any process has limits, constraints for its development. A tree can always grow a little bit more. Branching is a symbol of a widening, aperture but also of connection. Here, social interactions are the causal factors of our tree growth but also the constraining factors for doing or taking decisions to promote particular ways of interactions. No doubt, future interactions would allow doing a little bit more.

Is not doing-research as a growing-tree?



**THE END**

## A. Annexes: A Radio Bonus: Order *On-Air*. Thinking On Social and Interaction Structures.

This Annex is part of the story –another branch- that was created for the subject *Discourse and Interaction of professor Malcolm Ashmore*. As this pretended to be the initial *seed* for a piece of work dedicated to conversation analysis but it was not developed it is just put as an annexe of this text. Would you like to read it?

*“Con los que saben”*  
A Radio Programme Host

### Introduction

To get *a lot* from *very few* is what many conversational analysts try to do. Analysing “ordinary” conversations or a particular *context configuration* that endures ten seconds can be enough for writing a paper and sending it to a journal like *Discourse and Society*, *Human Studies* or for a final work for *Discourse and Interaction*. But analysing a non-natural occurring event –in Conversation Analysis (CA) orthodoxy- as a *planned* radio programme that *longs* 3575 seconds can be problematic and perhaps it can be considered too long for a proper analysis from what I will call, from now on, a *natural-not-too-long-data perspective*, that is, a perspective that can consider that a *proper* Discourse or Conversation Analysis can be done only to empirical data considered *naturally-occurring talk*, the *base of social action*, and *temporally very short* (from a pair of seconds to maximum a pair of minutes). How short must be the material for a conversation/discourse analysis? When are we on the micro or the macro social world of interaction and what kind of information and interactions come from these recalcitrant worlds? What is the proper temporal interaction unit if there is such? How to handle a long non-natural conversation as a radio programme?

In this three thousand words, *plus* a little bit, essay, I do not pretend to solve any of these questions exposed above and that is because I think those are probably the wrong ones, or perhaps not very useful. Instead, I will discuss some ideas based on what has been transformed-by-interaction from *Discourse and Interaction* sessions (Ashmore, 2014) related to the problem of doing analysis from a *non-natural-too-long-data*. Of course, I

will not only do some *taxonomy*, i.e. applying some supposedly learnt categories to the case, but -as usual in an academic document trying to being interesting- I will try to relate some concepts with some ideas for doing something with a material with the mentioned characteristics meanwhile discussing some other issues of possible interest for discourse analysis. For this I am going to use and explore, but not to properly analyse<sup>290</sup>, a recording of a radio programme named *UN Analysis* which registered what we can categorise as an interview . This programme was presumably done on 24 of July of the year 2013, 7:30am, at National University of Colombia (Bogotá D.C.). In this radio session some scientists – and a pair of short-lived conversationalists- were invited to talk about a change in normative that regulates biological collections and collecting permissions in Colombia and other interesting and non-interesting topics.

**Figure A-1:** The Radio Program. From left to right: Carlos Caicedo (the intermediary), Gonzálo Andrade (The main Hero), Guillermo Parada (The Host-Fan)



<sup>290</sup> Rhetoric dispositive of modesty and precaution.

### Some Considerations for thinking Analysis

If you study interactions you will have to interact. If you will see categories is because you'll categorize. If you want to study a discourse you will surely built at least one. For analysing we interact with different material, people, we categorise, use ethnomethods -as talk and writing- and have some ideas of how an analysis should be. For approaching discourses and interactions, as the radio programme consider here, it will be take it into account the following considerations:

*i) It is natural not taking care about what is natural.* If there is a difference between a *natural* (like saying “hello” to my mom at morning) and *non-natural* occurring conversation (like one that involves a UFO-in-interaction), it is something we have to define *a posteriori* and not *a priori* but, on most cases in doing analysis this distinction – between natural and non-natural- will not be of any interest –unless *interactants*<sup>291</sup>- take care about it; this approximation is useful in the sense that the presume distinction will not constitute an impediment for considering a material for an analysis. In the present case, I've considered a radio programme which perhaps for some analysts could not be considered a proper material: *ii) Planning to exclude what is too planed.* It occurs in a place where occurs things like interviews – a radio station- whose structure is presumably very planned (questions, guests, interventions, music, possibility of post-editing) but that also has a component of improvisation due to the emergent sequences can appear in talk-in-interaction in the moment of interview; *iii) Odd material promotes order and interaction.* The recording material does not only involved people talking about an issue – biological collections- but things as “music”, that is a nonverbal component, an what I will call a presumably “recording inside recording”, that is, some sequences that has an order and a function in the hole structure of programme but its phenomenological dimension can be placed on an older temporally emergent situation. Saying it in other words: a recording that is used in things like programme radios when recording another social interaction (“recording inside recording”). *iv) Widening possibilities of analysis.* If a *Talk*, face-to-face, moment-to moment, with a big component of improvisation, can be consider a way

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<sup>291</sup> Horrible hybrid among ANT and CA?

of acting, an ethnomethod, a structured and orderly phenomenon proper for analysing discourse and interaction then, as an *a priori* posture, any other kind of phenomena where humans are involved can also be consider to have the same mentioned characteristics and possibilities of analysis, even if it is a play, a king discourse<sup>292</sup>, an *Interview* in a radio programme, etc; this consideration is useful in the sense it can promotes a researcher attitude of looking in different sets of interactions order and structures that defines social actions. An example of this consideration is given by Michael Mulkey when considering the interchange of “stoichiometry letters” between biochemists Spencer and Marks, although *that* cannot be consider a conversation – at least in usual sense- Mulkey points out some parallels between a classic conversation and his non-conventional material such that “both are made up of a series of distinct, ordered turns” (Mulkey M. , 1985), so in this particular case, there are mechanisms of turn-taking, but, as expected, there are differences proper to the particular characteristic of this set of interactions; *iii*) here the distinction between Micro and Macro social worlds are as useful as the distinction between natural and non-natural and, here I will not say that a conversation of 10 seconds or an interview of an hour is a micro because of its relative short duration respecting to time; micro or Macro can be of consideration when distinctions related to this dichotomy can also be considered important to interactants; *iv*) Although interactions frequently evoke responses on both sides and frequently evokes responses in sequences where interactants appear more than once, sometimes are elements in an interaction where some action is produced and even can stimulate an interaction but that cannot be a constant feedback are being is to happened non only in cases where sequences of actions are temporally very close.

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<sup>292</sup> Holy CA father Harvey Sacks says (1992) that “things like an exchange of greetings are kind of ideal rather than, say, the discourse of kings or salon conversations, where we know in the case of the latter that it’s important and interesting, and it’s very hard in the first instance to ignore ‘what they say’, which you have to do” **Fuente especificada no válida.** Though “greetings” are important material here I ignore Sack’s paragraph and will not consider a particular set of interaction as an ideal set for doing analysis. No kind of material must be ignored for potential scrutiny – the only valid criteria, the research interest- and its grade of importance or interest is something can also be studied or assess.

**Order-On-Air**

Let's consider the next fragment which constitutes the first set of sequences of the radio programme to exemplify some aspects of structural order in a radio programme<sup>293</sup>.

**Fragment 1**

- 1 **Narrator:** [( ) Nationals and internationals (.) problematic and political social scientific economics and cultural facts that constituted news (0.5) today (.) in an analysis (.) the advances discoveries causes and consequences of science technology and innovation]
- 2 [((music))...]
- 3 ((MUSIC))x(19.7)
- 4 **Host (Guillermo):** ladies and gentlemen good morning (0.3) this is thematic segment of un analysis (.) before starting the topic (.) un radio through the journalist Julio Casas is developing a project with the issue history of conflict (.) with a serial it is explained the country (.) what has happened (.) and this is me:mory (0.3) let us listen the first clip (.) of professor Dario Fajardo (.) a work of unimedios about history of conflict
- 5 (1.7)
- 6 ((MUSIC))x(3.8)
- 7 **Narrator:** [Histories of armed conflict and peace processes in Colombia]
- 8 [((music))...]
- 9 ((MUSIC))x(2.7)
- 10 **Narrator:** [Dario Fajardo (.) researcher of agrarian problematic in Colombia]
- 11 [((music))...]
- 12 ((MUSIC))x(1.8)
- 13 **¿Fajardo?:** when the conflict comes among other parties (.) the liberal party (.) the conservative party (...)
- 14 ((MUSIC))x(2)
- 15 **Narrator:** [web un radio (.) on line (.) with the academy]

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<sup>293</sup> My unique reader should first go the section ANNEX A before "reading" *Fragment 1*.

- 16 [((music))...]
- 17 ((MUSIC))x(1.8)
- 18 **Host (Guillermo):** and we will keep listening with Cesar Ayala with Camilo Gómez with Professor Dario Fajardo (.) rigorous work (.) interesting work that will constitute a milestone in what represents armed history conflict analysis in Colombia (0.2) professors good morning
- 19 **Caicedo:** good morning Guillermo
- 20 **Andrade:** good morning Guillermo
- 21 **Host (Guillermo):** the topic about we are going to talk today is about the topic of the decrees for permissions for biological collections (.) these are two decrees that have just been published from Environment Ministry (.) Claudita who have we invited
- 22 **Claudita:** Today we will be accompanied by Diana Álvarez from Universidad Javeriana (.) Felipe Alfonso Cardona from Universidad de Antioquia and profesor from Universidad Nacional de Colombia Gonzalo Andrade (.) Alexander Gómez and Carlos Caicedo
- 23 **Host (Guillermo):** the ministry of environment has just sent out two decree (.) 1375 and 1376 by which it is ruled biological collections and permission for specimen collection (.) of species of biological diversity with noncomercial but scientific purposes (.) and this is breaking a breach and a cap that existed for scientific research in Colombia (.) professor Gonzalo Andrade welcome to your radio station (.) professor of Natural Science Institution of Universidad Nacional (.) welcome professor
- 24 **Andrade:** Thank you very much Guillermo
- 25 **Host (Guillermo):** professor Carlos Caicedo
- 26 **Caicedo:** Good morning Guillermo (0.4) respecting to this issue (...)x(35) professor Andrade how do you see this initiative
- 27 **Host (Guillermo):** I think it would be very good that we start telling the problem and what had to live Colombian researchers (.) let us start with the bad because it is how was said yesterday in republic congress (.) we have complete right of



complaining (.) we have complete right of protesting but we also have to build and I think this is an example of construction

28 **Andrade:** Completely agree Guillermo (0.3) what we lived in Colombia (...)

The recording starts with a person talking about an introduction of what it is about the programme named *UN Analysis* (Line 1). If you just take into account Fragment 1 to answer questions like: is this person –Narrator- on the same place with the other people at the moment he says what he said? You probably will not have many elements from conversation itself to deduct that. Because of that impossibility of getting everything from *inside* conversation I consider an important aspect for any kind of analysis: *comparison among sequences, which can be consider a way to treat the old problem of context, or the information located out there*. Looking at other programmes of *UN Analysis* I could found other recordings with the same person –or at least with a very similar voice- saying the same words, and quite important, in the same place of the order of the programme, that is, at the beginning before any other person intervenes. What is also noticeable is that when this person – I’ve named Narrator- talks, there is always a complete overlapping with music and always his intervention preceded an instance of “music” presented after his intervention as the only source in the sequence. That is evident in lines 1-3, 7-9, 10-12, 15-17, which are also the only sequences where the Narrator “appears” in the whole programme. Here we have for this case an adjacency-pair, but not a “natural” one or better, a non-classical adjacency pair (as *Greeting-Greeting, Summons-Response, etc.*), but what it’s important for me is its orderly structure and co-existence in other structures of order (for this kind of material, in other radio programme of *UN Analysis*). The sequence “Narrator talks(N) + music(m)” is a structural finding but, what can be the role of this structure? Well, that is something difficult to assess, but just for saying a pair of possibilities: *i*) the dyadic structure *N+m* can function as an *aesthetic opening* for some other talk, for example in Lines 1-3 it can has the role of an opening for a complete programme but using a list of the kind of topics and associations the programme can managed, so it’s a persuasive, that is, a *rhetoric dispositive of listing* interesting topics (politics, science, innovation, technology...); Lines 7-9, and 10-12 are also an opening and introduction for a topic –that in this case is not the central programme topic, but

something to promote- and an actor important in that mentioned case; *ii*) the dyadic structure as a *gap* that anticipates other kind of interventions, so although it can be consider as an inert sequence of interactions, because Narrator and Music cannot properly interact, but here they structure subsequent interactions, that is, its order of appearance are not random and can promote a specific action from someone, being a producer in the radio station that has to be ready to put a record, a sound effect or to allow an interactant to Talk-On-Air. For example in Line 18, the host, Guillermo intervenes after a N+m sequence, he did not interrupt any of these sequences and his intervention also acts as a *mechanism of closing* for all this preceding section. Placencia (1997) has noticed that – for an Ecuadorian case- Greetings and farewell can be considered rituals that mean affections and not as only closing mechanisms (Placencia, 1997, pág. 56), here Line 18 Guillermo is responding not to a conversationalist but to a “recording inside recording”, and directing his utterance to an audience and the other present conversationalists, and he do this and at the same time he makes advertisement effort, making the promise of future interactions with the advertised programme of history of conflict showing some kind of affection with it and its protagonists. Besides that, in Line 18, after (closing + advertisement), we have a “Greeting”, directed specifically to a particular group “professors”. Previously the host had already utter a “Greeting” (Line 4) but, it was associated to a wider category “ladies and gentlemen” that we can suppose can include any professor. So here we have two kinds of “Greetings”, a first directed to a more general group, “ladies and gentlemen”, the second to a more specific group, “professors”, but the difference is also in that the first “Greeting”, Line 4, does not expect another “Greeting”, so from *talk-in-non-interaction*, the utterance “ladies and gentlemen good morning” has the role of “welcome” to the audience is going supposedly (a host supposition) to hear in-the-moment, or in-the-future the radio programme. Then, this first “Greeting” is not a first pair part, the second Greeting (Line 18), on the other hand, is a first pair part followed by preferences structures, as shown in Line 18, 19 and 20.

### **Members and more Greetings**

After this last greetings, the host (Line 21) makes another introductory explanation, referring, at last, to what is supposedly the main topic of conversation, so, this is an

instance of proclaiming and stated a desired order in conversation for the programme: “the topic about we are going to talk today is about the topic of the decrees for permissions for biological collections”. Of course, as expected in natural and non-natural occurring events, improvisation emerged in other instances of the radio programme which cut short the host expectation. Besides, Line 21 also registered a suggestion for intervention, that is, a *summons* to participate via answering what can look as a question “Claudita who have we invited”. But it could be strange –not ordinary- to consider that the host does not know who are the other people invited. Taking into account just this conversation, remember that host (Guillermo) already knows a topic for talking and also has given specific Greetings (“professors good morning”) which indicates that he already know, at least, some important characteristics of the guests and membership categories. His utterances has as a response in which Claudita renders a list of people and its respective institutional associations, so these interactions (Line 21 and 22) are not correspondent to (question + answer) adjacency pair but as a way to categorise the expected topic of the programme, to categorise the interactants –professors/members of different institutions/guests and, perhaps, a way to introduce another interactant -without saying “hello”-, Claudita, whose membership is never explicitly state, directly or indirectly, and that also has just one intervention (Line 22) of almost 200 interventions that are in the entire programme, but as the host call to her for giving specific information in an informal way, using a diminutive for her name (in English: little Claudia?), at least it can be inferred that she is not a guest, she is someone who is able to categorise properly the guests and she is someone known to host, because of the way he begins interaction with her, without greeting but with a summons and not having a dispreferred action from her for that. On the other hand, the information given by Claudita is also an *expectation* to audience in the sense that we can expect who is going to be the people to have some kind of interaction and, specifically, who is going to *talk*. And here is where analysis of the complete set of information render by the recording is quite important (a Macro movement?). First, when the host made a Greeting directed to professors, only two of them answered immediately, which are here categorised as Andrade and Caicedo because his voices coincide with those ones that are evoked in Lines 23 and 25 when, one more time, the host give specific Greetings –that here has the role of insinuating particular participation- and for analysis give us a

possibility to render names to interactants and its interventions. Second, in posterior sequences of interaction, two other interactants appear in different occasions (see Lines 79 and 115 in ANNEX B), the boss of Herbarium of Antioquia University, Felipe Alfonso Cardona, and another member of what I call the *Fellowship of the Decree*, professor Diana Álvarez, another scientist from Javeriana University that was part of the team that change the today old decree 309/2000 that regulated biological collections and collecting permissions. But, Claudita in her lonely Line 22, she, besides presenting the already mention interactants, she mentioned Alexander Gómez, someone that, looking at talk-in-interaction-on-air, was impossible to detect. What happened then? Some possibilities: *i)* He talked but has a similar voice to other identified interactants and the interactions where he was involved could not revealed easily by analyst; *ii)* He was there as a guest but many dispreferred actions were performed, especially for the host that ignores him, not saying to him “good morning” or similar in any time and never a question which makes him a mute, so for even if he was there, he is not interesting for doing interaction analysis; *iii)* He was never there and Claudita anticipated an expected intervention that failed. Thinking ordinary makes me incline for the third option but for choosing one of these options, will require some analysis of other kind of material such as interviews to the interactants.

### **Preferred and dispreferred interactants and actions**

Another interesting aspect that I will consider very briefly is that some actions, looking the entire material and the micromaterial, look to be more redundant than another. For example, from almost 200 interventions and possible pair parts for things like “greetings”, “summons”, and “questions” and “assessments”, all were almost preferred actions being detected two possible dispreferred actions in the entire programme. One can be seen in Fragment 1, Lines 26 and 27. In this case there is a pretended question from Caicedo directed to Andrade but the Host (Guillermo) interacts at that moment suggesting a changing of topic. To this Caicedo does not respond anything which can be taken also as a dispreferred action (see Pomerantz, 1984) but in the context in which host look to do a great effort to direct order and guide conversation topics, his role could render him as an element accepted for this kinds of corrections. So, Caicedo does no say anything and Andrade agrees with this turn in conversation suggested by host. In fact, this example also

give us with the impression that in talk-in-interaction or interview-in-interaction the number of preferred and dispreferred actions and the interactants they involved, can help us to identify preferred and dispreferred interactants, the ones that talk, the ones whose utterances are most likely to evoke preferred actions. Professor Caicedo participated fleeting in the entire show: Only four interventions, including the “Good morning” part and the one that evoked the dispreferred action from host. His other two interactions were not a response to a question from host but as a pair of utterances supporting and giving extra but not solicited information. He is, from categories proposed, a dispreferred interactant. On the other hand, most of the interactions are constituted by the duo Andrade-Guillermo (sequence A-G is present 79 times in the entire sequence of interactants of 101 duos). There are overlappings and they generally indicate clarifying questions and providing extra information. Besides these frequent interactions (mainly questions-answers, and assessment-agreement) in no occasion were evoked dispreferred actions among them. And this result, for this radio programme, make Andrade and Guillermo not to be only a guest and a host but to belong to a shared category, given some interactional properties and preferred actions that will have to be explored properly somewhere else: *they are allies*. In fact, more generally, the order of this radio programme is an order highly directed by the host and with glue constituted of *agreement*, mainly, among a visible dyadic interactants.

“Por fin podemos dedicarnos exclusivamente a nuestra labor investigativa con fines científicos sobre la biodiversidad en Colombia. Ya no tendremos que superar las dificultades de trámite para solicitar un permiso de investigación, una licencia o un contrato de acceso a recursos genéticos” (Gonzalo Andrade en: Agencia de noticias UN, 2013)

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More to say but no more time and space, for now.

## ANNEX A-A (THE ANNEX A OF THE ANNEX A): Transcription notation

The conversations considered have used the transcription notation mainly devised by Gail Jefferson that can be consulted in *Human Studies* 9:109-110 (1986). But I also have to introduce some notations that I have implemented in this essay. As the exploration of material was made in Spanish, I did not indicate in the fragments presented things like intonations, upward or downward intonations due to changes in translation process that make difficult if not improper the transcription of these into different words and orders of syntactic structures.

(((music))...]

Hand brackets with ellipsis inside indicate a complete overlapping with previous intervention. In the case presented we have a nonverbal action, music, that can be heard meanwhile someone is talking. As “music” is a nonverbal action it is enclosed in double parentheses as it is usual.

((MUSIC))x(19.7)

A fragment of talking or nonverbal action within parentheses followed by an “x” and then a number in brackets indicate that the referred talking or nonverbal action endures the time indicated with the numbers. In the example, it indicates that there is a MUSIC with stressed relative volume - that is why it is shown in capital letters- that lasts 19.7 seconds.

¿Fajardo?:

Question marks that encompass the name of an interactant indicate that its identity is questioned because there is no direct pointing in interaction about its membership but there are some kind of clues that can make a particular name a candidate.

(...)

Ellipsis in brackets indicates that there is conversation that continues but that will not be shown

## B. Annexes: Some Specimens, Habitats and Events (a boring table!)

Año	Mes	Día	Título	Autor	Medio	Enlace
2000	febrero	25	Decreto 309 de 2000	MADS	MADS	¿?
2006	Artículo académico		Señor ministro, ponga usted fin a la ilegalidad en la investigación"	NEMOGA, G	UNAL	<a href="http://www.bdigital.unal.edu.co/13157/2/518-3754-1-PB.pdf">http://www.bdigital.unal.edu.co/13157/2/518-3754-1-PB.pdf</a>
2006	julio		Es responsabilidad de todos resolver el problema de acceso	NEMOGA, G	UNAL	<a href="http://www.bdigital.unal.edu.co/13148/2/508-3339-1-PB.pdf">http://www.bdigital.unal.edu.co/13148/2/508-3339-1-PB.pdf</a>
2007	Artículo académico		ILEGALIDAD DE LA INVESTIGACIÓN GENÉTICA EN COLOMBIA	Diana Gómez, Gabriel Nemoga	UNAL	<a href="http://www.revistas.unal.edu.co/index.php/peju/article/view/38610/pdf_266">http://www.revistas.unal.edu.co/index.php/peju/article/view/38610/pdf_266</a>
2009	Mayo	21	Foro Marco legal y alternativas de aplicación a los trámites de permiso de investigación y acceso a recursos genéticos sobre biodiversidad, en áreas de influencia étnica. Estudios de caso"	UNAL, Universidad Jorge Tadeo Lozano, MADS	IMPRESO	¿?
2009	Noviembre	8	Científicos, a punto de recibir laboratorio por cárcel	Carlos Andrey Patiño Guzmán	UN Periódico	<a href="http://www.viceinvestigacion.unal.edu.co/VRI/files/docs/Propuestas/UNPeriodico128.pdf">http://www.viceinvestigacion.unal.edu.co/VRI/files/docs/Propuestas/UNPeriodico128.pdf</a>
2010	Marzo	31	La Investigación sobre Biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la Decisión Andina 391 de 1996	Vanegas Araujo, Pablo Andrés Vallejo Trujillo, Florelia Rojas Díaz, Dalí Aleixandra Pinto Beltrán, Linda Érika Lizarazo, Oscar Andrés Oscar Fernando, Jiménez Ariza Chaparro-Giraldo, Alejandro Ávila Sánchez, Leidy Andrea Blanco Martínez, Jennifer Teresa Nemogá Soto, Gabriel Ricardo	UNAL	<a href="http://isbn.camlibro.com.co/buscador.php?mode=buscar&amp;code=978-958-719-447-0&amp;tit_nombre=&amp;col_nombre=&amp;tit_IDmateria=&amp;idiomas=&amp;tit_date_apar=&amp;D_sigP=%3D">http://isbn.camlibro.com.co/buscador.php?mode=buscar&amp;code=978-958-719-447-0&amp;tit_nombre=&amp;col_nombre=&amp;tit_IDmateria=&amp;idiomas=&amp;tit_date_apar=&amp;D_sigP=%3D</a>
2010	Abril	10	A los candidatos presidenciales no les importa el medioambiente del país	Gonzalo Andrade	UN Periódico	<a href="http://www.unperiodico.unal.edu.co/dper/article/alos-candidatos-presidenciales-no-les-importa-el-medioambiente-del-pais.html">http://www.unperiodico.unal.edu.co/dper/article/alos-candidatos-presidenciales-no-les-importa-el-medioambiente-del-pais.html</a>
2010	Abril		Reunión presidencia de la república	Gonzalo Andrade	<a href="http://www.bioeconomy-alcue.org/bioeconomy/doc/La%20bioeconomia%20en%20Colombia-potenciales.%20opciones%20y%20posibles%20impactos_G.ANDRADE.pdf">http://www.bioeconomy-alcue.org/bioeconomy/doc/La%20bioeconomia%20en%20Colombia-potenciales.%20opciones%20y%20posibles%20impactos_G.ANDRADE.pdf</a>	¿?
2010	Diciembre		Desencuentros institucionales sobre la investigación en diversidad genética	Rojas Díaz, Dalí Aleixandra; Nemogá, Gabriel R	Revista Colombiana de Biotecnología	<a href="http://www.redalyc.org/articulo.oa?id=77617808001">http://www.redalyc.org/articulo.oa?id=77617808001</a>

2011	Julio	?	Conferencia	Gonzalo Andrade	Instituto de Biotecnología, UNAL (Bogotá)
2011	Agosto	?	Conferencia	Gonzalo Andrade	Instituto de Ciencias Naturales, UNAL (Bogotá)
2011	Agosto	?	Conferencia	Gonzalo Andrade	Expouniversidad, UdeA 2011 (Medellín)
2011	Septiembre	29 a 7 Octubre	¿?	¿?	Expouniversidad, UdeA 2011 (Medellín)
2011	Octubre	?	Conferencia	Gonzalo Andrade	Foro de la Asociación Colombiana de Facultades de Ciencias (Medellín)
2011	Noviembre	?	Conferencia	Gonzalo Andrade	Academia Colombiana de Ciencias Exactas Físicas y Naturales (Bogotá)
2011	Noviembre	?	Conferencia	Gonzalo Andrade	Consejo Nacional de Ciencia Tecnología e Innovación Colciencias (Bogotá)
2011	Noviembre	?	Conferencia	Gonzalo Andrade	Junta Directiva del Instituto Alexander von Humboldt (Bogotá)
2011	Diciembre	?	Conferencia	Gonzalo Andrade	Junta Directiva y Asamblea General de Invenmar (Santa Marta)
2011	Diciembre	11	Explotación minera contra investigación científica	Carlos Fernando Álvarez	UN Periodico <a href="http://www.unperiodico.unal.edu.co/uploads/media/UNPeriodico151.pdf">http://www.unperiodico.unal.edu.co/uploads/media/UNPeriodico151.pdf</a>
2011	Diciembre	28	Resolución 0260, a través de la cual se incrementa la tarifa de los gastos en que debe incurrir un científico o entidad que quiera acceder a un Contrato de Acceso a Recurso de Material Genético	¿?	¿?
2012	Enero	2	Científicos en la ilegalidad por culpa de la burocracia	Pablo Correa	SciDevNet <a href="http://www.scidev.net/americ-latina/biodiversidad/noticias/cientificos-en-la-ilegalidad-por-culpa-de-la-burocracia.html#">http://www.scidev.net/americ-latina/biodiversidad/noticias/cientificos-en-la-ilegalidad-por-culpa-de-la-burocracia.html#</a>
2012	Enero	4	Científicos en la ilegalidad	Pablo Correa	El Espectador <a href="http://www.elsespectador.com/impreso/cultura/vivir/articulo-319593-cientificos-ilegalidad">http://www.elsespectador.com/impreso/cultura/vivir/articulo-319593-cientificos-ilegalidad</a>
2012	Enero	20	Reunión de Andrade con el Ministerio según noticia de UNAL		<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/gobierno-se-burla-de-los-cientificos-denuncian-expertos.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/gobierno-se-burla-de-los-cientificos-denuncian-expertos.html</a>
2012	Enero	30	Colombia, estancada en crecimiento de patentes	Agencia de noticias UN	Agencia de noticias UN <a href="http://www.agenciadenoticias.unal.edu.co/detalle/article/colombia-estancada-en-crecimiento-de-patentes/index.html">http://www.agenciadenoticias.unal.edu.co/detalle/article/colombia-estancada-en-crecimiento-de-patentes/index.html</a>
2012	Febrero	?	Conferencia	Gonzalo Andrade	Junta Directiva del Instituto Alexander von Humboldt (Bogotá)
2012	Febrero	?	Conferencia	Gonzalo Andrade	Junta Directiva y Asamblea General de Invenmar (Santa Marta)
2012	Febrero	13	"Gobierno se burla de científicos" denuncian expertos	Agencia de noticias UN	Agencia de noticias UN <a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/gobierno-se-burla-de-los-cientificos-denuncian-expertos.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/gobierno-se-burla-de-los-cientificos-denuncian-expertos.html</a>
2012	Febrero	15	Piden eliminar contratos para ciencia	Agencia de noticias UN (Periodista: Carlos Fernando Álvarez)	VIDEO Agencia de noticias UN <a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/piden-eliminar-contratos-para-ciencia.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/piden-eliminar-contratos-para-ciencia.html</a>
2012	Febrero	16	Proyecto de decreto por el cual se reglamenta el permiso de colecta científica de la diversidad biológica silvestre colombiana, con fines de investigación científica no comercial	Gonzalo Andrade	Carta vía mail al MADS (Xiomara Sanclemente) <a href="http://www.viceinvestigacion.unal.edu.co/VRI/files/docs/Propuestas/Respuesta_Permisos_Collecta.pdf">http://www.viceinvestigacion.unal.edu.co/VRI/files/docs/Propuestas/Respuesta_Permisos_Collecta.pdf</a>



2012	Febrero	17	Circulación de propuesta de modificación del decreto 309	¿?	¿?	<a href="http://www.caracol.com.co/noticias/ecologia/a-los-cientificos-en-colombia-se-les-cobra-por-investigar/20120221/nota/1630280.aspx">http://www.caracol.com.co/noticias/ecologia/a-los-cientificos-en-colombia-se-les-cobra-por-investigar/20120221/nota/1630280.aspx</a>	
2012	Febrero	21	Ley antitramites, en claroscuro	Agencia de noticias UN	Artículo y emisión radial	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/ley-antitramites-en-claroscuro.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/ley-antitramites-en-claroscuro.html</a>	
2012	Febrero	21	A los científicos en Colombia se les cobra por investigar	Felipe?	Caracol Radio Artículo y emisión radial	<a href="http://www.caracol.com.co/noticias/ecologia/a-los-cientificos-en-colombia-se-les-cobra-por-investigar/20120221/nota/1630280.aspx">http://www.caracol.com.co/noticias/ecologia/a-los-cientificos-en-colombia-se-les-cobra-por-investigar/20120221/nota/1630280.aspx</a>	
2012	Febrero	26	Consulta previa enreda proyectos de desarrollo	Daniel Valero	El Tiempo	<a href="http://www.viceministerio.unal.edu.co/VRI/files/docs/Propuestas/ElTiempo26022012.pdf">http://www.viceministerio.unal.edu.co/VRI/files/docs/Propuestas/ElTiempo26022012.pdf</a> <a href="http://www.eltiempo.com/archivo/documento/CMS-11220667">http://www.eltiempo.com/archivo/documento/CMS-11220667</a>	
2012	Febrero	27	Minambiente propone nueva traba a la investigación	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/minambiente-propone-nueva-traba-a-la-investigacion.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/minambiente-propone-nueva-traba-a-la-investigacion.html</a>	
2012	Marzo	3	Los prejuicios sobre la Consulta Previa	Francisco Taborda Ocampo	ALAI. America latina en movimiento	<a href="http://alainet.org/active/53136&amp;lang=es">http://alainet.org/active/53136&amp;lang=es</a>	
2012	Marzo	6	UN sistematiza información de colecciones biológicas	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/un-sistematiza-informacion-de-colecciones-biologicas.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/un-sistematiza-informacion-de-colecciones-biologicas.html</a>	
2012	Marzo	17	Este año estamos peor que cualquier otro: investigadores UN	Extroversia	Universia	<a href="http://extroversia.universia.net.co/dia-a-dia/2013/noticias/actualidad/este_año_estamos_peor_que_cualquier_otro_investigadores_un/actualidad/14251/103/104.html">http://extroversia.universia.net.co/dia-a-dia/2013/noticias/actualidad/este_año_estamos_peor_que_cualquier_otro_investigadores_un/actualidad/14251/103/104.html</a>	
2012	Abril	5	En riesgo investigación universitaria sobre biodiversidad	/Vicerrectoría de Investigación UDEA	Prensa Verde	<a href="http://www.prensaverde.org.co/imprnot.php?mncr=1&amp;sbmn=1&amp;ppc=1&amp;ppf=2&amp;codnot=12000252">http://www.prensaverde.org.co/imprnot.php?mncr=1&amp;sbmn=1&amp;ppc=1&amp;ppf=2&amp;codnot=12000252</a>	
2012	Abril	11	Decisión del Congreso afectaría la investigación en vegetales.	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/decision-del-congreso-afectaria-la-investigacion-en-vegetales.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/decision-del-congreso-afectaria-la-investigacion-en-vegetales.html</a>	
2012	Mayo	14	Río+20 ¿Es posible un desarrollo sostenible?	DW (Invitados: Ilos son Gonzalo Andrade de la dirección del Instituto Von Humboldt de Colombia y del Instituto de Ciencias Naturales de la Universidad Nacional de Colombia; María del Pilar Pardo, ha sido consultora del Banco Interamericano de Desarrollo, BID, en temas ambientales; y Juan Pablo Calvas, Jefe de Información de Radio Nacional de Colombia.)	Radio y Televisión Nacional de Colombia (RTVC) y Deutsche Welle (DW).	<a href="http://www.dw.de/claves-el-mundo-desde-am%C3%A9rica-latina-2012-05-14/e-15892707-9797">http://www.dw.de/claves-el-mundo-desde-am%C3%A9rica-latina-2012-05-14/e-15892707-9797</a>	
2012	Mayo	¿?	Evento Zapatoca				

2012	Mayo	26	Investigación ambiental: más del 90 por ciento en la ilegalidad	Yuly Stefany Valbuena	Universidad de la Sabana	<a href="http://www.unisabanaradio.tv/publicaciones/detalle_publicaciones.php?idarticulo=458&amp;idcat=1&amp;idsubcat=6">http://www.unisabanaradio.tv/publicaciones/detalle_publicaciones.php?idarticulo=458&amp;idcat=1&amp;idsubcat=6</a>	
2012	Mayo	31	Biólogos de la UN retenidos por investigar	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/articulo/biologos-de-la-un-retenidos-por-investigar.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/articulo/biologos-de-la-un-retenidos-por-investigar.html</a>	
2012	Mayo	31	Comisión de biólogos de la universidad Nacional fueron detenidos por sacrificar animales en un parque natural de Santander	Caracol Noticias	Caracol Radio	<a href="http://www.caracol.com.co/noticias/regional/comision-de-biologos-de-la-universidad-nacional-fueron-detenido-por-sacrificar-animales-en-un-parque-natural-de-santander/20120531/nota/1698191.aspx">http://www.caracol.com.co/noticias/regional/comision-de-biologos-de-la-universidad-nacional-fueron-detenido-por-sacrificar-animales-en-un-parque-natural-de-santander/20120531/nota/1698191.aspx</a>	
2012	Mayo	31	Detienen estudiantes de la Nacional por sacrificar aves en un parque de Santander	RCN	RCN La radio	<a href="http://www.rcnradio.com/noticias/detienen-estudiantes-de-la-nacional-por-sacrificar-aves-en-un-parque-de-santander-2983">http://www.rcnradio.com/noticias/detienen-estudiantes-de-la-nacional-por-sacrificar-aves-en-un-parque-de-santander-2983</a>	
2012	Junio	14	Carta a dirección de ecosistemas	¿?	¿?	¿?	
2012	Junio	21	Permisos de investigación científica	Vicerrectoría de Investigación UN (Autor: Gonzalo Andrade)	Boletín UN Investiga	<a href="http://www.viceinvestigacion.unal.edu.co/VR1/boletin/20120621.html#nota_1">http://www.viceinvestigacion.unal.edu.co/VR1/boletin/20120621.html#nota_1</a>	
2012	Junio	24	Cara a directora de ecosistemas	Gonzalo Andrade		<a href="http://www.bioeconomy-alcue.org/bioeconomy/doc/La%20bioeconomia%20en%20Colombia-potenciales.%20opciones%20y%20posibles%20im pactos_G.ANDRADE.pdf">http://www.bioeconomy-alcue.org/bioeconomy/doc/La%20bioeconomia%20en%20Colombia-potenciales.%20opciones%20y%20posibles%20im pactos_G.ANDRADE.pdf</a>	
2012	Julio	14	Animales: ¿víctimas o héroes de la ciencia?	Sergio Silva Numa	El Espectador	<a href="http://www.elespectador.com/noticias/actualidad/vivir/animales-victimas-o-heroes-de-ciencia-articulo-359807#ancla_opiniones">http://www.elespectador.com/noticias/actualidad/vivir/animales-victimas-o-heroes-de-ciencia-articulo-359807#ancla_opiniones</a>	
2012	Agosto	22	Carta a presidente santos	1084 firmaron	Carta a presidente Santos		
2012	Agosto	27	El desespero de la comunidad científica	Redacción Vivir	El Espectador	<a href="http://www.elespectador.com/noticias/actualidad/vivir/el-desespero-de-comunidad-cientifica-articulo-370572">http://www.elespectador.com/noticias/actualidad/vivir/el-desespero-de-comunidad-cientifica-articulo-370572</a>	
2012	Septiembre	3	Foro Abriendo Puertas para la Investigación Científica en Colombia				
2012	Septiembre	?	Conferencia	Gonzalo Andrade	Simposio sobre conservación de ecosistemas y especies amenazadas, Universidad Industrial de Santander, UIS, (Bucaramanga)		
2012	Septiembre	10	"Permisos para minería, más fáciles que para investigar"		Uandes	<a href="http://www.uniandes.edu.co/noticias/ciencias/es-mas-facil-pedir-permisos-para-mineria-que-para-investigar">http://www.uniandes.edu.co/noticias/ciencias/es-mas-facil-pedir-permisos-para-mineria-que-para-investigar</a>	
2012	Septiembre	11	Respuesta de presidente santos	Santos?	Respuesta de presidente Santos		
2012	Octubre	4	Conferencia	Gonzalo Andrade	XIV Jornadas Internacionales en Derecho del Medio Ambiente, Universidad Externado de Colombia (Charla "Permisos de investigación")		
2012	Octubre	10	Estado pone en jaque a la investigación científica	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/articulo/estado-pone-en-">http://www.agenciadenoticias.unal.edu.co/ndetalle/articulo/estado-pone-en-</a>	

						<a href="#">jaque-a-la-investigacion-cientifica.html</a>
2012	Octubre	12	Investigación científica: la reforma al Código de Recursos Naturales genera críticas	Universia	Universia	<a href="http://noticias.universia.net.co/en-portada/noticia/2012/10/12/974541/investigacion-cientifica-reforma-codigo-recursos-naturales-genera-criticas.html">http://noticias.universia.net.co/en-portada/noticia/2012/10/12/974541/investigacion-cientifica-reforma-codigo-recursos-naturales-genera-criticas.html</a>
2012	Octubre	11 o 12	Conferencia	Gonzalo Andrade	5to Simposio Nacional Forestal, Universidad Nacional de Colombia, (Medellín)	
2013	Enero	22	Comunicado numero 01 de la vicerrectoría de investigación y extensión a la comunidad universitaria	Alexander Gómez Mejía	Correo institucional	<a href="#">Correo institucional</a>
2013	Enero	28	Permisos para investigación en biodiversidad podrían ser de 10 años	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/permisos-para-investigacion-en-biodiversidad-podrian-ser-de-10-anos.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/permisos-para-investigacion-en-biodiversidad-podrian-ser-de-10-anos.html</a>
2013	?	?	Propuestas de decretos para permisos de investigación, colecciones y contratos de acceso a recursos genéticos	Vicerrectoría de Investigación UN	Vicerrectoría de Investigación UN	<a href="http://www.viceinvestigacion.unal.edu.co/VRI/index.php?option=com_content&amp;view=category&amp;layout=blog&amp;id=59&amp;Itemid=154">http://www.viceinvestigacion.unal.edu.co/VRI/index.php?option=com_content&amp;view=category&amp;layout=blog&amp;id=59&amp;Itemid=154</a>
2013	Junio	27	PUBLICACIÓN DE DECRETOS 1375 y 1376			
2013	Junio	28	Firmados decretos para permisos y colecciones biológicas	Boletín UN Investiga EXTRA No. 163A	Boletín UN	<a href="http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130628.html#nota_1">http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130628.html#nota_1</a>
2013	Julio	2	Decretan permiso de recolección de diversidad biológica por diez años	Agencia de noticias UN (Autor: ALEXANDER GÓMEZ MEJÍA Vicerrector)	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/decretan-permiso-de-recoleccion-de-diversidad-biologica-por-diez-anos.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/decretan-permiso-de-recoleccion-de-diversidad-biologica-por-diez-anos.html</a>
2013	Julio	2	Menos trámites para investigar en Colombia	Redacción Vivir	El Espectador	<a href="http://www.elespectador.com/noticias/actualidad/vivir/menos-tramites-investigar-colombia-articulo-431297">http://www.elespectador.com/noticias/actualidad/vivir/menos-tramites-investigar-colombia-articulo-431297</a>
2013	Julio	3	Permiso de recolección de diversidad biológica	El Nuevo Siglo	El Nuevo Siglo	<a href="http://www.elnuevosiglo.com.co/articulos/7-2013-permiso-de-recoleccion-de-diversidad-biol%C3%B3gica.html">http://www.elnuevosiglo.com.co/articulos/7-2013-permiso-de-recoleccion-de-diversidad-biol%C3%B3gica.html</a>
2013	Julio	17	Nuevos decretos regulan la investigación biológica	Pedro Correa Ochoa	UdeA Noticias	<a href="http://www.udea.edu.co/portal/page/portal/bActualidad/Principal_UdeA/UdeANoticias/Ciencia/Lista%20el%20nuevo%20decreto%20que%20regula%20investigaciones%20biol%C3%B3gicas">http://www.udea.edu.co/portal/page/portal/bActualidad/Principal_UdeA/UdeANoticias/Ciencia/Lista%20el%20nuevo%20decreto%20que%20regula%20investigaciones%20biol%C3%B3gicas</a>
2013	Julio	25	Decretos para permisos y colecciones biológicas	UN Análisis	<a href="http://www.unradio.unal.edu.co">www.unradio.unal.edu.co</a>	<a href="http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130725-un analisis.html">http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130725-un analisis.html</a>
2013	Julio	25	Inclusión investigadores UN en permiso marco de recolección (Decreto 1376 de 2013)	Boletín UN Investiga No. 167	Boletín UN	<a href="http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130725-">http://www.viceinvestigacion.unal.edu.co/VRI/boletin/20130725-</a>

						<a href="#">permisos.html</a>
2013	Julio	26	Nueva reglamentación de permisos y colecciones biológicas	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/nueva-reglamentacion-de-permisos-y-colecciones-biologicas.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/nueva-reglamentacion-de-permisos-y-colecciones-biologicas.html</a>
2013	Julio	¿?	Decretos sobre Colecciones Biológicas y Permisos de Recolección de Especímenes: Incentivos a la Investigación	Lina María Diaz	Boletín Virtual - Departamento de Propiedad Intelectual - Universidad Externado de Colombia	<a href="http://propintel.uexternado.edu.co/Pr0P1n73L-3xT3rNaD0-U3C/wp-content/uploads/2013/07/Decretos-de-Colecciones-de.pdf">http://propintel.uexternado.edu.co/Pr0P1n73L-3xT3rNaD0-U3C/wp-content/uploads/2013/07/Decretos-de-Colecciones-de.pdf</a>
2013	¿?	¿?	Firma a los decretos para permisos y colecciones biológicas	Boletín Ciencias - Andes	Boletín Ciencias - Andes	<a href="http://boletinciencias.unandes.edu.co/index.php/noticias-generales/224-firma-a-los-decretos-para-permisos-y-colecciones-biologicas">http://boletinciencias.unandes.edu.co/index.php/noticias-generales/224-firma-a-los-decretos-para-permisos-y-colecciones-biologicas</a>
2013	Octubre	4	UN avanza en protocolo para recolecta de especímenes en el país	Agencia de Noticias UN	Agencia de Noticias UN	<a href="http://www.investigacion.unal.edu.co/index.php/bolletininvestigaun/nota/768-20131010-protocolo">http://www.investigacion.unal.edu.co/index.php/bolletininvestigaun/nota/768-20131010-protocolo</a>
2013	Octubre	4	UN avanza en protocolo para recolecta de especímenes en el país	Agencia de Noticias UN	Centro Virtual de Noticias de la Educación	<a href="http://www.mineduacion.gov.co/cvn/1665/w3-article-330022.html">http://www.mineduacion.gov.co/cvn/1665/w3-article-330022.html</a>
2013	Noviembre	20	Radicada solicitud permiso marco de recolecta ante la ANLA	Boletín UN Investiga	Boletín UN Investiga	<a href="http://www.investigacion.unal.edu.co/index.php/bolletininvestigaun/nota/1072-20131121-permisos">http://www.investigacion.unal.edu.co/index.php/bolletininvestigaun/nota/1072-20131121-permisos</a>
2014	Mayo	6	Disminuye tramitología para investigación científica	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/disminuye-tramitologia-para-investigacion-cientifica.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/disminuye-tramitologia-para-investigacion-cientifica.html</a>
2014	Mayo	14	Nueva tramitología para investigación científica de las universidades	Agencia de noticias UN	UNIVERSIA	<a href="http://noticias.universia.net.co/ciencia-nyt/noticia/2014/05/14/1096709/nueva-tramitologia-investigacion-cientifica-universidades.html">http://noticias.universia.net.co/ciencia-nyt/noticia/2014/05/14/1096709/nueva-tramitologia-investigacion-cientifica-universidades.html</a>
2014	Mayo	27	“Por la cual se otorga un Resolución 0524 Permiso Marco de Recolección de Especímenes de Especies Silvestres de la Diversidad Biológica con Fines de Investigación Científica No Comercial y se toman otras determinaciones	ANLA	ANLA	<a href="http://www.anla.gov.co/documentos/13010_res_0524_270514.pdf">http://www.anla.gov.co/documentos/13010_res_0524_270514.pdf</a>
2014	Diciembre	24	80% de las 200 colecciones biológicas del país no están sistematizadas	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/80-de-las-200-colecciones-biologicas-del-pais-no-estran-sistematizadas.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/80-de-las-200-colecciones-biologicas-del-pais-no-estran-sistematizadas.html</a>
>Decretos	?	?	Permiso Marco de Recolección de Especies y Proyectos de Colecta	Vicerrectoría de Investigaciones	Universidad de los Andes. Portal Web	<a href="https://investigaciones.uniandes.edu.co/index.php/es/colecta">https://investigaciones.uniandes.edu.co/index.php/es/colecta</a>
2015	Marzo	6	Política de biotecnología avanza en colecciones biológicas	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/politica-de-">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/politica-de-</a>

						<a href="#">biotecnologia-avanza-en-colecciones-biologicas.html</a>
2015	Junio	13	¿A quién se le ocurre cobrar por la recolección científica?	Gary Stiles	UN Periódico	<a href="http://www.unperiodico.unal.edu.co/dper/article/a-quien-se-le-ocurre-cobrar-por-la-recoleccion-cientifica.html">http://www.unperiodico.unal.edu.co/dper/article/a-quien-se-le-ocurre-cobrar-por-la-recoleccion-cientifica.html</a>
2015	Junio	25	¿A quién se le ocurre cobrar por la recolección científica?	Agencia de noticias UN	Agencia de noticias UN	<a href="http://www.agenciadenoticias.unal.edu.co/ndetalle/article/a-quien-se-le-ocurre-cobrar-por-la-recoleccion-cientifica-1.html">http://www.agenciadenoticias.unal.edu.co/ndetalle/article/a-quien-se-le-ocurre-cobrar-por-la-recoleccion-cientifica-1.html</a>
2015	Julio	1	¿Pagar \$9.000 por recolectar una mariposa?	María Mónica Monsalve S.	El Espectador	<a href="http://www.elespectador.com/noticias/medio-ambiente/pagar-9000-recolectar-una-mariposa-articulo-569647">http://www.elespectador.com/noticias/medio-ambiente/pagar-9000-recolectar-una-mariposa-articulo-569647</a>

## C. Annexes: Matrix of traits of Bad News for Systematics Analysis

### Titles/Titulares

1. Científicos, a punto de recibir laboratorio por cárcel
2. A los candidatos presidenciales no les importa el medioambiente del país
3. Explotación minera contra investigación científica
4. Científicos en la ilegalidad por culpa de la burocracia
5. Científicos en la ilegalidad
6. Colombia, estancada en crecimiento de patentes
7. "Gobierno se burla de científicos" denuncian expertos
8. Ley Antitrámites, en claroscuro
9. A los científicos en Colombia se les cobra por investigar
10. Consulta previa (a comunidades étnicas) enreda proyectos de desarrollo
11. Minambiente propone nueva traba a la investigación
12. Los prejuicios sobre la Consulta Previa
13. UN sistematiza información de colecciones biológicas
14. Este año estamos peor que cualquier otro: investigadores UN
15. En riesgo investigación universitaria sobre biodiversidad
16. Decisión del Congreso afectaría la investigación en vegetales.
17. Investigación ambiental: más del 90 por ciento en la ilegalidad
18. Biólogos de la UN retenidos por investigar
19. Comisión de biólogos de la universidad Nacional fueron detenidos por sacrificar animales en un parque natural de Santander
20. Detienen estudiantes de la Nacional por sacrificar aves en un parque de Santander
21. Permisos de investigación científica
22. Animales: ¿víctimas o héroes de la ciencia?
23. El desespero de la comunidad científica
24. "Permisos para minería, más fáciles que para investigar"
25. Estado pone en jaque a la investigación científica
26. Investigación científica: la reforma al Código de Recursos Naturales genera críticas
27. Permisos para investigación en biodiversidad podrían ser de 10 años

1= trait present in the specimen

0= trait absent in the specimen

Traits are related to persons, institutions, contrasts, metaphors, etc.



		Jose Manuel Martinez (asistente administrativo de la Universidad Nacional)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Eduardo Rudas (Coordinador Inf. ICN)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Gary Siles (Docente)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Alejandro Chaparro (Docente)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Ursula Ramirez (Instituto de Genética)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Gloria Galeano (Docente)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Jose Stalin Rojas (director Administración)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Germin Corredor (Director CID)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U. JAVERIANA		PUJV	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
		Sandra Baena (Docente)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Guillermo Rudas (docente)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UNIVERSIDAD DE ANTIOQUIA		UDEA	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
		VLUDE A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Instituto de Biología	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Juan Manuel Daza Rojas (Docente Instituto de Biología)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Jairo Humberto Restrepo Za (Vicerrector de Investigación)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UNIVERSIDAD DE LOS ANDES		UAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
		Santiago Madridin Profesor UAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		Susana Caballero UAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		Mamuel Rodriguez Becerra Examinador de Medio Ambiente y profesor de Administración Universidad de los Andes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0









OTROS	INSTITUCIONES																								
	Instituto de Pensamiento Ético, Social y Político (Ipesp)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Instituciones de educación básica	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Comunidad Andina de Naciones	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mineral	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mineralco	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OMPI (Organización Mundial de la Propiedad Intelectual)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PNUD	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCEFYN (Academia Colombiana de Ciencias Exactas Físicas y Naturales)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Asociación Colombiana de Facultades de Ciencias	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Miguel Galvis (director Ipesp)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juan Manuel Charry (Abogado constitucionalista)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Koraku Busintia, abogado y líder arhuaco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Emias (raizales, afros, indígenas)	0	0	1	1	1	0	1	0	1	1	1	0	0	1	1	0	1	0	0	1	0	0	0	0	1
José Celestino Mutis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Edgar Nieto comandante de la Policía Santandereana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Ciudadano	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Claudio Beltrán, líder ambientalista del municipio de Zapotocá	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Andradé	0	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	0	0	0	1	0	1	1
Gary Stiles	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Gabriel Ricardo Noreña	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alejandro Chaparro	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Úrsula Ramírez (Instituto de Genética)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

"ENCOMILLAS"  
UNIVERSIDAD NACIONAL DE COLOMBIA





PROBLEMAS	Régimen Andino de Recursos Genéticos (Decisión 391 de 1996) O Acuerdo de Cartagena	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	Decreto 309 de 2000	0	0	1	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	
	Resolución 260 del 28 de diciembre de 2011	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	
	Investigación sobre biodiversidad en Colombia. Propuestas de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la Decisión Andina 391 de 1996.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Informe del estado de los recursos naturales y del ambiente	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Protocolo de Nagoya	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Ley Antitrámites	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Constitución 1991. Constitución colombiana	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
	proyecto de Ley de Tierras y Desarrollo Rural	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Código minero	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Convenio Internacional para la Protección de las Obtenciones Vegetales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
	Código de Recursos Naturales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	Ley 182 de 2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
	TLC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Butrera (Mucho s Tramites dispendiosos en dinero o en tiempo)	1	0	1	1	1	1	1	1	1	0	1	0	0	<u>1</u>	1	1	1	1	0	0	1	1	1	1	1	1	0		

No hay unidad especializada y/o eficiente y/o armonizada para la tramitación	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La demora puede deberse a falta de diligencia de los investigadores	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IGNORANCIA DE ANDRADE	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El problema no es la norma sino la gestión	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Falta de claridad en los trámites	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Presencia de comunidades étnicas/Consultas previas	0	0	1	1	1	0	1	0	1	1	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0
Ignorancia sobre temas esotéricos y prácticos/ignorancia	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Por cumplir la normatividad	0	0	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Falta de voluntad jurídica	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No poder patentar por trabas burocráticas y por debil sistema de innovación nacional	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No poder patentar por trabas a la investigación y ARG	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incoherencia interna del gobierno con normativa	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Goberno serdo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pais de tramites	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Obstaculo al desarrollo del pais	1	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Obstaculo a la investigación/ciencia	1	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Años y dinero gastados	1	0	1	1	1	0	1	1	1	0	1	0	0	1	1	1	1	1	0	0	1	1	1	0	1	1
96%/92% en la legalidad	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
45(46) de 565 (560) proyectos con contratos solamente, con posibilidad de patente	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0	0	0	1	1	1	0	1	1





	Demora de consult a previa justificada	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Porcentajes de investigación	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
CONTRASTES	Minería en mejor posición que investigación	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
	Minería en mejor posición que cuidado de ambiente	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Otras entidades en mejor posición (gubernamentales, colegios)	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Otros países en mejor posición	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0
	Destacable papel de la UNAL en investigación/colección (ORGULLO UN)	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Entre actividad minera gobiernos pasados y gobierno ALIV	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VISUAL (Zonas mineras vs. Zonas protegidas)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Acceso a recursos genéticos diferentes a investigación básica	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tala de bosque en mejor posición que investigación	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Permiso marco vs. permiso individual	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Patentes antes y después en Colombia	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Poca importancia a los temas ambientales	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Entre investigación y matanza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	Investigación aplicada versus básica	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	País megadiverso pero con problemas	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

	UN involucrado en DECRETOS 309	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
	Decreto sano, reglamento mala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
	Consulta previa para investigación, para otros si	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
	Quien pierde es el país no científico	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
METAFORAS	amarras jurídicas	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	La locomotora de la minería	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SOLUCIONES	Propuesta desde la academia	1	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1
	Agilizar tramites - disminuir costos, claridad	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Crear igualdad de oportunidades entre sectores	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Esfuerzos desde el MADS para disminuir tramitología	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
	Esfuerzos desde Consejería Presidencial para resolver problemas	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Sistematización - agilidad por herramientas digitales para toma de decisiones	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Cambiar definiciones (acceso a recurso genético)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Permisos marco en lugar de individuales	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Permisos por 10 años	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Eliminación de cobros por consulta a previa	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Se eliminó consulta a previa en caso de no afectación	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	Ley anti-tramites	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	No necesario pedir permiso de investigación	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0
	No contrato de ARG en investigación	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0





## D. Annexes: Transcriptions

### Hugo López

ICN (Bogotá, Colombia)

25/11/2014

43 minutes, 25 seconds + 5mins

J: Bueno usted dirá cuando comenzamos profe

L: ya empezamos (x) no sé que es lo que

J: listo profesor e: Hugo López (x) siendo hoy veinticinco de noviembre de dos mil catorce (x) e: (x) pues básicamente estoy interesado en saber (x) un poco dentro de (x) tengo entendido que usted participo (x) de la: salida de campo (x) en el: (x) año dos mil doce si no estoy mal (x) e: a Zapatoca Santander (x) no: entonces estoy interesado porque digamos hubo un evento anómalo y es que hubo como una denuncia de un ciudadano (x) no: entonces lo único que yo quiero saber es simplemente le voy a hacer un par de preguntas (x) con respecto (x) al evento como tal de Zapatoca pero quiero saber su perspectiva (x) con respecto al asunto (x) entonces lo primero es simplemente me gustaría saber (x) cuál era el fin de la salida: digamos (x) como transcurrió de manera muy resumida la salida (x) y luego como pasa como tal este (x) este anómalo evento

L: listo e: (x) pues la salida hace parte (x) de: (x) varias: (x) no: (x) la salida se: (x) llevó: (x) en el marco de un curso de (x) de la universidad (x) un curso (x) de campo que se llama taxonomía animal (x) cada año cambiamos de sitio pues (x) cada año (x) cada semestre se hace una salida (x) algunas veces se cambia de sitio (x) algunas veces se: (x) se mantiene el mismo sitio por algunos años (x) y: e:sa (x) durante las salidas hay: (x) durante cada semestre hay un coordinador (x) y hay profesores que vamos en los diferentes grupos (x) ese año se decidió ir a Zapatoca Santander (x) y el coordinador fue el profesor (x) Gonzalo Andrade: (x) en ese sentido se hizo la: (x) los aspectos logísticos (x) normales para la salida (x) y: (x) la salida es una práctica donde se les enseña a los estudiantes (x) de biología (x) a trabajar con los diferentes grupos de fauna (x) se hacen colectas (x) para enseñarles como se preparan (x) pero además (x) para enseñarles como (x) cumplir con: (x) nuestro compromiso misional de: (x) hacer los e: (x) completar el inventario de la biodiversidad (x) e: (x) en esa salida (x) y en algunos (x) cada vez más frecuente se: (x) a veces se realizan charlas (x) a la comunidad contándoles: (x) que se está haciendo: (x) e: lo que significa el curso y también (x) e: (x) digamos que e: (x) tratando de que la gente se: (x) se: sensibilice sobre la biodiversidad (x) y conozca más sobre la biodiversidad de nuestro país=

J: entonces (x) hicieron además a la salida (x) digamos lo normal que se hace las colectas=

L: una serie de charlas

J: unas charlas en un día de la salida

L: si: =

J: solamente los profesores (x) o los estudiantes también=

L: algunos estudiantes fueron (x) pero (x) hubo gente de la comunidad

J: que van como (x) pues (x) para informarles sobre=

L: las charlas son (x) son (x) abiertas

J: abiertas

L: abiertas

J: okey

L: y: e: (x) ya el último día que nos veni entonces ahí e: (x) entraron varias personas (x) incluso (x) en Zapatoca hay una fundación: n (x) hay varias fundaciones (x) hay varias personas (x) interesadas con (x) el tema ambiental (x) algunos de ellos nos colaboraron en en (x) los sitios de muestreo de contacto y demás (x) ya cuando salíamos e: (x) se presentó la situación de (x) que (x) una persona hizo una (x) e: e: (x) una (x) e: (x) denuncia ante la inspección de policía (x) que (x) e: (x) es es (x) se estaban sacrificando (x) es que se sacrifican animales (x) y estábamos llevando ejemplares en (x) a él le llamo la atención los de los de a: ves

J: aja

L: y:: (x) pues precisamente (x) e:: (x) la autoridad tiene que cumplir (x) con:: (x) con que llegue (x) e:: a: (x) al llegar una denuncia tiene que cumplir (x) con su labor y fueron efectivamente pues (x) estaba (x) estaba los ejemplares de aves y::=

J: o sea fue:: digamos temporalmente (x) había transcurrido la salida (x) después=

L: fue al final de la salida=

J: después de las cha::rlas=

L: ya ya casi (x) ya cuando []

J: e::ra el último día (x) o algo así

L: el último día fue (x) el último día de regreso=

J: ya cuando se iban a regresar (x) y cómo es ese acercamiento (x) llega una perso:: na (x) les dice:: (x) llega la policía (x) o cómo es (x) donde ocurre:: (x) el evento como tal digamos=

L: nosotros estábamos hospedados en un colegio=

J: en un colegio (x) ese era como su campamento base

L: era así (x) nos habían prestado ése colegio (x) o sea los estudiantes estaban ahí y nosotros estamos como en un hotel también (x) los profesores (x) entonces llegaron ahí al (x) al sitio y:: (x) creo que específicamente e:: (x) estaba el nombre de (x) Gary: (x) y::: (x) de Gonzalo (x) Gary porque trabajaba con aves y Gonzalo porque era el coordinador=

J: y::: la denuncia era solamente colecta de aves o:::=

L: si:: (x) colecta de aves

J: a pesar pues que se colecta de todo en ésta salida=

L: si si si si (x) entonces llegaron y y (x) y revisaron (x) y efectivamente estaban (x) las (x) los ejemplares como era lógico (x) los encontraron se mostraron se [identificaron] etcétera (x) e:: (x) se se:: (x) les pidió el permiso de::: de colecta y de::: tramite (x) y el profesor Andrade en ese momento no lo tenía (x) entonces pues lógicamente al no tenerlo (x) se procedió a::: (x) la policía los (x) reviera (x) esos ejemplares (x) o sea que

J: pero la denuncia era por matanza de aves sacrificar o por el permiso:::

L: yo no creo era por por (x) a::: bueno (x) la denuncia era por la matanza y:: (x) y::: (x) y::: (x) la forma de:: (x) de justificarla era (x) digamos una de las formas era (x) mostrando el permiso (x) si

J: si

L: porque la otra forma es que era una actividad docente y no se qué pero e:: (x) como lo que (x) podría (x) corroborar (x) e:: digamos que (x) garantizar la legalidad de todo era tener el permiso y en ese momento no lo tenía y entonces (x) se procedió a::: (x) a decomisar esos ejemplares (x) y el resto de la salida e::: (x) todo el resto del equipo el resto de los materiales estudiantes y demás (x) vinimos a Bogotá (x) eso:: (x) se discutió con la corporación regional (x) de santander (x) creo que es la CMB (x) entonces se hizo (x) digamos que=

J: la CMB (x) eso es que=

L: de la meseta de Bucaramanga creo que es (x) por ahí (x) no sé (x) de pronto (x) después (x) la corporación regional (x) en ese caso=

J: como la CAR digamos de allá

L: si:: si::: (x) e::: (x) después e::: (x) se siguió:: (x) como el trámite (x) y al final los ejemplares fueron devueltos a la universidad

J: a:: o sea que (x) bueno (x) se hace la denuncia digamos (x) retienen los ejemplares como tal

L: ujum

J: si:: (x) e:: (x) pero después (x) llegan ustedes a Bogotá (x) y luego regresan los materiales o=

L: luego:: (x) la:: (x) igual los ejemplares no: los podía tener la policía (x) entonces los mandan a la corporación para que los te:ngan (x) después se hace (x) e::: (x) e::: (x) unas conversacio:::nes (x) se comprueba: (x) también pues que (x) que la universidad (x) e:: (x) estaba dentro de una práctica doce:::nte (x) se::: (x) porque ya esos detalles (x) de la etapa posterior (x) e:: (x) no los supe: (x) se comprueba (x) pues que la universidad (x) podía tenerlos (x) dentro de un e::: (x) digamos que: (x) permiso marco de investigación:: (x) y::: (x) pues lógicamente (x) el mejor sitio para que (x) los ejemplares pudieran (x) mantenerse (x) pues era (x) devolverlos aquí a la universidad

J: o sea que volvieron a la:: (x) universidad=

L: si:: si::: (x) no me acuerdo después de cuanto (x) tiempo (x) pera ya:: regresaron (x) a la universidad (x) creo (x) eso si ya Gary de pronto te da más datos

J: si:: (x) y como tal en ese momento (x) me gustaría hacer un poco de detalle (x) en el momento (x) ustedes están (x) me decía (x) en el campamento base (x) en el colegio (x) llegan al colegio quienes están en el colegio (x) los estudiantes están to::dos (x) luego llega:: quienes (x) el policía=

L: si no estoy mal una inspectora de policía

J: aja

L: y:: (x) y:: (x) uno o dos agentes de policía (x) y:: (x) también llega (x) había un periodista que yo no sé si es el mismo que (x) que (x) que que (x) que (x) instauró la denuncia (x) pero pues el periodista venía con con (x) venía como muy e:: (x) molesto (x) por la situación de: (x) las aves no:: (x) venía muy:: (x) es que ustedes están matando las aves (x) o una cosa así

J: ujum: una preguntica con respecto a (x) reconoce si éste es esa persona que usted acaba de comentar=

L: a:: si::: claro

J: okey (x) no sabe el nombre de él (x) pues él se llama Claudio Beltrán (x) es un periodista de: Santander (x) okey (x) era para verificar esa =esa [cuestión]

L: si si=

J: e::: y quien los atiende (x) quien llega primero hablando (x) la policía o:: (x) en el momento quién los recibe (x) los estudiantes (x) ni idea=

L: no sé e::: (x) m::: (x) yo creo que la policía (x) llega (x) yo yo estaba afuera de:: (x) del del (x) e:: (x) edificio

J: aja

L: y creo que llega la policía (x) y llega:: (x) llega: también el periodista:

J: y la persona de la CAR o::

L: no::: llega la policía (x) la de la CAR llegó después pues creo (x) porque ahí (x) [] esa sí tenía (x) creo que no tenían (x) oficinas (x) en Zapatoca entonces tenían que enviar a alguien desde Bucaramanga (x) y lo que pasa es que entonces nos debían (x) haber dejado ahí todo el tiempo (x) y entonces lo que se decidió es que (x) se quedaran los ejemplares (x) objeto de la denuncia (x) y después lo de la (x) corporación (x) y:: (x) hicieran su peritazgo (x) y decidieran lo que debía ser

J: que en ese momento digamos optó por=

L: si::: o sea si vienen por los ejemplares y no se puede comprobar (x) téngalo (x) y nos vamos porque pues (x) son (x) cuarenta estudiantes (x) es un sitio más o menos lejos (x) estábamos listos pa irnos entonces (x) e:: (x) se hizo esa (x) se tomo esa decisión (x) e::: (x) y pues (x) el periodista: (x) e::: pues (x) creo que estaba (x) estaba un poco alterado (x) por la situación (x) pero igual lo que hicimos fue que (x) que subieran (x) subieran al sitio que estaban los ejemplares pues la policía y la inspectora de policía (x) el periodista: no subio: (x) o no sé ni siquiera que fue que no lo dejamos (x) pero no subio=

J: si si si si (x) no subió (x) e::: (x) que opina con respecto a está [ ] usted cree que es justificable o algo así: o:::

L: pues:: (x) eso e::: (x) lo que pasa es que aquí entran muchas percepciones (x) como individuo

J: si: claro

L: y un país como el nuestro (x) deberían denunciarse más cosas (x) si:: (x) o sea las denuncias ciudadanas (x) para mi son bienvenidas

J: ujum

L: si:: (x) e:: (x) es más por no denunciar es que muchas cosas (x) estamos como estamos

J: muchas cosas pasan por []

L: e::: (x) lamentablemente:: (x) el::: (x) yo no sé si decir ambientalismo o::: está mal entendido (x) en ciertas cosas (x) si (x) pero (x) pero como: (x) la disciplina (x) de::: (x) digamos que (x) social o la biología de la conservación o::: en nuestra opinión están cargadas de::: (x) de valores (x) si::: (x) e::: (x) ese choque de valores (x) ese (x) la falta (x) inclusive de: (x) explicación de lo que significa: (x) la colecta: (x) de nuestra tarea que eran parte de las (x) de las que (x) de las (x) charlas (x) de pronto el mensaje no le llegó o::: no lo entendió muy bie::n o::: (x) le parecía muy terrible (x) que: (x) e::: (x) agarramos (x) no se cincuenta (x) aves (x) e: Zapatoca también tiene: (x) una de las cosas tiene e::: (x) e::: (x) un::: (x) una historia donde también (x) rechazaron las corridas de toros en Zapatoca si y hay un movimiento en contra (x) muy muy (x) e::: como diría (x) por los derechos de los animales (x) animalista no sé=

J: si::

L: cual sería exactamente yo::: creo que es por esa línea que se dio la situación (x) e::: (x) digamos que e::: (x) animalistas (x) en mi opinión (x) e::: (x) un poco recalcitrantes (x) un poco:: (x) e::: (x) extremistas=

J: extremistas (x) pero como tal digamos (x) la denuncia decía por matanza de aves o algo así o:::

L: si creo que si



J: o que como tal

L: yo no conozco la denuncia

J: sí:::

L: de pronto tú en tu revisión=

J: sí:: yo creo que la voy a buscar=

L: tienes que buscarla claro (x) esa es la:: (x) pues es la mejor forma de saber que era lo que estaba denunciando él

J: ujum

L: sí:::

J: e::: una preguntica (x) después de que pasa el evento (x) bueno (x) les dan los ejemplares obviamente debió haber habido como un:: (x) malestar o una serie de debates entre (x) ustedes ya digamos solos (x) o::: (x) primero (x) antes de eso e::: (x) discutieron con las personas que llegaron a a a digamos a denunciarla como tal

L: yo creo (x) ahí si intercambiamos opiniones (x) hhhhhhhhhh

J: hhhh

L: sí:: (x) e:::

J: usted estuvo ahí (x) digamos=

L: sí sí claro=

J: hablando con ellos

L: yo estuve hablando con él (x) intercambiamos opiniones con él=

J: a::: con él con él (x) okey (x) listo

L: entonces trate de explicarle lo que estábamos haciendo a::: ustedes lo que están es matando aves dije bue::no (x) a::: incluso algún estudiante (x) trato de::: (x) interponerse porque dije no::: (x) tranquilos no es (x) o sea ya (x) la policía está haciendo lo que tiene que hacer (x) el señor tiene derecho a hacer su denuncia (x) si:: (x) simplemente (x) dejen que pase el asunto (x) pero (x) pero si:: está:: (x) con e es que (x) cuando (x) a ti te dicen (x) estas haciendo una matanza (x) ya de entrada (x) te están calificando

J: aja=

L: y eso: (x) pues genera (x) puede generar (x) en cualquier oficio (x) si si (x) si a un grafitero=

J: califican de que::

L: descalificando=

J: descalificando=

L: si tu estás haciendo como bio tu eres biólogo no::

J: si

L: estás haciendo un muestreo de x o y y te están (x) te dicen de entrada que estas haciendo una matanza (x) están desconociendo tú:: (x) tu capacidad (x) técnica (x) y tu:: (x) tu profesión

J: ujum

L: si o tu:s (x) actividades que debes hacer sobre eso (x) si:: (x) e::: (x) entonces creo eso eso (x) además que él él (x) el (x) periodista la intención era que no se movieran los ejemplares y:: todas esas cosas (x) entonces (x) e::: (x) pues estaba (x) digamos que: (x) alterado (x) e::: (x) si::

J: si (x) alterado (x) y ya después usted digamos (x) tomo una actitud como freca

L: si

J: normal

L: sí::: ya:

J: y después de que él se va: (x) que ocurre entre ustedes (x) que cuenta:n (x) cuál es como (x) no sé (x) la tensión::n (x) o los comenta:rio:s=

L: no pues=

J: o las perspes (x) las perspectivas que usted de pronto (x) alcanzó a vivenciar

L: pues ahí sí depende de (x) lo lo (x) lo único:: (x) que:: (x) mi posición fue (x) si es solo los ejemplares (x) dejen los ejemplares (x) entreguen los ejemplares y ya (x) y nos vamos (x) nuestra tarea es llegar hasta Bogotá con los estudiantes (x) no quedarnos aquí en el pueblo (x) generando un conflicto de un pueblo chiquitico que (x) que nos conoció (x) dos semanas (x) que nos atendió muy bien (x) incluso se estaba generando conflicto entre: (x) los pobladores (x) si: (x) la gente que nos decía (x) qué pena con ustedes

J: si

L: si (x) a::: es que éste siempre es así:: (x) éste man es loco=

J: o sea el periodista

L: si (x) ese siempre es pa todo=

J: y él era de allá (x) o:::

L: si creo que=

J: como tal (x) o estaba de::

L: no sé de pronto tú lo debes conocer porque tienes la foto hhhhh=

J: no pero vi que sí:: es un periodista (x) digamos (x) de Santander (x) pero no sé si sea de Zapatoca=

L: yo no sé (x) yo creo que si (x) yo creo que debe tener ahí su sede

J: si

L: porque Zapatoca es medio Villa de Leyva (x)

J: a::: si

L: yo creo que sí

J: tons claro si [(x) bueno entonces después (x) se devuelven (x) bueno ese es como el último día me decía

L: si:: y:: y:: Gary y:: Gonzalo se fueron adelante porque tenían que (x) llegar a Bucaramanga

J: aja

L: si no estoy mal si (x) e:: a:: (x) a::: (x) hacer alguna cosa en la:: (x) antes de que cerraran (x) la corporación (x) para dejar alguna claridad (x) o sino les tocaba quedarse hasta el otro día y toda la cosa

J: a::: (x) okey les tocó hacer ese tramite=

L: como para iniciar el procedimiento (x) después de eso (x) e:: (x) fue que empezaron a salir antes de que llegáramos (x) ya eso estaba: (x) en: (x) por noticias

J: si en noticias (x) ahí fue donde digamos yo me enteré

L: si:::

J: como tal de: (x) digamos de la (x) del evento (x) por noticias (x) de hecho fueron tres periódicos (x) según tengo yo aquí digamos (x) tres periódicos el 31 de mayo de 2012 (x) publican eso (x) que creo que es el día que más o menos ustedes se regresan

L: si:: si:: (x) publica eso (x) publica UN noticias (x) publica

J: e::: venga a ver yo tenía aquí unos titulares (x) y me gustaría saber su comentario con respecto a los mismos (x) digamos a la forma en como se expresaron los medios (x) por ejemplo (x) el titular de::: (x) e::: (x) agencia de noticias un es el siguiente (x) biólogos de la un retenidos por investigar (x) el de caracol radio (x) e::: comisión de biólogos de la universidad nacional fueron detenidos por sacrificar animales en un parque natural en Santander (x) si entonces (x) se ve como una diferencia no: (x) ambos hablan de detención pero::: (x) hubo detención de biólogos como tal

L: no::: de ninguna forma hubo detención de ejemplares

J: si:::

L: si:::==

J: la otra diga bueno unas dicen (x) que es lo que me llama la atención (x) biólogos por investigar y el otros por sacrificar (x) usted que comentaría al respecto de ésta distinción (x) que fueron los comentarios (x) periodísticos

L: pues e::: (x) ninguno de los dos es cierto

J: entonces por qué (x) a::: bueno (x) en el sentido de que no fueron detenidos (x) cierto

L: e::: en el sentido en que no son detenidos (x) y que e::: (x) estábamos haciendo una práctica docente (x) la investigación se obtiene a partir de la acumulación de datos

J: aja

L: si

J: digamos eso es posterior

L: si si si si

J: a posteriori (x) si si si

L: a::: la definición de matanza (x) ahí si depende de: (x) y que tampoco (x) no estábamos en un parque nacional

J: no estaban en el parque nacional=

L: no:::

J: digamos Yariguíes (x) que era=

L: no::: a Yariguíes ya habíamos ido (x) en otra salida

J: de taxonomía también (x) a::: (x) y entonces donde estaban colectando (x) alrededor del municipio

L: alrededor de Zapatoca

J: a::: okey

L: entonces son un montón de imprecisiones

J: de los dos medios (x) de los dos medios digamos periodísticos (x) tanto los de acá (x) como allá (x) e::: (x) al respecto bueno (x) le quería comentar (x) una serie de:: (x) con respecto a lo que comunican los medios (x) una serie de informaciones que aparecen en los mismos y una serie de comentarios que aparecen en los mismos (x) a mi me gustaría saber un poco su percepción (x) aunque ya usted me ha comentado:: (x) algo al respecto (x) lo primero es una cita (x) donde se cita al profesor Gonzalo Andrade en agencia de noticias UN (x) en el (x) en el medio dice lo siguiente (x) Andrade (x) eso fue una mala información porque no quedaron personas detenidas y menos se hizo matanza alguna de aves (x) si: (x) entonces usted me decía que en efecto no hubo (x) o sea estaría de acuerdo con esta información de que no hubo detención de gente como tal (x) y matanza (x) pues ahí está discusión con respecto a lo que es matanza

L: []

J: porque claro yo como soy biólogo de (x) ahí sí estaría de acuerdo con lo que (x) acaba de decir usted no: (x) porque depende de lo que tiene uno como definición

L:claro

J: pues se murieron los animales=

L: no::: los sacrificamos (x) si (x) claro (x) claro (x) los animales son sacrificados porque:: e:: (x) dentro de la tarea hay que hacerlo

J: ujum

L: si::: (x) pero (x) lo que significa una matanza: (x) e::: (x) el término matanza (x) tiene muchas (x) connotaciones no::=

J: aja

L: por eso se habla de de recolecta científica (x) si:::

J: si

L: toma de muestras (x) pero matanza (x) es cuando (x) se hace con un objetivo pero sin:: (x) el objetivo de una matanza es puede ser (x) e::: (x) no sé aprovechar lo:::s (x) como lo que dicen (x) en (x) en el asunto de::: (x) las ballenas delfines (x) incluso cuando chigüiros (x) lo que sea (x) sí (x) o::: (x) personas (x) cuantas matanzas (x) como::: (x) como:: (x) a pueblos colombianos si:: (x) o sea (x) matanza (x) en el (x) imaginario (x) de un colombiano es una cosa terrible (x) que se te viene cuando a la mente cuando hablas de matanza=

J: si::: como algo [] digamos =

L: tierra arrasada cuando llegaron y mataron a todo el mundo (x) sangre por todos lados (x) si:::

J: si si si

L: casi matanza y::: masacres

J: si

L: similares (x) si

J: okey

L: entonces pues (x) claro que hubo sacrificio de ejemplares (x) claro (x) pero es que (x) ya de ahí a hablar (x) depende de lo que uno entienda por matanza (x) si:::

J: si si si

L: entonces

J: que interesante (x) en el otro medio en caracol radio (x) citan a otro (x) a otro personaje pero ya no es biólogo (x) si no al comandante de la política de Santander Edgar Nieto=

L: si:::

J: entonces él comenta (x) según el coronel Edgar Nieto comandante de policía de Santander (x) ésta clase de investigaciones (x) abro comillas (x) cuando se realizan en parques naturales deben tener un permiso especial (x) el cuál no lo tenía esta comisión de la Universidad Nacional (x) entonces ahí usted me comentaba:: (x) pues no hubo=

L: no estábamos en el parque nacional=

J: no no estaban en el parque nacional (x) cierto (x) entonces como que no:: (x) no tiene digamo::s

L: en general (x) sí deberían (x) todos los (x) todas las e:: (x) las actividades que: (x) que (x) por norma (x) aunque están [cambiando] las actividades de (x) recolección de ejemplares (x) deben tener un permiso de recolección=

J: aja

L: tanto para estudios de impacto ambiental como para prácticas docentes y no se qué y eso se ha regulado (x) es más de allá para acá (x) de esa fecha a acá ha cambiado (x) la universidad ya tiene un permiso marco

J: ujum

L: si (x) y en otros sitios hemos ido con el permiso y estas cosas (x) entonces (x) e:: (x) ahí una cosa que es cierta que todas las actividades deben tener un permiso

J: aja=

L: pero (x) sea que esté en parque o no parque

J: si

L: si (x) pero: (x) ahí:: no estábamos en un parque nacional (x) no estábamos

J: no estaban en el parque (x) estaban afuera pero bueno como usted me comentaba anteriormente= (x) en ese momento igual no tenían el permiso y por eso les tocó

L: to:: da [] no no lo enseñó (x) el profe no lo enseñó = sí (x) entonces por eso (x) se optó por dejar los ejemplares

J: okey (x) listo (x) hay otra serie que me pareció interesante (x) una serie de comentarios respecto a la noticia de agencia de noticias un

L: aja

J: generalmente muchas de las noticias (x) de agencia de noticias no son muy comentadas (x) ésta fue muy comentada (x) tenía más de cuarenta comentarios (x) ujum (x) entonces cogí algunos como para tratar de mirar qué tipo de:: (x) de cosas le generan a usted (x) ju: (x) uno de ellos (x) de los comentarios ante ésta noticia (x) es el siguiente (x) definitivamente no estoy de acuerdo que se deban sacrificar vidas para investigar investiguen cómo preservar la vida no como quitarla (x) ese es un comentario (x) de alguien (x) equis (x) que co que comentaría al respecto de esa afirmación

L: pues (x) es una:: (x) es la misma (x) es una opinión sobre (x) sobre (x) sobre el hecho (x) yo creo que para el caso de la tarea taxonómica del inventario de la biodiversidad (x) hay que tener muestras (x) hay que tener muestras

J: eso es algo como indispensable que no::

L: si:: si:: hay que (x) y los los que trabajamos en éstos temas (x) tenemos algunos criterios (x) para la colecta (x) la recolecta de ejemplares (x) entonces (x) e::: (x) pero hay una sencilla (x) no no [] con los animalistas (x) si una (x) o lo (x) o o (x) un respeto hacia la vida que está bien (x) pero no está (x) en nosotros (x) digamos qué (x) no está tan arraigado como por ejemplo el budismo (x) si: (x) donde: (x) cada ejemplar e::: (x) cada e: (x) cada ser vivo tiene u:n (x) valor y se le respeta como tal

J: ujum=

L: pero igual también hay biólogos (x) hay estudios de (x) estudios de primatología y no se que (x) pero no (x) es otra concepción también de la vida (x) incluso se hace en (x) hablando con (x) con un profesor que fue a un instituto de primatología donde se sacrificaban (x) primates (x) para investigación (x) cada año hacían (x) una: (x) una especie de oración (x) por la vida de ellos

J: ujum

L: si:: (x) uno puede decir (x) no::: están locos (x) aquí podríamos hacerlo (x) por qué no (x) desde el punto de vista: (x) de de (x) los derechos de el significado de la vida eso es una cosa filosófica (x) entonces puede estar bien (x) pero para algunos (x) para algunas cosas hay que seguir sacrificando (x) si::: (x) lo que pasa es que uno (x) como le digo a mis estudiantes (x) es que (x) si uno sacrifica (x) tiene que tratar de obtener la mayor información posible (x) el problema está en que sacrifiquen y no obtengan información

J: que queda ahí digamos=

L que pierdan (x) si::

J: listo (x) relacionado entonces con éste tema (x) hay otro comentario de otra persona (x) que dice lo siguiente (x) si hay salidas de campo semestrales o anuales (x) uno asume que en varios casos ya deben tener varios ejemplares de la misma especie (x) para qué tantos (x) entre comillas (x) antes de éstas salidas los estudiantes deberían ir al ICN o donde corresponda y estudiar los especímenes que ya tienen (x) para que solo se colecte (x) entre comillas (x) lo indispensable (x) de otro personaje

L: ujum (x) pues (x) nosotros tenemos un cálculo de cuantos municipios de Colombia hemos visitado (x) hace poco (x) y no hemos visitado (x) hay algunos departamentos donde está solamente (x) como el diez por ciento de los municipios

J: ujum

L: y dentro de los municipios un punto

J: ujum

L: si::: (x) e::: (x) entonces (x) no hemos completado el inventario de la biodiversidad (x) y además (x) como biólogo sabes (x) que la (x) que:: (x) parte del estudio de la diversidad es tratar de capturar la variación

J: ujum

L: entonces existe (x) una cosa que se llama las series (x) cómo cambia (x) la expresión de la vida (x) en una población (x) si (x) entonces (x) e::: (x) cuántos son necesarios es una discusión (x) e: también interesante que puede tomarse desde el punto de vista estadístico:

J: ujum

L: cuando es una muestra (x) depende de (x) lo que quieras hacer (x) e:: (x) o: e::: (x) cuantos ejemplares por localidad pa:ra (x) encontrar la variación de ésa localidad y compararla con otros sitios (x) si:: (x) entonces (x) es e::: (x) digamos que parcialmente (x) e::: (x) puede haber cosas (x) que (x) que (x) puede tener razón (x) y lo hacemos (x) en el sentido de cuando vamos a varios sitios (x) al mismo sitio varias veces (x) ve:mos (x) qué está colectado que no está colectado (x) e::: e::: (x) y procedemos en el momento: (x) a tomar decisiones (x) si: (x) entonces (x) si lo hacemos (x) pero hay cosas que (x) e::: (x) como (x) como preparar un ejemplar solo se puede hacer preparando uno (x) porque pues (x) yo te puedo mostrar la diapositiva pero

J: sí es una técnica una práctica=

L: tienes que (x) si exacto (x) tienes que (x) que (x) hacerlo (x) sentirlos (x) y no: (x) no es enseñar a matar al (x) a los animales (x) es cómo se debería proceder (x) si: (x) y como todos hay cuestiones de habilidades (x) gustos (x) pero (x) incluso ésta materia los estudiantes la inscriben (x) porque quieren (x) pueden no verla

J: bueno sí en mi tiempo creo que era obligatoria=

L: si::

J: hhhhh=

L: en su tiempo era obligatoria

J: ya no

L: ya no

J: okey listo interesante (x) al respecto hay otro comentario también como en la misma línea dice lo siguiente (x) hay que usar la tecnología que ya existe para dejar de matar individuos en pro del conocimiento (x) esto esto ya no se necesita (x) se pueden recolectar muestras de ADN fotografías videos GPS etcétera (x) y dejar a la fauna y flora en su sitio

L: estamos usando todas (x) nosotros (x) e::: (x) fotografías (x) o sea toda la usamos

J: más no digamos reemplaza a lo otro

L: complementa

J: complementa (x) [ no sé si] (x) indispensable como tal

L: si:: si::

J: seguir la colecta (x) e:: (x) éste evento que pasó en Zapatoca a usted (x) más o menos profe cuanto lle::va (x) en este tipo de investigación de colecta de = [ ] de sus mamíferos

L: yo también soy biólogo de acá= (x) pero como profesor llevo desde el dos mil (x) entonces

J: y desde (x) ese momento digamos (x) que empieza a tener la salidas de taxonomía animal (x) o no sé ahorita cómo se llama sistemática animal

L: taxonomía animal sí

J: sigue igual okey (x) e::: (x) nunca había pasado un evento así (x) desde digamos lo que usted sabe o:=

L: a ver=

J: le ha tocado vivir o:: (x) haya conocido (x) de que::: (x) los hayan denunciado por coleccionar (x) porque igual esto es semestre tras semestre (x) no (x) se hace (x) constantemente

L: si:: (x) que yo me acuerde no::: (x) han pasa::do: (x) otro montón de cosas pero (x) es más pues se a:: (x) ahí (x) ahí gente que dice (x) ay si:: (x) está buscando murciélagos (x) ay venga a mi casa que hay muchos lléveselos (x) hay ratas venga ponga las ratas aquí al lado=

J: llévese a mi marido=hhhhhh

L: llévese a mi marido si:: si::: (x) pero (x) pero (x) así una denuncia (x) no:::

J: digamos eso [ ] muy eventual [ ] en ese sentido=

L: si (x) no no me acuerdo

J: profe (x) ya para terminar y no quitarle más tiempo (x) e::: (x) digamos usted cree que éste fue un evento que de pronto le pone una traba a la investigación en Colombia (x) en general como cree que: (x) hay muchas trabas con respecto a éste tipo de investigaciones (x) a este tipo de::: (x) digamos actividades científicas en Colombia:

L: yo creo que no (x) yo creo que (x) ahí si depende de (x) es una cosa que se infló (x) cuando no debía inflarse (x) pero pues así son las noticias (x) si:: (x) o sea (x) perfectamente podían (x) nadie ha dicho (x) cuáles (x) o sea no han metido (x) no se han metido en profundidad a ver (x) cuál es el cubrimiento de éstas salidas o::: (x) pero::: (x) pero yo creo que no::: (x) yo creo que esto no::: (x) no afectó en nada::: el objetivo

de lo que estábamos haciendo (x) e::: si::: definitivamente yo creo que (x) e::: (x) como coordinadores (x) como profesores (x) y como parte de una universidad (x) tiene que tener claro:: (x) su ámbito:: (x) los permisos (x) m::: (x) que son más administrativos (x) que hay que hacerlos (x) como política de la universidad ya lo (x) ya se ha venido resolviendo (x) definitivamente:: la legislación como sea (x) en el ámbito que quiere hacerse un acuerdo social (x) si (x) es lo que la sociedad quiere y cómo acuerde (x) dependiendo eso pues toma uno la:s (x) precauciones (x) la universidad sigue siendo:: (x) bienvenida en las regiones (x) e::: (x) no falta (x) en mi opinión contar más lo que hacemos (x) si (x) entender cuál es el significado (x) definitivamente (x) e::: (x) las sociedades en general son sociedades de dobles morales (x) si (x) ay porecito el animal pero entonces saquemos (x) deforestemos to::do (x) si no que lo (x) es es (x) te voy a poner el ejemplo del águila pescadora versus la [libelus] (x) si (x) el águila pescadora la matan porque (x) entra a un estanque y saca un pescado esto de mayor (x) tamaño (x) las libeluas se comen (x) la mayoría de los alevinos (x) y no les hacen nada

J: ujum

L: si (x) es lo de mo es lo que se vea más (x) es lo que parezca más (x) espectacular (x) lo que sensibilice más

J: si::

L: definitivamente en la producción piscícola las libélulas u odonatos y (x) y (x) deterioran más la producción que lo que hace el águila pescadora

J: vea pues

L: si no que (x) es más notorio que saquen (x) uno de éste tamaño (x) que saquen (x) el veinte por ciento de los alevinos que lanzaste

J: ujum

L: y (x) yo creo que eso fue lo que pasó (x) se e::: (x) infló (x) e: (x) la parte (x) a a animalista:: (x) o la parte (x) digamos que (x) la parte de defensores de animales están afectando (x) defienden más (x) lo::: (x) casi los domesticos (x) las mascotas (x) que::: (x) la biodiversidad como tal (x) entonces (x) en mi opinión tienen (x) un problema conceptual (x) e::: (x) digamos que grave (x) y y (x) un problema en mi opinión digamos de (x) valoración (x) equivocada pero (x) pero pues así como pueden decir que los (x) japoneses o::: (x) en otras regiones (x) o las otras sociedades tienen una valoración equivocada (x) pues son los acuerdos sociales (x) pero aquí:: (x) a tomado (x) a tomado (x) a tomado mucha fuerza (x) ese esa (x) esa línea

J: ujum

L: no de conservación a nivel de ecosistemas si no (x) como de los individuos como de=

J: especies carismáticas=

L: pero yo no (x) creo:: (x) que esto afecto digamos (x) afecte (x) nuestro quehacer (x) e::: (x) ni haya (x) impedido (x) más cosas después de ahí hemos (x) todas las salidas todos los semestres (x) se han hecho salidas (x) si (x) ahoritica por ejemplo fuimos (x) llevamos dos años y medio (x) de visita a san José del Guaviare con los permisos con la comunidad y no se qué (x) estamos seguros que es un sitio: (x) digamos (x) complicado desde el punto de vista de (x) orden público (x) y ahí seguimos

J: si

L: si

J: okey (x) bueno profé para terminar ya (x) lo convencional (x) hablando de permisos de colecta (x) de información (x) puedo utilizar ésta entrevista para analizarla con fines educativos e investigativos

L: e::: (x) para analizarla (x) claro que lo puedes [(x) ahí (x) [extracta] las preguntas (x) me imagino que

J: si yo luego analizo []

L: si porque me imagino que haces las (x) las entrevistas (x) y ahí va:: (x) saliendo las preguntas que querías que contestáramos

J: listo profé muchas gracias=

L: ahora sí cuéntame de tu tesis

J: mi tesis (x) e::: hh

L: hhh

J: no mi tesis se llama:: (x) tiene un nombre simpático no::: (x) se llama (x) legisladores biólogos y otros especímenes (x) si: (x) como tal mi mi mi tema de interés no es el evento Zapatoca (x) si (x) sino cómo ocurrió el cambio en la legislación que regula la colecta de especímenes (x) si no que me encontré con este evento= y me pareció muy interesante

L: aja=

J: no (x) y que pues tiene que ver pues con digamos todo el desarrollo de la problemática (x) no (x) entonces lo que yo quiero mirar es que actores estuvieron involucra:::dos (x) cuáles fueron sus argumentos (x) sus

percepciones (x) que lugares fueron importantes (x) que eventos fueron importantes (x) cierto (x) explicar la acción social (x) digamos (x) cómo ocurrió una serie de eventos (x) se utilizaron (x) y generaron ciertos cambios (x) entonces más o menos grosso modo ese es mi caso de estudio=

L: ya:

J: e::: (x) yo soy de la maestría en estudios sociales de la ciencia (x) aquí en la nacional

L: pero:: (x) el asunto es (x) valoración (x) y todos tienen (x) todos tienen la razón

J: todos tienen la razón=

L: hhhhhhhh (x) si si si

J: si la idea es mirar (x) porque algo interesante por ejemplo de las notas periodísticas (x) es que (x) la de caracol (x) cita por ejemplo a los no biólogos (x) a Edgar Nieto a Claudio Beltrán (x) en cambio agencia de noticias UN (x) mencionaba solamente a los biólogos=

L: cla::ro

J: no la idea es empezar a mirar=

L: claro claro= y ahí::

J: las diferentes perspectivas=

L: claro a ahí:: (x) también es el que tiene acceso a los medios

J: exacto

L: si (x) y:: (x) pero es que: (x) el asunto [] central (x) el asunto también es (x) de institución y no personas porque ahí estaba (x) cuál fue el procedimiento (x) cuál cuál es el procedimiento de la institución (x) la universidad nacional (x) qué debe hacer (x) al respecto

J: si

L: si (x) pero pues (x) tú a donde fuiste a la salida de campo de taxonomía

J: a::: yo fui a campo capote (x) Santander también=

L: a:: bueno ahí salió una publicación y toda la cosa

J: si::: yo ni sabía (x) yo solamente supe que ahí nos enfermamos mu:::chas personas []

L: si::: (x) cierto que salió una publicación (x) las guías de campo capote

N: si:: hay una guía de:::

L: ahí puedes completar

N: los animales de campo capote

L: es que tú también deberías (x) involucrarte en lo que (x) cómo viste la salida (x) para ti te pareció (x) seguramente (x) en el momento (x) porque hay estudiantes que dicen (x) no no matemáticas (x) en el momento (x) qué sentiste (x) y ahora después de (x) que sientes ahora te estoy=

J: ese es un buen consejo=

L: ahora te estoy entrevistando

J: no:: ese es un buen consejo=

L: porque (x) tú (x) viviste

J: aja

L: o sea digamos que no cambio na::da (x) en la metodología (x) se hace lo mismo (x) tu viste esas cosas (x) no sé con quien viste (x) con Carlos Sarmiento me imagino=

J: si::: (x) él coordinó la salida (x) Carlos Sarmiento

L: y mira=

J: [] con Gary Styles y=

L: y mira (x) no sé (x) al final eso terminó en una guía

J: aja

L: fueron como tres o cuatro salidas a campo capote

J: uy:: hartas

L: cierto

N: de campo capote no sé bien []=

L: es más creo que la tenemos ahí

N: [] si está aquí esta aquí arriba

L: a ver

J: está chévere el ejercicio que me plantea profe=

L: cla::ro (x) diría que va a ser una investigación acción participativa y se convierte=

J: hhhh=

L: ahí [](x) y se toman un café (x) y se fuman un cigarro ahí (x) los sociólogos y:: (x) oiga este man cla::ro (x) ahí le:: genera unas cosas porque usted ya lo vivió (x) usted debe tener sus percepciones (x) santa maría boyaca

J: ahora de cada salida están sacando::

N: guías (x) si se han hecho de varias salidas

J: yo me acuerdo que nos enfermamos más bueno=

L: cla::ro

J: con unos sandwiches pichos (x) con atún

L: si si (x) tu me con alguien []

N: si escuché la historia

J: ahí no estaba el profesor Hugo López=

L: no:: yo no estaba

J: yo no alcancé a tener clase con usted profe (x) usted estaba:: como en doctorado o algo así=

L: yo estaba: (x) cuando fuiste como en (x) en el dos mil siete=

J: y yo no me acuerdo ya

L: y vi la sirena entrevistándonos a todos (x) de todas las embarradas hhhh todos los semestre cambiamos de sitio

J: pues hace rato (x) no me acuerdo

L: yo no estaba porque (x) e:: e:: (x) tu cuando te graduaste

J: yo me gradué en el dos mil once

L: a:: claro (x) mira yo estuve desde=

J: como tal terminé en el dos mil diez

L: dos mil cinco (x) desde el dos mil cinco:: diciembre (x) al dos mil diez (x) enero (x) por fuera (x) o sea yo toda tu carrera (x) yo estuve por fuera

J: si yo luego me (x) enteré de su existencia (x) po::r (x) creo que fue por Veronica Restrepo

L: tan chismosa que es si::: (x) seguro que si

J: yo creo que fue por ella

L: claro (x) porque ella trabajó aquí un tiempo conmigo

J: si si si si

L: [] no se graduó

J: si si (x) a::: pues tan chévere

L: entonces (x) claro tu también tienes que tener tu opinión (x) de (x) de qué efecto pudo haber tenido eso (x) qué se hacen en las salidas qué (x) u:: ahí estoy hhh

L: hhhhhhh

J: un murciélago (x) está chévere (x) están muy bonitos (x) y éstas uno donde las consigue (x) en la librería UN o:=

L: no sé si están (x) ahí arriba (x) deben estar (x) no sé si están a la venta en la librería pero pasa y pregunta (x) a:: (x) ahí en la dirección (x) a::: yo soy biólogo y estuve en campo capote y quería saber si (x) a:: (x) estudiantes a ver (x) cuál es tu nombre perdón

J: Juan Pablo González

L: vamos a ver si aparece Juan Pablo González o no (x) está acá (x) Juan Pablo González aquí está::: (x) vea

J: vea o sea que fue de ésa salida (x) será que menciona el evento de la enfermedad

L: sí se leyó (x) sí se leyó

J: no::

L: no (x) no se ha leído=

J: a::: ya me leí (x) um:: sí interesante (x) profe le puedo tomar una foto a esto (x) profe

L: cla::ro

J: pa mostrárselo a los compañeros

L: hhhhhhhhhh

N: hhhhhhhhhh

L: listo (x) si []

SECOND RECORDING AFTER A CUT. BUT THEN LÓPEZ REMEMBERED A LETTER THAT HE STARTED TO READ.



L: y un ciudadano que no había interpuesto la denuncia (x) masacre de cincuenta aves por el profesor Gary Stiles y solicitaba a las autoridades policivas hacer la diligencia de verificación de la presencia de las aves (x) y que se presentara el permiso de colecta científica (x) de acuerdo a la legislación vigente (x) adicional a esto (x) la persona demandante dijo ser periodista y ser miembro de una asociación protectora de animales

J: jum:: el periodista

L: ujum (x) listo (x) a es que los otros profes a es que yo fui el que los recibí (x) los otros profes no estaban (x) teniendo en cuenta que el profesor coordinador y los otros profesores participantes no se encontraban en el momento (x) el profesor Hugo López (x) o sea yo (x) solicitó a la inspectora de policía esperar la llegada de los mismos antes de comenzar la diligencia (x) una vez llegados el profesor Gary procedió a presentar el material recolectado el cual contabilizo eran veinticuatro individuos de diecinueve especies (x) no eran cincuenta (x) bueno (x) a:: (x) listo (x) sin embargo al ser solicitada la copia de permiso de investigación (x) Gonzalo Andrade no la tenía (x) listo (x) ahí está toda la historia (x) la inspectora se comunicó con la corporación (x) era la CAS (x) corporación (x) autónoma regional de Santander (x) CAS (x) si:

J: CAS

L: la que le indicó que el procedimiento debía que hacer era decomisar el material biológico de aves y que enviaran una comisión de biólogos que llegaría a verificar el material en horas de la tarde (x) una vez (x) definido esto (x) se le informo a la inspectora de policía nuestra intención de dejar en su custodia los ejemplares (x) previo a las recomendaciones para su preservación (x) luego de la entrega y de firmas los respectivos descargos (x) el grupo de estudiantes y profesores iniciaron su retorno hacia Bucaramanga (x) hacia Bogotá vía Bucaramanga (x) donde llegamos a las cinco pm (x) dice:: (x) cabe aclarar que en ningún momento ningún profesor o estudiante o administrativo de la universidad fue retenido por las autoridades policiales (x) y que siempre recibió un trato respetuoso de las autoridades y la solidaridad de algunos habitantes de Zapatoca (x) listo (x) y ya

J: eso es como un informe (x) que les toco hacer o::

L: [si eso era] (x) ese era mi recorderis (x) listo pero ahí ya te lo conté todo (x) la CAS

J: sería mucho abusar de su confianza si me regala ese (x) documento

L: si

J: si

L: si (x) si (x) sería mucho abusar=

J: a::: ya

L: hhhhhhhh

J: hhhh

L: si (x) vale (x) pero ahí está toda la historia

J: no listo profe (x) de todas formas muchas gracias por su tiempo=

L: si::: (x) tu tienes ya todos los datos (x) y lo que pasa es que como ese comunicado nunca salió (x) nunca se se (x) emitió (x) eso era como (x) para que (x) con tantos chismes contemos lo que pasó (x) y eso fue lo que pasó

J: okey (x) se (x) eso nunca se publicó en ninguna parte=

L: no:::

J: pero por qué lo escribió (x) para::

L: yo lo escribí porque yo:: (x) con todos esos comunicados y esas noticias pues hay que sacar un comunicado oficial [ ]

Una cosa es cuando uno está en campo

J: aja

L: y llega uno y los vea reunidos a los cinco profesores (x) [(x) eso se (x) digamos que se diluyo ya después (x) e:: (x) lo que se hizo (x) que me parece (x) lo más lógico

J: [¿?????] RING (x) y qué profe qué pena con usted (x) entonces que fueron [cuatro de la ACAC]

[]

## John Lynch

ICN (Bogotá, Colombia)

11/11/2014

51 minutes,10 seconds

E: bueno nos encontramos hoy con el profesor John Lynch de la Universidad Nacional de Colombia e:::: para hablar un poco sobre lo que aconteció en Zapatoca Santander en el año 2012 en una salida de taxonomía animal

L: doce=

E: si no estoy mal fue en el año 2012 profe o:::: usted que recuerda

L: no no este diez o once yo creo

#### SE DIRIGE A UN ESTAN CON LIBROS PARA SACAR UNA AGENDA DE NOTAS

L: ()

L: hay tantos años hhhh pero afortunadamente tengo mis notas de campo hhhhhh

a::::

na::::: tenía razón 2012

E: mas o menos se acuerda en qué mes o en qué fecha=

L: =mayo mayo

E: en mayo de esta salida fue de más o menos que una semana quince días

L: como quince e:::

E: en general=

L: = yo empecé (.) de trabajar allá el veinte de mayo

E: aja

L: y (X) veintinueve todavía treinta todavía (X) hasta el treinta

E: hasta el treinta de mayo o sea el treinta de mayo ellos se:: devolvieron para Bogotá o::::

L: no fue el último día de (X) mira las (.) esta clase (.) es para entrenar estudiantes de pregrado (.) en técnicas de campo (.) entonces ellos hacen rotación entre los profesores (.) y unos dos días con grupo uno dos días con dos etcétera (.) entonces este es diez días (.) y:: y:: la: el último día (.) o el día (.) si:::: probablemente el último día (.) es cuando ellos tienen su parcial para que aprendido en campo (.) y yo y mi monitor (.) este día yo entregue mis preguntas y seguimos coleccionando hhhh

E: hhhhh claro como aprovechando como el día=

L: =siiiiii porque los dos poder buscar cosas de interés investigativa Marvin que fue mi monitor estudia renacuajos de estas (.) ranas que el nombre como medio común es ranas tóxicas

E: ujum:

L: toda rana son tóxicas pero (.) el que en general son muy bonitas ( ) esta=

E: a:: como *Phyllobates terribilis* esa es *Phyllobates terribilis* 0:::

L: no no no esta es (medio) ( ) rana *tomeia*:: *verobenensis* (.) esta es rana *tomeia tolimensis* no::: ( ) nombrado por una persona

E: si::

L: para ganar plata hhh (.) esto no es buena cosa

E: hhhhh

L: pero (.) entonces llegamos de Bucaramanga donde yo volaba a Bucaramanga yo no voy a montar en juemadre bus de la nacional (.) por un día entero (.) entonces yo volaba a Bucaramanga y esperaba a ell(hh)os

E: claro

L: y monta monta y al día siguiente montamos el bus (.) y una hora dos horas tal vez (.) zapatoca no es tan cercano (.) a bueno (carreteras son)=

E: regulares

L: regulares=

E: y estuvieron como tal en el municipio muestreando o como fue el lugar de muestreo o cerca a zapatoca o en el parque nacional yariquies=

L: ok=

E: donde fue exactamente

L: estuvimos en el municipio (.) yo he salido (.) hacia el norte hacia oriente hacia el sur (.) occidente a:: bueno estancias cortas casi estancias que (.) si uno quiere puede irse caminando

E: ujum

L: excepto cuando subimos a una reserva privada (.) de alguien que vive en zapatoca (.) tal vez su su reservita finca reserva

E: aja

L: pues cinco o seis kilómetros al sur del pueblo (.) y este es como la misma formación como de yarigües (.) y pero para mi trabajo del día (.) es poco productivo (.) porque todos mis bichos salen por la noche no del día=

E: claro

L: ( escondidita) (.) pero estuvo entre cuatro otros profesores de mariposas este sale del día aves sale del día

E: hhh

L: mamíferos a::: bueno ese ese nocturno también pero (.) el se fue para el paseo (.) y peces se fue (.) sin pensar que va a coger nada porque peces no sube la montaña (.)

E: o sea que en términos de colecta a quienes les fue mejor

L: u::: (.) a:::

E: exceptuando a los de insectos que seguramente siempre=

L: a: bueno ellos si::: nadie cuenta cuantos [( )]

E: [( )]

L: han contado (.) aunque Andrade es muy dedicado a coger (.) mariposas (.) mariposas que la colección merece (.) y los estudiantes cogen cualquier basura

E: hh

L: bueno (.) no necesito ( hhh ) botar (.) eso igual (.) yo puedo coger un montón de ejemplares una noche en un charco

E: por ejemplo:::=

L: para que

E: para que::: para que que para que

L: no no no no pero para que coger tantas (.) con cada grupo yo tengo que enseñar como sacrificar (.) como fijar (.) entonces con cinco chinitos (.) con diez ranitas ellos pueden aprender esto

E: ujum

L: no necesitamos: doscientas (.) de coger doscientas ranas en un charco en una nochecita en una hora (.) no es difícil

E: a::: o sea por ejemplo en el caso de zapatoca bueno usted que cree que con cada grupo colecta generalmente

L: como

E: con cada grupo de estudiantes más o menos cuanto ejemplares de (.) herpetos lo que conocemos como herpetos

L: a::: okey

E: herpetos colectan

L: va a coger (.) como (.) e::: diez ranitas por cada grupo (.) para que haya dos o tres para cada uno a fijar (.) vamos a coger tantos renacuajos como podemos encontrar (.) porque yo tengo mucho interés en renacuajos (.) y mi estudiante Marvin también (.) e::: (.) ni idea de renacuajos (.) e::: si yo llego a un charco y puedo coger doscientos a bueno yo lo tomo (.) no estamos dañando nada (.) cogemos todo culebras infiltrados (hhh)

E: o sea las culebras que encontraban si las agarraban=

L: to::: das

X: buenos días profe=

L: buenos días Marvin=

E: días=

L: porque es otro grupo que falta investigación (.) y al momento estoy muy metido en culebras

E: y allá les fue bien en zapatoca con respecto a este grupo

L: culebras no::

E: esas casi no

L: no no esas fue ( ) (.) e::: cogimos dos y::: un médico del pueblo me entregó dos más (.)

E: que ya estaban muertas=

L: que que que el ha fijado años antes

E: a::: antiguas

L: si (.) pero pero (.) nada de verdad cuando llegamos a zapatoca yo miraba el hábitat (.) y este va a ser malo (.) porque es (.) una zona poblada (.) por lo menos cuatrocientos años (.) ignorando indígena

E: antiguo un pueblo antiguo

L: si::: de la (.) de la época (.) de la conquista hhh a::: entonces toda vegetación natural ha sido tumbado equis veces (.) que está reduciendo mucho la (sobrevivencia)=

E: pero ahí mismo está el parque natural ya digamos una restricción a ese tipo de practicas=  
L: no no no no ( ) para para enseñar si yo encuentro un potrero con un charco pido permiso del dueño y entramos a este bueno  
E: ujum  
L: porque hay ranas que no importa  
E: y en el parque que tal era la diversidad o:: se [vio un contraste en el parque natural]  
L: [en el parque no:::]:]  
No::: no::: (.) no estuvimos por un lado fácil para entrar al parque (.) una subida de mil metros tal vez (no) pudimos entrar (.) (pero) de llevar cinco primiparos (.) no:: jueputa[ para nada]  
E: [hhhhhhh]  
L: a::: por buscar en (.) en zonas de rastrojo (.) que que (.) imitan un bosque (.) puedo trabajar en potreros hay cosas para coger en potreros (.) a:: nada excepcional (.) hemos coleccionado en los parques dentro del pueblo por la noche hhhh  
E: ( ) profe cuanto lleva en en esta labor de investigación y colecta de especímenes aquí:  
L: aquí en Colombia:  
E: ujum  
L: desde setentaynueve  
E: bastante  
L: y en america del sur desde el sesentaysiete hhhh  
E: y semestre tras semestre claro se da taxonomía animal digamos se hace una [salida tradicional]  
L: [a:: no no no no ] yo estoy aquí en la nacional solo diecisiete años (.) aunque (.) empece a salir con este curso en setentaynueve (.) y en ochentayseis ochentaynueve en varias ocasiones cuando un colega (.) de planta (.) tenía otro compromiso para reemplazarlo  
E: digamos en ese sentido usted diría que las salidas como tal que son con un fin como usted decía para enseñarle técnicas a los estudiantes pero igual le sirve a usted para investigación para recolectar [especímenes]  
L: [claro] porque para mi (.) la [co:sa]  
E: [y que se hace constantemente]  
L: peor de una de estas salidas (.) es que esta repitiendo un sitio ya coleccionado  
E: y lo que procuran es siempre buscar otro (.) [zapatoa]  
L: [si]  
E: nunca habían ido  
L: nada nunca y entonces este fue un plus (.) a: pero de llegar yo puedo ver que no va a ser espectacular porque el hábitat es tan transformado que va a ser solamente las especies tolerantes  
E: ujum  
L: y este es que hemos capturado menos una especie de salamandra (.) que fue una sorpresa por completo (.) en sobre una quebrada que aparentemente nadie nunca ha tumbado (.) pero estamos hablando de un parcela de bosque natural tres veces el tamaño de este cuarto hh un nadi:ta  
E: si: pequeño  
L: pequeñi:::simo  
E: inclusive la parque (.) la parte del parque natural estaba muy afectado  
L: no::: nunca he trabajado en yariguies  
E: a:: pero no me comento que alcanzaron a estar en un parte=  
L: una parte que es al sur del parque  
E: hmm (.) pero no en el parque=  
L: que es una reserva privada (.) pero allá yo estaba atrapado de buscar de día  
E: si:::  
L: que no es la la la la hora apropiada (.) también puedo hacer turismo con lo demás cogimos una culebra (COG) una culebra que esta tomando sol  
E: hhhh  
L: jam y tal vez unas pocas ranitas  
E: okey (.) profe con respecto a esta salida pues digamos en parte me intereso (.) porque paso:: digamos un evento anómalo seguramente con respecto a otras salidas no::: tengo enten[dido]  
L: [si:::]  
E: que alguien tomo una denuncia con respecto ( ) (practicar) me gustaría saber lo que usted=

L: no no no no el tipo hizo (enviolarla) (.) por (.) la (.) entre comillas (.) matanza de aves  
E: exac. O sea solamente por la matanza de aves no era en general por la salida (.) por [otro] especímenes  
L: [no:::]  
E: o porque era=  
L: no nada ni idea porque el tipo a: (.) a: a hecho un (dedazo contra) aves  
E: o sea el se enfoco en las aves  
L: si:::  
E: okey (.) y profe porque dice entre comillas matanza  
L: no ese fue lo que el dijo (.) pero Gary es igual que yo: liberamos mu::cho que cogimos (.) pero un cantidad de ejemplares esta preparado (.) para enseñar como se prepara bien:  
E: ujum  
L: y vi Gary ha coleccionado (.) veinte aves  
E: de esta salida en particular  
L: en general el el no es es nunca (.) el coge puede coger cincuenta aves en una mañana  
E: ujum  
L: pero el esta fotografiando midiendo (.) y libera casi todo (.) es pero el (.) debo (.) seleccionar algunos para que todos todos los estudiantes aprendan la preparación bien:  
E: y como tal usted en ese momento cuando pasa esto que ocurre usted que (.) usted donde estaba en ese momento::: cuando llega esta persona: donde estaba cuando lle::ga como fue como la interacción  
L: no::: todos estuvimos en un colegio  
E: o sea estaban en un colegio cuando llega este personaje=  
L: no::: llego la gente (.) de la car  
E: de la car  
L: si (.) y yo no estaba preocupado yo tenia mi permiso para coleccionar culebras (.) a::: pero el único que el tipo esta enfurecido a::: y el dia anterior hemos todos presentado charlas para la comunida:d sobre nuestras actividades=  
E: y::: el fue a una de esas charlas o:::  
L: ni idea  
E: no se sabe  
L: puede ser (.) es abierto al publico  
E: profe una pregunta usted comentaba que usted no estaba preocupado porque tenia su permiso  
L: yo si=  
E: o sea para colecta de especímenes si  
L: si=  
E: y::: pero [como tal]  
L: [a nivel nacional]  
E: a::: okey o sea todos en general tenían permiso era un permiso global o:=  
L: no yo::: (.) porque yo en dos mil (.) once empece el el trabajo (.) con el ministerio de medio ambiente (.) en un proyecto que ya llevamos tres años (.) casi cuatro (.) a::: cuatro si (.) para evaluar el estatus de conservación de serpientes de todo el país  
E: ujum  
L: entonces en ese momento saco su permiso y ese permiso le servia::=  
L: en cualquier pedacito de la nación menos dentro de parques nacionales (.) que es otra unidad administrativa hh (.) a::: el ministerio de medio ambiente a: yo puedo decir a julio miranda que es director nacional de parques que no:: Lynch tiene que entrar su parque (.) yo necesito permiso de parques que es (.) o::tra=  
E: otro permiso que hay que sacar o:::  
L: y es especial para un parque u:::n parque  
E: a::: okey (.) y los demás profesores de la salida también tenían permiso o no:::  
L: no::: no::: creo que ninguno a::: bueno ni idea (3) a::: (5) a::: (9) pero pero yo siempre estoy preocupado primero por mi h[hhh]  
E: [hhh]  
L: y mis mis mis (.) estudiantes de postgrado y::: y::: (.) yo asumo que todo el mundo estaban en esta situación pero no  
E: entonces ustedes hacen unas charlas como comentando lo que hicieron en (parte) sobre los grupos=  
L: que que hicimos en en nuestra visi[ta a] su su (.) municipio

E: [ujum] y al otro día ocurre el encuentro con las personas de la car

L: si::=

E: si: okey y en ese momento ellos llegan usted donde esta en ese momento cuando ellos llegan como los abordan o usted que vio de eso

L: no:: es que (vivíamos ) en el cuarto piso del colegio (.) y ellos subieron (.) ellos (.) donde estaba la gente de la nacional y en el colegio no:: en el cuarto piso

E: ujum

L: donde tuvimos laboratorios (.) y los estudiantes pudieron ir

E: a:: ustedes se quedaron como tal ese fue su campamento base fue el colegio

L: si:: el colegio:: no tenia clases

E: aja:: aprovecharon=

L: entonces ellos prestaron este espacio para nosotros (.) y claro esto es mejor que pagar hhhh

E: hhhhh claro y después llegan los de la car ahí

L: ujum

E: ahí no en campo digamos a:: bueno y como llegan esas personas que les dicen

L: no:::: llegaron y dijeron que tenían una denuncia (.) por la matanza de aves (.) y ellos (.) queremos ver esta

E: ujum

L: y Gary tenía en su cajita con las pieles

E: si:::: y quien denuncia supieron que denunció o::

L: hubo un tipo que vivió en zapatoca=

E: alguien no supieron (quien)=

L: no:::: es un:: ciudadano

E: un ciudadano: y quienes llegan cuantas personas y se identifican de la car las personas que llegan como tal a decirles que hay una denuncia

L: a:: vino al colegio (.) un policía de zapatoca

E: a:::: vino la policía con la gente de la car

L: y y una persona de la car

E: okey una persona y un policía o (algún señor)

L: no dos (policías) no recuerdo

E: y una persona de la car

L: si::

E: y recuerda el nombre de la persona de la car o como=

L: no:::: (.) a:::: (.) quien puede (.) en la organización de una salida hay un profesor que es coordinador (.) cog (.) y el coordinador de la salida a zapatoca fue (.) Gonzalo Andrade entonces=

E: Gonzalo Andrade fue el coordinador=

L: de mariposas

E: y de la salida fue el coordinador el

L: amm

E: el fue el coordinador de toda la salida Gonzalo Andrade

L: toda salida de este tipo tiene un coordinador

E: si:: y en esta ocasión fue:=

L: que maneja la pla:::ta

E: los conta:ctos=

L: que busca donde vamos a queda:::r donde vamos a come::r to:::do estos=

E: si::::

L: detallitos

E: claro que son indispensables para que=

L: a::::

E: indispensables para que se de la salida

L: si:::: pues ellos normalmente tienen que viajar una o dos veces antes (.) a hacer todos esos arreglitos (.) yo acabo de volver de san jose de Guaviare (.) estuve en un otra de estas (.) que la profesora ha programado (.) dos días antes de la salida anunciaba (hhh)

E: [ujum]

L: que no podía (.) entonces pá::nico aquí ay::: pero quien puede ir

E: hhhh

L: a::: (.) y y (.) otra vez yo volaba a san jose yo no monte en un jueputa (E: hhhh) bus para un día la:::rgo bogota a villao villao alla no no no gracias (.) a::: y y cuando yo a:: yo he hablado con ellos por celular que están acercando el campamento (.) entonces yo montaba en un taxi y me fui para el campamento

**FOTO EN PC.** E: okey profe una pregunta esta persona que esta aca es la persona que hizo la denuncia lo reconoce

L: jum:::

E: ni idea

L: ni idea

E: pero usted vio a la persona: [( )]

L: [ni idea] no:::

E: a::: no usted no la vio

L: a:: a juicio mio yo no he visto

E: a::: o sea usted no estaba en el momento cuando ellos llegaron

L: no no no no::: (.) el hizo puso su denuncia con la policía de zapatoca

E: ujum

L: policía de zapatoca por supuesto (.) ha hecho contacto con la corporac[ión autónoma de santan]der

E: [autónoma de Santander]

L: que cubre la zona (.) y:: e:: (.) el grupo fue un representante de (.) de la (.) corporación (.) y la y la (.) dos policías

E: okey

L: realmente zapatoca tiene más que do::s policías (.) pero aparecieron dos

E: okey hh usted me comentaba que les muestra el profesor Gary stiles les muestra los especímenes y ahí que se los llevan::: que pasa con esos especímenes

L: a::: (.) charlamos un rato (.) y ellos se fueron (.) pero regresaron (.) como un par de horas después el resto después yo no estubo

E: ujum

L: y denunciaron que tienen que confiscar esta (.)

E: las aves

L si:: y llevaron la::: (.) la::: (.) creo que su oficina es en san gil

E: se llevaron las aves a san gil

L: ujum

E: y solamente las aves no les intereso los otros especímenes=

L: no tenían interés en nada mas

E: okey y en el momento en que ellos llegan como ustedes reaccionan como profesorado ante (.) ante digamos esta denuncia (.) o que comentan entre ustedes (.) cual es su:: reacción

L: a::: (.) mi reacción fue un poco de sorpresa

E: es la primera vez que usted ha visto que les pasa algo asi

L: sip

E: o sea dentro de los tanto años me comentaba que aquí en la nacional diecisiete

L: ujum

E: nunca había pasado algo asi o::

L: nunca

E: o siempre habían iban a su: trabajo de campo no no no::: encontraban ningún tipo de rechazo con respecto a la practica de colectar de la comunidad o::

L: bueno cuand:: si si si yo quiero entrar a propiedad de alguien (.) a::: yo pido permiso y explico que quiero hacer

E: ujum

L: y si ellos dicen que no (.) pues no::: no voy a argumentar (.) porque hay mas potreros (.) mas rastrojos (.) mas casas abandonadas que cuando (yo produzca) bichos

E: ujum

L: pero me parece muy grave entrar propiedad sin permiso

E: claro

L: entonces no ha:::ce

E: y otros profesores bueno obviamente usted tiene sorpresa porque es la primera vez que le pasa esto y los otros profesores que comentan e::: como que les dicen a los funcionarios

L: e:::

E: hubo una discusión o algo así:: hubo un momento como de=

L: sí:: fue una discusión porque (.) Andrade está:: argumentando (.) que que había un permiso marco para cubrir estas actividades de docencia (.) a a pero la representante de la corporación no estaba segura que esta fue suficiente

E: okay (.) pero si digamos tenían el permiso porque optaron por::r (.) entregar los especímenes

L: no no no no:: es decir si un oficial insiste (.) que uno entrega el material (.) uno no tiene opción

E: y después que pasa con ese material profe (.) ese material (.) lo lo lo=

L: el material aparentemente (.) toma::do por la corporación a la universidad industrial de Santander

E: y en este momento está allá (.) o::::

L: yo asumo yo yo yo estudio culebras yo visito el país con frecuencia

E: ujum

L: pero yo no voy a buscar la colecc(h)ión de aves

E: hhh

L: no hay no hay nadie allá que estudie aves

E: y quien les dijo que había terminado allá (.) como llegaron a saber eso (.) a esa colección

L: no recuerdo si fue Gary o si (.) fue Gonzalo quien me dijo que este fue el resultado

E: o::key (.) y después de que pasa esta denuncia llega esta gente se lleva las estas como es el ambiente digamos en la porque supongo que obviamente ese es un tema para hablar entre ustedes que comentan (.) que de pronto se acuerde

L: a::: (.) no las personas las dos personas que tenían que (.) que responde::r fue Gonzalo y y Gary

E: ujum

L: Ga Gonzalo como coordinador (.) y Gary como como (.) la persona afectada

E: sí:: (.) usted como tal no:: discuto con estas personas

L: no no no no regresamos a Bucaramanga (.) y el día siguiente yo montaba mi avión para volar a Bogotá (.) y ellos montaron su su su

E: su bus

L su bus hhhh (.) para eventualmente llegar a Bogotá

E: aja

L: y de llegar a Bogotá Gonzálo hizo contacto con los abogados de la Nacional (.) en un intento de recuperar este material

E: que::: como que no se recupero (a usted que le parece )

L: que que aparentemente no::

E: a::: ok complicada la vaina (.) bueno profe yo le quiero leer (.) unos:: extractos=

L: jum=

E: que saqué de::: algunos medios periodísticos

L: a::: si esta apareció en el periódico si

E: sí:: entonces para saber cual cual es su posición opinión respecto a este tema (.) en un medio periodístico de Caracol Radio (.) en el (.) publicado en mayo treinta y uno del dos mil doce (.) mas o menos acaba la salida cuando el treinta de mayo::

L: el treinta de mayo fue el último día que yo estuve coleccionando (.) sí:: entonces el treinta y uno (.) gente esta regresando a Bogotá

E: o::key al parecer ese mismo día tres medios periodísticos mencionan el:: tema

L: ujum=

E: lo que paso (.) entonces en uno de ellos pues voy a citar lo que se comenta (.) en Caracol Radio (.) según el coronel Edgar Nieto comandante de la policía de Santander (.) abro comillas ésta clase de investigaciones cuando se realizan en parques naturales deben tener un permiso especial el cual no lo tenía esta comisión de la Universidad Nacional (.) que [pie]

L: [pero] no estuvimos en un parque nacional

E: entonces usted creería que ahí están equivo[cados]

L: [pero] pero sí::: no::: pero que ha dicho (.) claro es correcto (.) yo no colecciono dentro de un parque nacional si no tengo autorización

E: aja (.) o sea lo que dice es cierto debe tenerse un permiso espe[cial] más ustedes nunca colectaron en un

L: [claro]

E: parque natural

L: exacto::

E: colectaron pues como usted decía en las partes=



L: en una otra salida que yo no estuvo (.) ellos han hecho una colección dentro de yariguies pero yo no fue invitado a esta=  
E: aja  
L: fue otra (colmenor)  
E: pero igual (.) tiene que tener el permiso especial en parques pero también afuera (.) así no sea un parque  
L: a:: si:: (.) si  
E: o::key listo en ese sentido usted cree (.) si:: tenían de todos modos usted me comenta si:: tenía el permiso (.) pero los otros pues no:: (.) los otros profesores o la salida como tal=  
L: la salida como tal que es doce::encia  
E: ujum (.) tenía permiso  
L: hasta yo entiendo  
E: ujum  
L: pero esta no fue una preocupación especial a mi (.) porque como yo he dicho yo estuve trabajando (.) bajo las (autoridades) de dos convenios de medio ambiente=  
E: si::  
L: e:: claro medio ambiente no ha dicho a::: visita Zapatoca(h)=  
E: aja: hh  
L: a: (.) a: (.) (primera) ven por acá (9.5) todo esos puntos verdes estaba coleccionado (.) con esos convenios  
E: los puntos verdes  
L: si:: este es (.) si donde donde hay un punto en Antioquía en Choco en Nariño en (.) Bolivar en Magdalena en Santander en Cesar=  
E: aquí es donde (.) todos los lugares en donde usted ha colectado o:::  
L: s[i:::]  
E: [dura]nte todo su tiempo en la Nacional o::: (.) [le faltan puntos]  
L: durante estos [treinta y cuatro]años  
E: o todavía le faltan puntos que ( )  
L: o::: seguramente yo puedo visitar [otros sitios]  
E: [ seguramente] (.) uy::: claro aquí hay un reguero de partes que todavía falta (.) [falta por visitar pero es increíble]  
L: [a::: no::: esto es por falta de transp]orte  
E: claro y de pronto de seguridad no: que también es=  
L: a: bueno bueno si: (.) si mis visitas a Caqueta son más antiguas  
E: si::  
L: COG COG o colores son de Caldas COG (.) blanco es los ochenta (.) rojo los noventa=  
E: a::: es por épocas  
L: hhhh [azul es la primer]década de éste siglo  
E: [interesante forma]  
L: verde es el segundo hh  
E: interesante porque así más o menos tiene uno visualiza cuál fue por ejemplo la década en que más tuvo salidas no:::  
L: cómo  
E: uno visualiza (.) la década en la que más tuvo salidas no: (.) si por ejemplo veo que hay hartos blancos  
L: si:::=  
E: en la cordillera de los Andes no entonces fue un periodo muy::: (.) de salir a colectar (.) en qué época: blanco qué significa:  
L: los ochenta=  
E: los ochentas  
L: no pero mira (.) la cosa es (.) en los ochentas y noventas mi preocupación fue la zona andina  
E: okey (.) también por la pregunta de investigación=  
L: exacto (.) y luego mis preguntas ha cambiado a tierras ba:jas  
E: ummmm=  
L: tonces por esta (.) blancos y rojos fuera de la zona andina (.) son poqui:::tas  
E: si:::  
L: más que todo son salidas de campo con con (.) éste curso  
E: o:::key

L: a: a: (.) pero azules y verdes es es (.) casi exclusivamente tierras bajas  
E: si si eso veo=  
L: donde hay culebras donde hay renacuajos donde hay ceci(hh)lias  
E: o:key=  
L: o:: claro hay ranas también ( )  
E: falta harto del choco no:: [tocó ir para allá]  
L: [a:: si pero el pro]blema ( ) el problema grave de orden pú[blico]  
E: [si:: si::] sobre todo  
aquí y en parte de Cauca=  
L: Cauca:: (.) y y Nariño son zonas peligrosísimas  
E: si::  
L: igual Putumayo:: (.) partes del Caqueta detrás de la Macarena ( ) uno tiene que ser un brut=  
E: hhhh  
L: Catatumbo  
E: hhhhhhhhhhhhhhhhhhhhh  
L: [tiene que ser un bruto] de entrar (.) no va a salir  
E: hhhhhh  
L: hhhhhh (.) es como fácil de entrar pero  
E: pero salir=  
L: [(si uno)] (quiere) salir=  
E: si si ese es el desafío  
L: exacto  
E: bueno quiero leerle otro fragmento profe de::: (.) este (.) el que le comenté era:: (.) de caracol radio (.) este es de agencia de noticias UN (.) la comenta es una cita de (.) que:: comenta el profesor Gonzalo Andrade=  
L: ujum=  
E: es algún comentario de él (.) del profesor Gonzalo Andrade (.) dice (.) abro comillas esto fue una mala información (.) por que no quedaron personas detenidas y menos se hizo matanza alguna de aves (4)  
L: correcto  
E: entonces (.) no hubo matanza (.) que era lo que usted decía al comienzo entre comillas pero sí se mataron aves  
L: si::: pero pero una matanza es es arrancar con las aves  
E: arrancar con las aves  
L: en un (sectorito) (.) matar por matar (.) esto nunca ha pasado  
E: porque:: (.) había un fin digamos (.) académico::  
L: si::  
E: okey (.) otra:: de las fragmentos que le voy a mencionar es es el siguiente hay que dejar claro que la inspección de la policía se debio a la queja de un ciudadano (.) producto de una mala información y que se procedió a la incautación  
L: ujum=  
E: como usted me acaba de decir cierto (.) pero (.) quería hacer énfasis un poco en en en lo que dicen una mala información (.) porqué sería (.) mala (.) digamos e::: (.) en el sentido de que=  
L: en el sentido de del tipo:: (.) no tenía ni ide:::a en que consiste una actividad de docencia  
E: o:::key (.) más sin embargo usted porque cree que hace la denuncia  
L: jum:::  
E: porque digamos una de las cosas que decían ere porque no tenían el permiso (.) cierto:  
L: ( )  
E: pero bueno en su caso no:::  
L: este no es pertine:nte (.) si estuvimos en un parque nacional este sería otra casa  
E: ujum  
L: a:: pero estuvimos trabajando en una actividad que que el instituto ha hecho desde el setenta y cinco (.) cada semestre (.) saliendo (.) haciendo recolecta de material (.) en un programa de docencia  
E: si:: (.) es algo tradicional y como usted me decía es algo que nunca les había pasado (.) como tal=  
L: en experiencia mía nunca

E: o::key (.) en esta misma noticia de agencia:: de noticias UN (.) abajo hay una serie de comentarios no: a mi me llamó la atención porque:: muchas de las noticias de UN no son muy comentadas pero aquí hay cerca de cu[arenta comentarios]

L: [a:: no hay mucho] mucho (.) yo llamo (.) ecolocos

E: ecolocos como así::

L: si::: son son ambie ambientalistas (.) que no quiere que nadie mate na::da

E: aja: (.) que digamos usted considera que para su: labo::r (.) es fundamental naturalmente

L: e:: (.) ellos pueden argumentar no no no pero el instituto si tiene suffi (.) por qué mata más animales=

E: que es suficiente el instituto (.) o::

L: si::: (.) este es que ellos piensan

E: si::: (.) a propósito le voy a leer unos fragmentos para (.)saber un poco su o[pinió]n

L: [si:::]

E: un fragmento de una persona dice lo siguiente (.) con respecto a esa noticia (.) no:: definitivamente no estoy de acuerdo que se deban sacrificar vidas para investigar (.) [investiguen]

L: [a:::( hhhh)]

E: como preservar la vida no como quitarla=

L: a:: si::

E: si:::

L: ecoloco

E: ecoloco hhh (.) otro fragmento dice lo siguiente (.) de otra persona (.) si:: hay salidas de campo semestrales (.) o anuales:: (.) uno asume que en varios casos ya deben tener varios ejemplares de la m[isma es]pecie

L: [(cacumen)]

E: para qué (.) ta:::ntos (.) entre comillas=

L: (exacto)

E: antes de estas salidas los estudiantes deberían ir al icn o donde corresponda y estudiar los especímenes que ya tienen para para que solo se colecte (.) entre comillas (.) lo indispensable

L: esto es que no hacemos

E: o sea usted no estaría de acuerdo por ejemplo que::: primero se:: (.) porque eso era algo que se comentaba=

L: no no no (.) para na::da (.) los estudiantes en el curso (.) si tienen actividades (.) previas=

E: ujum

L: pero este es: para aprender técnicas de campo

E: a propósito hay otro comentario al respecto (.) hay que usar la tecnología que ya existe para dejar de matar individuos en pro del conocimiento (.) esto ya no se necesita (.) se pueden coleccionar muestras de ADN fotografías videos GPS etcétera (.) y dejar a la fauna y flora en su sitio

(7,5)

L: si en parte pero de sacar ADN (.) es haciendo una intervención contra el individuo (.)

E: ujum

L: y este es (.) esta persona es un idiota a juicio mio

E: ujum

L: porque si uno saca ADN (.) el de un individuo (.) la probabilidad de sobrevivencia es reducida

E: ujum

L: especialmente si es (liberada) (.) después (.) a::: (.) uno tiene que tratar a un ejemplar después que ha sacado ADN si como fue paciente (.) de ciruji::a (.) y este idiota obviamente no tiene la primera idea de esto (.) esta inventando un comentario (.) con cual (.) claro se pueden tomar fotos (.) si y solo si la especie está conocida

E: que ya se sabe muy bien externamente como para (.) que se algo útil digamos

L: si::: no::: hay espicis (.) que yo (.) puedo identificar que (.) mirando al al animal desde (.) hasta este escritorio (.) pero hay otros que para na::da

E: ujum

L: y solamente un idiota asumo que la fauna de Colombia está conocida

E: o:key

L: hhh

E: para terminar profe para no quitarle más tiempo (.) e::: (.) a mi me llamó mucho la atención los titulares de ésas dos noticias (.) una caracol radio

L: ujum  
E: y la otra de de la agencia de noticias  
L: ujum=  
E: entonces (.) el titular de: (.) de::::: (.) caracol  
L: ujum  
E: dice lo siguiente (.) comisión de biólogos de la universidad nacional fueron detenidos por sacrificar animales en un parque natural de Santander  
L: hhh  
E: umm (.) que como usted me comentó (.) no::: no [fueron]no estuvieron en parque nacional]=  
L: [es es es]  
L: mira=  
E: y no hubo como tal detención de biólogos=  
L: gente que trabaja en:: (.) noticiero (.) están buscando escandalo (.) entonces estos son los títulos  
E: ujum  
L: para que (.) la gente léa  
E: o::key=  
L: o escuche  
E: y por otro lado (.) el titular del de:: agencia de noticias ese si: es el siguiente biólogos de la UN retenidos por investigar  
L: no fue un: (.) no estuvimos reteni::dos  
E: también digamos ahí también se equivocarían según usted  
L: hhhh si:::  
E: e::: lo interesante es que en uno dicen por investigar el otro por sacrificar (.) pero (.) usted usted que diría=  
L: pero este son (.) ge:nte (.) que no son biólogos (.) para (.) puede ser puede ser (.) que: en la nacional (.) fue el vicerrector de investigación (.) que fue un fuente (.) e: en otro caso (.) el tipo está reaccionando a que ha dicho el policía  
E: ujum  
L: que esta (paciente) leyendo (.) una denuncia  
E: ujum (.) usted cree que aquí se le ponen muchas trabas (.) como en algún momento (.) varias personas (.)  
e:: incluyendo en esta noticia (a lo que refiere) a la a la investigación en Colombia a la colecta a todo (eso)  
(7)  
L: mucha gente (.) no::: (.) no: reconoce que que (.) un centro de taxonomía dentro del país (.) tiene que hacer recolectas (.) a: (.) ellos en su imaginación asumo que todo esta conocido (.) y está (.) muy muy mal informado (.) yo he nombrado para la ciencia más más de doscientas cincuenta especies de ranas en colombia=  
E: doscientas cincuenta solo usted  
L: so::lo yo::: de colo::mbia  
E: de Colombia  
L: y diez o doce especies de culebras (.) en estos últimos años (.) a:: (.) que antes no fueron conocidas (.) hh (.) y tengo ma::s  
E: ujum  
L: de otras salidas que que (.) no he tenido chance de se:ntar (.) dibujar y describi:r  
E: si además (.) debe haber ya bastante material de todas las salidas (.) en parte  
L: yo:: tengo más de mil culebra aquí antiguas (.) que h(hhh) emos coleccionado en estos=  
E: aquí está la: colección mas grande de herpetología como tal o:: (.) en la nacional:  
L: cla::ro  
E: que tengo entendido que=  
L: más más (.) más grande (.) es la segunda más grande de américa lati::na  
E: y más o menos (.) bueno deben saber los (.) números si::: bueno exceptuando las que acaban de llegar de::: (.) porque tengo entendido que casi (.) como novecienta:s cincuenta mil (.) de todo  
L: a::: si: (.) pero de anfibios sesenta mil  
E: de anfibios sesenta mil  
L: de: reptiles tal vez veinte mil  
E: y salamandras y=  
L: a::: bueno salamandras son son (.) son anfibios  
E: a::: bueno si:: (.) y las mismas cecilias (.) o::key (.) bueno profe (.)

L: hhhh=  
 E: muchas gracias por su tiempo=  
 L: a: bien=  
 E: por sus comentarios (.) e::::: (.) entonces está de acuerdo con que yo utilice esto con fines educativos e investigavos  
 L: no:: tranquilo no me molesta  
 E: bueno profe cualquier cosa entonces lo estaré molestando en otra oportunidad  
 L: a::: bn  
 E: aj::: muy amable profe  
 L: a: bueno (.) tengo que reponer mis notas de campo  
 E: muchas gracias por todo (.) que le vaya mu:y bien (.) que tenga buen día

## IDEAS

Resaltar cuestionamiento sobre el momento de los eventos  
 Pausas continuas en la conversación  
 El entrevistador repite lo último dicho y deja una continuidad con una o:::: para permitir continuidad  
 Profesor hispanohablante  
 Reflexión sobre las particularidades en los supuestos extra que se toman cuando se habla con alguien de diferente lengua  
 Tener que explicar el entrevistador la motivación de su entrevista “lo anómalo”  
 “o sea” “ujum” enhancer advices  
 Profe profe  
 O::::: continuing device  
 Repeting last words  
 a::::: okey  
 diminutivos Lynch  
 yo suministro más información que él mismo encuestado Gary Styles  
 las pausas son mas frecuentes en el encuestado que en el encuestador  
 recapitulación según lo dicho para continuar con una secuencia  
 an effort to look competen in conversation consist in finishing sentences even though you play the role of ignorant-interviewer  
 fronteras sobre el territorio, en el parque o no  
 saca el mapa para mostrar lugares  
 branching pattern in conversation and interaction of supossed straigh sequences of events  
 no::::  
 señalar la mezcla de textos de otras fuentes como cuando se cita a alguien  
 la gramatica, sintaxis de un evento natural tiende a alejarse sin perturbar la interacción  
 “okey” as checking-validating-a-given-answer  
 “digamos” suponer, ejemplificar sin comprometerme  
 “no::” al final como invitación para corrección y por tanto como un turning device en potencia  
 El entrevistador también tiene la sensación de estar entrevistado y juzgado por lo que conoce

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40 minutes, 41 seconds

A: tú me vas (x) haciendo: (x) todas las preguntas (x) y

J: si

A: si

J: si yo te voy diciendo todo no te preocupes (x) bien (x) bueno nos encontramos (x)CON (x) la biólogo (x) cierto ya (x)legalmente bióloga de la universidad nacional Ángela Lisbeth (x) e::

A: Barbosa

J: Barbosa (x) bien (x) Barbosa (x) bueno (x) hoy es qué (x) veintisiete de octubre de dos mil catorce (x) bueno gracias Ángela (x) bien (x) e::: (x) tu fuiste a la salida de campo de taxonomía animal (x) si no estoy mal

A: si::

J: hace cuanto (x) fuiste a Zapatoca (x) para esa salida (x) más o menos cuando fue esa salida

A: eso fue::: (x) como hacia los meses de mayo y junio del dos mil trece (x) finales de mayo comienzos de junio de dos mil trece

J: okey bien (x) cuál era el propósito (x) digamos los profesores les comentaban era el propósito de ésta salida

A: e::: (x) el propósito pues era básicamente hacer una::: (x) una: caracterización biológica de los diferentes grupos (x) e::: (x) animales que se encontraron en la zona (x) entonces e::: (x) nos dividimos e::: (x) en diferentes grupos para hacer esa investigación (x) nos dividimos en el grupo de herpetos (x) en el grupo de peces (x) e::: mamíferos (x) e: aves e insectos

J: principalmente vertebrados e insectos

A: si:: exacto []

J: solamente animales

A: solamente animales investigamos

J: okey bueno (x) y en parte: bueno (x) yo soy biólogo (x) también salí a una salida similar (x) en parte digamos la idea es enseñarle a uno técnicas de colecta

A: exacto siempre (x) principalmente ese era el objetivo de la salida

J: te acuerdas de algunos tipos de colecta cómo se hacían (x) como la experiencia digamos de la colecta (x) para ti que significo esa experiencia

A: um::: (x) pues para mí fue mu::y chévere porque (x) es aprender el principio básico de la colecta (x) e::: (x) como las variables que uno debe tener en cuenta::: a la hora ::: (x) de coleccionar un organismo (x) me parece: (x) más importante en sí que la misma colecta (x) y::: (x) pues recuerdo mucho es::: (x) las técnicas por ejemplo para capturar insectos (x) se usan diferentes trampas (x) y algunas se tienen que dejar uno o dos días (x) mientras los animales caen en las mismas (x) e::: (x) pues otras metodologías eran (x) las que se manejaban para coleccionar mamíferos para coleccionar aves que era con redes de niebla (x) y pues era aprender (x) e::: (x) básicamente los horarios que manejaban los animales para poderlos capturar (x) y::: (x) y::: como digamos las áreas más favorables para: (x) para capturarlos y para observarlos

J: importante tu crees para (x) tu quehacer como bióloga (x) es indispensable aprenderlas y las colecciones biológicas como tal o sea el producto de éstas (x) prácticas de colecta

A: el producto como tal (x) si es importante:

J: si: tanto::: la práctica para tu quehacer como bióloga (x) o que tan importante crees que es (x) y::: (x) las colecciones biológicas que digamos se derivan de esas prácticas

A: m::: (x) pues para mí las colecciones (x) e::: (x) no son tan determinantes en mi opinión (x) porque::: (x) personalmente considero que ya el país cuenta con un número de colecciones (x) considerable y unas bases de datos buenas (x) y creo que hay métodos estadístico como para determinar (x) en qué área hay equis organismo (x) entonces me parece que en algún punto las colecciones van a ser innecesarias (x) puede que en algunos lugares remotos sea necesaria (x) o::: (x) pero no son indispensables para el quehacer del biólogo

J: y por ejemplo para estudios que tienen que ver con evolución o conservación

A: aja

J: no hay que::: ir coleccionando siempre: (x) para saber cómo están las poblaciones y ese tipo de cosas (x) o si han cambiado las poblaciones

A: e::: (x) sí es necesario (x) pero pues hacerlo siempre me parece::: (x) que que (x) no lo amerita (x) porque creo que hay que se consciente que la naturaleza tiene una capacidad de carga y que no podemos estar coleccionando y coleccionando (x) y que creo que es (x) um::: (x) es (x) como diría yo::: (x) um::: (x) o sea es bien sabido para nosotros como científicos que (x) que hay variables que están cambiando (x) y que es imposible (x) saberlas todas todas (x) entonces como que atrapar todo ese: (x) número de::: (x) de diversidad (x) tener toda la diversidad siempre va a ser imposible

J: pero::: (x) bueno (x) por ejemplo en al algunas noticias (x) en algunos medios periodísticos (x) como en agencia de noticias (x) un (x) reporto un poco digamos lo que pasó (x) en este (x) en esta salida de campo (x) pues ahorita quiero que me comentes

A: si::

J: e:: tu decías (x) cuando tu decías (x) no hacerlo siempre a qué te refieres (x) digamos en cada salida de taxonomía o::

A: no pues me parece que:: (x) recuerdo mucho lo que hacíamos en aves (x) ya que:: dices eso (x) cayeron unos especímenes que ya se que ya otro grupo los había recolectado (x) y el profesor dijo no:: estos especímenes los vamos a liberar simplemente vamos a tomar medidas y los vamos a observar para identificarlos (x) me parece que ese tipo de cosas se puede hacer (x) es decir recolectar (x) para observar más no para sacrificar (x) los animales (x) ni los especímenes (x) pero entonces creo que sí deberían haber algo más::s (x) em:: (x) determinante en el sentido de cuántos especímenes debemos coleccionar y cuantos se deben sacrificar (x) porque no todo se debería sacrificar (x) como decíamos ya:: (x) me parece que ya hay un número considerable de:: (x) de colecciones (x) y hay mucho trabajo que hacer con ellas

J: y por ejemplo en el caso digamos de especímenes como (x) los insectos digamos (x) que muchas de las trampas (x) caen ahí y mueren (x) ahí que opinarías como tal en ese caso de los insectos porque digamos (x) los vertebrados bueno (x) como las aves (x) uno los captura y digamos que puede liberarlos o no

A: ujum

J: pero en el caso digamos como el de los insectos (x) y otras trampas que pueden matar (x) de manera más o menos inmediata

A: ujum (x) m:: (x) pues me parece que con insectos (x) de lo que he conocido (x) y precisamente lo que aprendí en esas salidas (x) que no:: (x) no hay como muchas barreras (x) para (x) para coleccionar insectos porque son organismos que se reproducen fácilmente y pues no hay (x) no hay muchas restricciones (x) para:: (x) o sea hasta un número límite se: (x) colecciona (x) entonces creo que no:: (x) no habría mucha: (x) limitación con ellos para coleccionar (x) y sacrificarlos (x) pues creo que desde que:: (x) e:: (x) digamos el insecto cae en un trampa que no le genere mucho:: (x) m:: (x) mucho pues dolor (x) o bueno no sé en el término de un insecto cómo se llame (x) pues creo que es lo más adecuado hacerlo: (x) lo más rápido posible (x) para que (x) el insecto: (x) no sufra entre comillas (x) en su fase

J: si:: yo me acuerdo a propósito una vez (x) terrible (x) [](x) nos pusieron a coleccionar arañas (x) para la clase de biología de arañas (x) entonces un compañero (x) quiso capturar una tarántula (x) y la metió en una:: (x) en una tasita ahí en alcohol (x) pero el alcohol estaba muy rebajado o lo que sea (x) duró como tres días en morir esa pobre araña

A: [que rabia]

J: teri: terrible (x) bue:no (x) muy bien Ángela o sea que para ti digamos (x) una salida (x) supongamos que tuvieras el poder (x) de planear tu la salida (x) tu eres la coordinadora de la (x) de la (x) salida de taxonomía animal

A: ujum

J: que que que (x) cómo lo planearías (x) qué restricciones (x) dado lo que me acabas de decir un poco (x) con respecto a la colecta de los especímenes

A: e:::: (x) pues yo creo que:: (x) tendría que elegir un lugar primero que no tuviera (x) es muchas especies vulnerables (x) ni que fuera (x) e:: (x) como fácil de:: (x) de afectar (x) por nuestra presencia (x) entonces no sé me parecería por ejemplo adecuado mirar (x) alrededor de un parque natural o de una reserva (x) pues (x) teniendo en cuenta que es difícil acceder y coleccionar en esas áreas (x) alrededor de pronto qué es lo que hay (x) esa podría ser una de mis estrategias (x) pues lo otro sería (x) e:: (x) pues (x) digamos los especímenes que en sí se hagan trampas (x) y que ellos caigan inmediatamente (x) y y mueran (x) en el acto (x) pues creo que no tendría mucho problema con eso (x) especialmente con la parte de insectos (x) pero:: (x) pero sí tendría un límite por ejemplo (x) para los mamíferos (x) no coleccionar (x) no sé más de:: (x) diez ejemplares cinco ejemplares por especie (x) o si hay una especie nueva pues (x) tratar de identificar (x) si es algo (x) pues un espécimen raro (x) dejarlo entonces para sacrificio (x) pero sí tendría un límite marcado de:: (x) de organismos (x) por ejemplo en mamíferos

J: o sea tú cuantos organismos (x) por ejemplo en la salida que tu viviste

A: aja

J: en Zapatoca Santander (x) tu dices que máximo por especie (x) entonces (x) más o menos tú (x) no sé (x) obviamente de pronto no sabes el número (x) pero:: (x) veas que se sacrificaban más muchos especímenes o:: (x) sobre todo de qué tipo de grupos de animales (x) bueno de insectos seguramente lo que más=

A: si:: no pero mira que en esa salida (x) se sacrificó muchi::simos especímenes que todos quedamos realmente aterrados de la cantidad de especímenes que se habían sacrificado (x) en el grupo de mamíferos

J: de mamíferos

A: porque:: (x) se recolectaron muchi::simos (x) murciélagos

J: si::

A: no sé (x) la cifra:: (x) que yo tengo entendida:: (x) es entre ochenta y cien especímenes

J: de murciélagos no más=

A: de murciélagos

J: ochenta a cien especímenes=

A: si:: la verdad no sé cuantas especies se identificaron (x) pero tengo entendido que eran poquitas

J: si.

A: entonces se recolectaron muchos especímenes de una misma especie pues (x) fue bastante injustificable

J: si::

A: lo otro que sé digamos de la salida (x) m:: (x) del resto de grupos no se colecto mucho (x) porque realmente no se encontró (x) de insectos fueron una::s (x) capturas relativamente normales (x) siempre tienden a caer bastantes insectos (x) no sabría decirte si fueron como muchos o hartos (x) se mantuvo en el rango el resto de grupos herpetos (x) peces y (x) y:: (x) aves fue relativamente poco

J: aves por ahí cuantas crees

A: aves (x) no sé (x) por ahí:: (x) quince veinte

J: fueron más pocas

A: sí fueron pocas

J: okey (x) a propósito digamos (x) en la (x) agencia de noticias un (x) un artículo publicado en el (x) treinta y uno de mayo del dos mil doce (x) e:: (x) comenta que:: (x) una denuncia interpuesta cito (x) de un ciudadano (x) ante la autoridad de policía (x) motivó la retención y decomiso de veinticuatro especímenes de dieciocho especies colectados científicamente por la comisión docente (x) entonces aquí quiero que me digas por un lado (x) esto (x) bueno obviamente fueron muchos más especímenes (x) lo que colectaron (x) pero los que retuvieron (x) ellos (x) cuantos serían (x) digamos la policía retuvo especímenes empezando por ahí

A: e::: pues es que (x) empezando (x) digamos en el artículo dice como que fue la policía (x) y tengo entendido que nosotros en algún artículo de noticias de prensa salió que habíamos estado en detención preventiva pero eso es falso porque (x) eso fue dos días antes de acabar la salida (x) si no estoy mal (x) y llegó un señor (x) pues que no (x) no se le vía chaleco (x) no se le veía algo que lo identificara como (x) una entidad (x) gubernamental ni nada (x) y el señor se identificó simplemente que él era de la CAR (x) no (x) llegó y habló (x) no nos mostró carnet ni absolutamente na::da

J: si

A: al grupo que estábamos (x) afuera de donde nos estábamos hospedando (x) en ese momento (x) salió un profesor de:: (x) del grupo de mamíferos (x) el profesor Hugo López a hablar con él (x) y él entonces el señor que se llamaba si no estoy mal (x) Claudio:: Beltrán (x) y llegó y dijo que nosotros=

J: de la CAR (x) él era de la CAR

A: si:: (x) él se identificó verbalmente como de la CAR (x) y entonces e::: (x) llegó y dijo que nosotros estábamos colectando ilegalmente (x) y se refirió (x) especialmente al grupo de aves (x) y entonces e:: (x) el profesor Hugo Lopez que se encontraba en ese momento sólo con nosotros (x) los otros profes estaban=

J: Hugo López es de mamíferos

A: Hugo López es de mamíferos sí (x) e::: (x) los otros profes estaban lejos (x) el (x) pues el habló con él (x) y porque él hacia pues esa denuncia (x) que porque nosotros habíamos colectado ilegalmente (x) dijo no::: lo que pasa es que ustedes no tienen los permisos (x) e::: (x) ustedes no::: (x) e:: (x) recolectaron muchos especímenes (x) y pues refiriéndose como te digo a lo de aves (x) y en esas pues llegaron los otros profes alterados (x) y::: (x) el señor éste Claudio Beltrán (x) dijo que (x) pues estaba con otra señora que la verdad no recuerdo:: (x) cómo se identificó ella (x) y ellos dijeron que necesitaban ver lo que habíamos colectado (x) las neveras (x) e::: (x) las bolsas todo lo que teníamos en los frascos=

J: pero nunca presentó:: un carnet y:=

A: no que yo sepa no=

J: los docentes le solicitaron obviamente eso=

A: yo creería que sí (x) pero pues nunca nunca lo ví

J: okey

A: y nunca llegó como de manera oficial (x) nada (x) llegó en una manera brusca (x) entonces (x) obviamente eso ofusco a las personas

J: brusca por qué (x) por qué crees que fue brusca



A: porque llegó en un tono ofensivo como::: ustedes son los que recolectaron (x) e:::: (x) me hacen el favor y me dejan ver las cajas (x) todo lo que colectaron (x) las neveras (x) entonces no llegó como en un tono de::: (x) ni siquiera a presentarse ni nada (x) o sea (x) absolutamente nada (x) fue un poco grosero (x) a mi modo de ver

J: okey (x) y los profesores accedieron a mostrarles el material

A: los profesores accedieron (x) e:::: (x) tengo entendido que::: (x) pues ahí estuvieron revisando:: (x) todo lo que habíamos colectado (x) y vieron lo que habíamos colectado de aves (x) y ellos se lo llevaron (x) que las aves estaban en unas cajas=

J: a::: o sea no fue la policía si no (x) esa gente=

A: esa gente (x) si::

J: [] Claudio Beltrán (x) y ahí y los profesores (x) digamos digamos dieron el material sin problema o::: (x) o por qué dieron el material digamos []

A: pues yo creería que lo dieron por (x) si lo dieron fue porque realmente:: (x) pues vieron que el problema (x) se estaba como agrandando (x) la situación (x) y como que en el pueblo::: (x) en Zapatoca:: (x) creo que la señora ahora que recuerdo era:: (x) algo de la alcaldía (x) no sé tenía un nexo ahí (x) entonces vieron que pues (x) si no daban el material me imagino que el problema se agradaba y pues lo dieron con:: (x) con la intención de que ellos después iban a mirar y a recuperarlo (x) y y en ese momento estaban todos los profesores (x) cuantos profesores e:::ran (x) en la salida

A: m::: (x) eran (x) eran cinco profesores

J: te acuerdas quienes eran

A: era el profesor Hugo López (x) el profesor Gary (x) Stiles (x) el profesor e::: (x) John Lynch (x) m:::

J: mamíferos aves herpetos

A: herpetos

J: por insectos me imagino que Gonzalo Andrade

A: y Gonzalo Andrade sí se me olvidaba (x) y::

J: y falta alguien de::: (x) anfibios (x) a no pero anfibios y herpetos es lo mismo (x) peces (x) alguien de peces

A: e:::: (x) si pero se me olvidó el nombre del profe (x) e:::::

J: un profe joven (x) nuevo (x) cómo es él

A: él es de gafi:::tas (x) e:::

J: mayor o::

A: no no tanto (x) relativamente joven

J: de pronto es alguien nuevo (x) en el momento por ejemplo cuando yo:: (x) vi vi (x) tuve esa salida (x) en campo capote (x) era:: (x) el legendario Germán (x) ay como se llama el apellido (x) bueno el que fue profesor de varios profesores=

A: Galvis

J: Galvis

A: a::::: (x) si::: pero no él no estaba (x) creo que él se había ido un año antes (x) pero el que te digo no recuerdo quien era

J: okey (x) cinco profesores

A: si::

J: básicamente (x) y lo monitores (x) y cinco monitores también o::

A: estaba el monitor de herpetos (x) el monitor de mariposas (x) el monitor de mamíferos (x) había otro monitor de herpetos (x) ya son cuatro (x) m::: (x) a: el monitor de peces (x) cinco (x) me falta alguno

J: insectos aves

A: a::: el de aves (x) a::: si una chica de aves (x) eran seis

J: y (x) en el momento en que llega: (x) como tal bueno (x) yo tengo entendido que (x) ustedes tienen un campamento base (x) cierto

A: si::: (x) dentro del pueblo

J: que estaba en el pueblo

A: si:::

J: entonces ustedes se estaban quedando en la parte (x) normal

A: ujum

J: central no (x) no en la periferia del pueblo (x) si

A: ujum

J: y de ahí viajaban al parque (x) si:::

A: pues es que nosotros empezando tampoco estábamos en el parque Yariguies (x) nosotros estábamos en los alrededores del parque (x) nunca fuimos al parque=

J: no estaban en el parque

A: no

J: sino en los alrededores

A: en los alrededores=

J: y eso tu sabías (x) de pronto (x) de quien era propiedad::d (x) o:: (x) o:: eso como era

A: m::: (x) no mira que (x) recuerdo mucho la reserva (x) pero es que ahoritica se me escapa el nombre (x) la floresta creo que se llamaba (x) fuimos muchísimas veces allá (x) casi to creo que todos los grupos fuimos allá a coleccionar cada uno (x) de sus (x) de sus especímenes

J: aja

A: tengo entendido que la reserva:: (x) pues perteneces al pueblo (x) y pues que el profesor Gonzalo Andrade tenía contactos que permitieron la entrada a la reserva (x) pero como tal que haya como alguien en en una::: (x) en carpita o:: (x) un guardabosques no

J: a::: pero sí entraron a la reserva

A: si entramos a la reserva (x) pero yo sé que la reserva fue por un aviso (x) o sea como que decía (x) bienvenidos a la reserva la floresta (x) pero como tal una entrada o lo que te digo:: (x) no:::

J: si::

A: era como muy:: (x)poco delimitada

J: si:: (x) okey (x) y en el momento en el que Claudio Beltrán llega (x) él llega cuando ustedes están en campo (x) llega un grupo en especial (x) o llega cuando ustedes ya están en el pueblo

A: no::: él llega cuando estamos en el pueblo lo que pasa es que ese día íbamos a salir a::: (x) con algunos profes íbamos a irnos de (x) pues de día libre (x) porque al siguiente día nos devolvíamos para Bogotá (x) entonces el señor pues (x) seguramente nos vio a la salida del colegio que estábamos ahí todos (x) vio la cantidad de gente y pues aprovecho (x) en ese momento estaba (x) un profesor ahí (x) y pues (x) cayó en ese momento

J: a:: o sea que en ese momento sólo había un profesor o habían varios

A: había un profesor no más pero=

J: quien era (x) sabes=

A: el profesor Hugo López

J: Hugo López okey=

A: si::: (x) pero en el momento en que (x) seguramente (x) pues él (x) él vio la:: situación (x) que estaba (x) un poco grave:: (x) y llamó a los otros profes

J: y ahí todos entonces (x) estuvieron

A: todos llegaron en el momento sí (x) se demoraron (x) no sé (x) llegaron (x) pero sí (x) llegaron (x) yo creo que fue por la gravedad de la situación

J: y en ese momento hubo una interacción de los estudiantes con el ambientalista

A: m::: (x) pues::: (x) si::: (x) pero::: (x) pues creo que además:: (x) porque algunos compañeros se::: (x) pues se pusieron un poco::: (x) disgustados (x) porque el señor llegó como te digo de una manera un poco grosera (x) y estaban (x) no sé (x) filmando (x) y al señor le disgustó eso (x) y empezó como una (x) una discusión verbal (x) pero pues no: (x) no directamente (x) como decir (x) usted quien e::s (x) digamos que dejamos que el profesor (x) que los profesores solucionaran el problema

J: si:: (x) y (x) ustedes (x) desde lo que vieron (x) de la interacción con los profesores (x) como vieron que fue el momento (x) tensiona::nte: (x) o alcanzaron a escuchar lo que discutían

A: pues:: (x) más o menos (x) yo alcancé a escuchar al profesor Hugo López que fue quien el primero que intervino (x) antes que los otros profesores llegaran (x) pues él manejó la situación (x) mu:y tranquilamente (x) y él le dijo no mire nosotros tenemos permiso (x) somos de la universidad naciona::l (x) no recolectamos (x) e::: (x) somos biólogos (x) sabemos cuál es el límite:: (x) y el señor era muy insistente en que nosotros habíamos coleccionado más y que: (x) por favor le entregáramos las colecciones (x) más sin embargo el profe Hugo estaba mu::y calmado (x) pues como seguro de que realmente habíamos hecho el trabajo bien

J: y ya después digamos de que hablan (x) con los profesores (x) estas personas (x) de la CAR (x) posiblemente

A: ujum

J: e::: (x) deciden darles los especímenes (x) como tú me dices (x) solamente los de aves (x) o::: o::: (x) qué material=

A: tengo entendido que solamente los de aves

J: si::

A: porque creo que pues eran (x) creo que también por eso (x) porque eran los especímenes que estaban como má::s (x) se::cos (x) por decirlo así (x) porque los otros especímenes estaban almacenados en un medio líquido (x) como en alcohol

J: y más o menos cuanto duraría la: (x) mientras que llega el (x) el (x) e::: (x) Claudio Beltrán si:: (x) hasta que pasa todo esto y se van

A: m::: (x) eso fue:: (x) supremamente rápido (x) menos de media hora yo creo

J: a:: fue muy rápido

A: si::=

J: y en ese momento (x) entregan todo el material

A: si:: (x) yo me enteré (x) yo nunca vi que ellos salieran con las aves pero fue porque los profesores nos dijeron (x) les to nos toco entregar las aves que habíamos colectado

J: y después cómo fue la interacción (x) de los profesores con ustedes (x) con respecto a lo que les contaron de la situación

A: no pues:: (x) m::: (x)e::: (x) el profesor Gonzalo Andrade que era como el que más sabía:: (x) de legislación (x) el que más sabe de legislación (x) él dijo que::: él estaba calmado si no recuerdo porque él nos decía (x) o a algunos le dijo (x) no:: eso lo vamos a recuperar (x) eso fue un embolate ahí: (x) cómo:: (x) pues con algunas personas (x) como chismes (x) que se filtraron (x) o mal entendidos (x) entonces como que de pronto él estaba confiado en que eso lo íbamos a recuperar (x) entonces=

J: y lo recuperaron

A: pues yo tengo entendido que sí (x) creo que eso se (x) eso se (x) no se sí (x) pasó por alguna autoridad (x) policía yo que sé (x) y llegó al ICN

J: a:: llegó después (x) de que ustedes habían llegado=

A: si::: mucho después (x) no sé si fue un mes (x) dos meses después

J: pero llegó

A: llegó (x) no sé la verdad en qué condiciones llegó

J: si:

A: eso si (x) no sabría decirte (x) pero tengo entendido que sí llegó

J: y nunca hubo (x) detención (x) como tal

A: no

J: aquí de pronto: (x) tu mencionabas que había una noticia periodística (x) yo tengo una (x) tal vez sea esa (x) dice comisión de biólogos de la universidad nacional fueron detenidos por sacrificar animales en un parque natural de Santander

A: ujum

J: por cerca de cuatro horas una comisión de treinta y dos profesores y estudiantes de biología de la universidad nacional (x) que había llegado procedentes de Bogotá (x) a realizar un trabajo de campo en el parque natural nacional Yariguíes (x) en Santander (x) fueron detenidos preventivamente (x) por la policía (x) por haber sacrificado animales sin tener los permisos de la CAR nacional (x) entonces en ningún momento (x) ustedes fueron (x) a una estación ni nada por el estilo

A: nada por el estilo=

J: ni siquiera (x) luego tuvieron interacción con agentes de policía

A: no::=

J: durante la salida (x) tu viste en algún momento un=

A: no para nada (x) ni siquiera con gente de la alcaldía ni nada

J: solamente con estas dos personas=

A: pues lo que (x) digamos (x) lo que a mí me llamó la atención (x) es que pues (x) Zapatoca era un pueblo relativamente pequeño (x) y pues que uno no entendía como:: (x) el profesor Gonzalo Andrade que:: (x) tengo entendido era el que:: (x) tenía los contactos allá (x) o sea cómo se había filtrado: (x) esa información pues si éramos cómo: (x) algo así como conocidos (x) y::: y::: realmente en el restaurante donde almorzábamos (x) nos conocí:an (x) o sea ya había como una empatía bien

J: y tú sabes si ya habían hecho salidas de campo allá

A: no:::

J: era la primera vez

A: era la primera vez (x) era la primera vez que se hacían

J: y después me imagino (x) bueno ese fue el tema de hablar no: (x) de ustedes

A: si::

J: estudiantes y profesores=

A: un poquito (x) si:: fue el tema de hablar

J: y como qué cosas te llamaron la atención de pronto (x) de comentarios que hayas escuchado

A: m:::~::~:

J: que recuerdes

A: pues que recuerde::

J: qué tipo de actitudes en general (x) sientes que hubo (x) respecto a éste fenómeno (x) ahorita me decías (x) que por ejemplo hubo unos que: (x) se alteraron un poco (x) algunos estudiantes (x) y de los mismos profesores (x) después qué les contaban (x) cuál era su perspectiva

A: m:::~::~: (x) pues que recuerde: (x) pues (x) como que había (x) obviamente un ambiente (x) de discusión (x) de pronto entre nosotros los estudiantes (x) pues (x) de pronto no:: (x) los profesores nunca nos dijeron (x) como (x) que yo recuerde (x) como cuál era el proceso a seguir y eso (x) no nos hablaron exactamente

J: es decir (x) tu sabes si de pronto la:: (x) la acusación digamos del ambientalista (x) era válida (x) o no era válida

A: pues a mi modo de ver no era válida porque no tenía argumentos (x) yo (x) yo lo sentí más como::: (x) un chisme que:: (x) que era que nosotros estábamos colectando::: (x) e:: (x) de más (x) y sin permiso y sin (x) y pues (x) pues una gran cantidad (x) de organismos (x) pues para mi en este sentido no era válida y como te digo pues no se identificó y:: luego de una manera (x) abrupta y: (x) y no::: (x) haberlo hecho como::: (x) pues en otro en otro ámbito (x) de pronto haberlo (x) haberlo hecho primero con algunos profesores (x) no haberlo hecho así (x) así como (x) de forma escandalosa (x) digamos que se hizo (x) por eso fue que (x) ahí inmediatamente todos desconfiamos de ese sujeto

J: si: (x) okey (x) e::: (x) bueno (x) yo te quiero leer (x) unos fragmentos de algunos de los pasajes

A: ujum=

J: que:: (x) de de (x) como lo registraron los medios (x) quiero saber tu opinión o que: (x) que opinas al respecto=

A: dale

J: tambie:n (x) en una de la:s (x) e:: (x) noticias (x) [](x) agencia de noticias (x) un (x) hay unos comentarios (x) no: (x) que me llamaron mucho la atención de (x) de: (x) supongo que de diferentes tipos de personas (x) seguramente varios estudiantes incluyendo

A: si=

J: entonces me gustaría simplemente con respecto a cada uno de estos comentarios a ver que: (x) que comentas no: (x) que opinas de ellos

A: okey (x) dale

J: bien (x) entonces cito (x) algo que (x) agencia de noticias atribuye al profesor Gonzalo Andrade (x) eso fue una mala información (x) porque no quedaron personas detenidas (x) y menos se hizo matanza alguna de aves

A: e::: (x) es verdad nunca quedamos detenidos (x) nosotros e: (x) jamas (x) como te decía no tuvimos contacto con ninguna autoridad (x) con ninguna (x) [](x) ni nos sentimos tampoco e:: (x) reprimidos en ese momento ni nada (x) e:: matanza yo no llamaría matanza (x) porque:: (x) nosotros no matamos (x) bueno no sacrificamos por sacrificar(x) matanza es cuando tu vas de cacería y::: (x) y:: simplemente (x) e::: (x) matas un organismo (x) por mero placer (x) entonces (x) creo que esa matanza es justificada en el sentido que recolectamos poquitos organismos de aves (x) y::: (x) y que se justificaba porque son para fines de investigación

J: okey pero no me comentabas (x) no me comentabas al comienzo que de pronto capturaban muchos con respecto por ejemplo a:: (x) mamíferos

A: si::: pero se capturaban (x) pero lo que te decía se liberaban si se veía que ya había muchos de ellos (x) entonces no:: (x) considero que::: (x) y por los comentarios que mis compañeros me expresaron (x) que en aves e:ra::: (x) o sea era (x) en otras comparando con otras salidas era de las que más se capturaba pero en ésta salida no se capturó tantos

J: okey (x) otra cita que (x) parece ser del periodista que escribió la (x) la ésta (x) aunque (x) es dudosa:: (x) la autoría

A: aja

J: hay que dejar en claro que la inspección de la policía se debió a la queda de un ciudadano (x) producto de una mala información (x) y que se procedió (x) a la incautación

A: pues yo creo que es probable porque (x) m::: (x) pues puede que allá no sé la gente haya pensado la gente hay pensado mal que nosotros (x) eramos de pronto::: (x) e::: (x) personas que estaban (x) en en propiedad privada (x) o::: que estábamos e::n (x) en contra de los permisos y todo (x) pues yo creo que de pronto alguna persona (x) pudo haber denunciado y que ellos se::: (x) supuestamente pues tomaron acciones en el asunto (x) pero::: (x) pero que yo sepa (x) o sea que: (x) que efectivamente haya sido la denuncia de un ciudadano: la verdad no sé: (x) es probable pero la verdad no sé

J: okey (x) este fragmento que te voy a leer (x) viene de::: (x) la agencia ya no de agencia de noticias de la un sino de caracol radio okey

A: ujum

J: dice (x) según el coronel Edgar Nieto (x) comandante de la policía de Santander (x) abre comillas citando al coronel (x) ésta clase de investigaciones cuando se realiza en parques naturales debe tener un permiso especial (x) el cual no lo tenía ésta comisión de la universidad nacional

A: pues empezando nosotros no estábamos en el parque natural Yarguies (x) nosotros estábamos en los alrededores del parque y pues de hecho no estábamos no estuvimos nunca tan cerca (x) siempre estuvimos en los alrededores del pueblo (x) y en quebradas del pueblo y en unas reservas (x) pequeñas y locales (x) alrededor del pueblito (x) entonces creo que pues (x) pues nosotros como biólogos igual eso lo sabemos (x) un permiso (x) o en esa época (x) e::: (x) si no estoy mal el profesor uno asume que también ellos tienen sus permisos todo listo (x) entonces no (x) **no creo que:::** (x) pues sea como (x) argumentativo esa cita

J: okey (x) cuando dices (x) en esa época (x) por qué comentas en esa época

A: m::: (x) **porque:::** (x) porque es que de pronto uno estaba (x) muy (x) no sé tal vez (x) yo pensaba mucho en::: (x) en que algunos profesores si::: (x) colectaban por coleccionar (x) simplemente por [allanar] una colección (x) pero cuando fuimos a la salida pues: (x) me generó confianza el ambiente=

J: como quienes digamos (x) [tu dirías como]

A: e::: (x) no sé (x) lo que te diga (x) es chisme hhhhhh=

J: hhhhhhhh

A: no quiero dar nombre=

J: hhhhhhhh

A: hhhhh

J: hhhhh

A: no quiero involucrarme

J: hhhhh

A: en ese asunto

J: hh no lo voy a llevar a la fiscalía hhhh=

A: hhhhhh (x) de pronto ahí sí me detienen

J: hhhhh [] a::: bueno (x) pero crees que hay algunos que si::: (x) tenías esa impresión de que sí::=

A: si:: yo tenía esa percepción pero::: (x) pero me di cuenta de que:: (x) de que para todo se requiere un permiso: (x) hay unos límites (x) e::: (x) y de todas formas todo está determinado por (x) por el ambiente o sea no siempre vas a encontrar mu::cho (x) eso está:: (x) es casi azaroso (x) tu encuentras mucho o encuentras harto

J: aja (x) pero con respecto a ésta salida tu creerías (x) tu creías (x) bueno no sé de pronto uno no sé [] eso (x) que tenían el permiso

A: si yo siempre lo creí que teníamos el permiso (x) y aún más sabiendo (x) que el profesor tenía contactos en el pueblo y que él hablaba con gente de la alcaldía (x) y bueno etcétera (x) pues de ahí para allá (x) sé que él tenía contactos (x) o que él (x) tenía familia inclusive allá

J: okey (x) Gonzalo Andrade

A: si:: Gonzalo Andrade

J: okey (x) bie:n (x) Bueno (x) hay otra serie de comentarios (x) con respecto a la::: (x) a la::: (x) a la noticia de agencia un

A: ujum

J: una serie de comentarios muy interesantes (x) uno de ellos es el siguiente (x) si hay salidas de campo semestrales o anuales (x) uno asume que en varios casos (x) ya deben tener varios ejemplares de la misma especie (x) para qué tantos (x) tantos entre comillas (x) antes de estas salidas los estudiantes deberían ir al

ICN (x) o donde corresponda y estudiar los especímenes que ya tienen (x) para que sólo se colecte (x) lo indispensable (x) entre comillas

A: ujum

J: que opinas de esa afirmación

A: e:::: (x) m:::: (x) estoy de acuerdo (x) porque creo que::: (x) uno va a veces a la deriva (x) a colectar (x) o fuimos a la deriva a colectar (x) [] a colectar [] personalmente [](x) porque pues (x) tu no sabes con que te vas a encontrar ni::: (x) y uno a veces pues (x) está en proceso de aprendizaje y:: y::: (x) los profesores te justifican (x) que:: (x) colectamos varios especímenes de estos (x) y en la parte de mamíferos me refiero especialmente (x) porque es para::: (x) mirar variabilidad genética o poblacional (x) pero entonces e:::: uno mismo se pregunta en la salida (x) pues que realmente no sirve (x) y eso (x) te te cuesta (x) aprender a montar un espécimen (x) aprender a prepararlo (x) hacerle las mediciones y demás pues: (x) es suficiente hacerlo con uno (x) no::: (x) no::: hacerlo con más de cincuenta ejemplares que fue lo que hicimos en la salida (x) incluso con mucho menos (x) entonces si::: (x) debería tener una (x) idea previa (x) de lo que::: (x) realmente va a colectar allá (x) pero pues a uno siempre lo justifican como::: (x) es un es una zona nueva: (x) nunca se había explorado (x) de hecho sí creo que alguno profesor (x) ahora que recuerdo (x) nos había dicho (x) no se había explorado pues (x) que íbamos a colectar (x) todo lo que se::: (x) todo lo que se encontrara

J: ujum

A: pero no me parece que:: (x) justifique: (x) o sea (x) si tu vas a una zona:: (x) tienes que recolectarlo todo no (x) que independientemente de su es también merece su::: (x) e::: (x) su tiempo (x) para dejarla:: (x) que no no la tenemos (x) pues eso básicamente es

J: bien otra de las afirmaciones (x) o::: comentarios (x) con respecto a ésta noticia es la siguiente

A: ujum

J: hay que usar la tecnología que ya existe para dejar de matar individuos en pro del conocimiento (x) esto ya no se necesita (x) se pueden colectar muestras de ADN fotografías videos GPS etcétera (x) y dejar a la fauna y flora (x) en su sitio

A: e::::: (x) en parte es cierto (x) y es válido (x) porque creo que (x) si hay métodos ahorita (x) para determinar si un organismo está o no en un determinado::: (x) e::: (x) en una determinada zona (x) pero hay ciertos organismos que es muy difícil saber (x) saberlo (x) por ejemplo los insectos es: (x) o sea ellos están superdispersos y::: (x) realmente me parece necesario hacer las colectas con las trampas (x) lo que digo es que no:: altera mucho el ambiente en donde se está (x) en: (x) digamos con mamíferos (x) me parece que si debe haber (x) una capacidad (x) y::: (x) y con peces también porque (x) e::: (x) pues las redes donde uno captura (x) estos organismos (x) pues ahí cae (x) cae todo lo que (x) lo que uno encuentra (x) si deberían haber otros mecanismos (x) y lo deberíamos aprender porque (x) a la final de pronto cuando (x) cuando vayamos al mundo laboral (x) es lo que con lo que tenemos contacto (x) y no::: (x) no sabemos manejarlo (x) de por sí esa fue una de las cosas de la salida que no::: (x) no me gustó mucho que fue como::: (x) que nunca establecimos como una relación (x) en el área (x) exacta (x) o sea fue más (x) fue mu:::y (x) e::: (x) desintegrado todo (x) o sea cada grupo (x) nunca establecimos una conexión entre todos (x) que fuera el objetivo (x) caracterizar todo []=

J: más ecológico digamos

A: si:: exacto o algo más de paisaje (x) entonces no::: (x) no se logra una caracterización de la zona (x) o bueno para ellos la caracterización de la zona es (x) partir por grupos y:: generar (x) generar un resumen total (x) pero nunca hicimos una conclusión general (x) y creo que eso sí hace falta (x) integrar con otras tecnologías (x) pero::: (x) o sea es decir (x) si necesitamos la parte (x) de nuevas (x) de nuevas tecnologías pero integrándolo con las colecciones (x) con ciertos límites

J: okey:

A: aja

J: bueno otra afirmación (x) dice lo siguiente (x) definitivamente no estoy de acuerdo en que se deban sacrificar vidas para investigar (x) investiguen como preservar la vida no como quitarla

A: m::::: (x) no::: (x) en ese sentido pues::: (x) creo que::: (x) el sacrificio el sacrificio de animales (x) siempre y cuando se haga de manera responsable y ética (x) es válido en la medida que nos va a ayudar (x) a entender el medio ambiente (x) incluso a veces nos ha ayudado a::: (x) pues a::: (x) a desarrollar nuevas investigaciones (x) para nosotros (x) los humanos (x) no solamente para la parte biológica (x) de de pronto de plantas y animales

J: como por ejemplo que:

A: pues e:: (x) digamos:: (x) m::: (x) investigación (x) no sé (x) digamos algo básico que yo sé (x) ratones  
 J: ujum  
 A: que sé que pues se usa::n en muchas (x) investigaciones para medicina (x) o::: (x) que otros animales no  
 pues yo que sepa solamente ese (x) pues sé que algunos laboratorios usarán (x) e::: (x) animalitos (x) felinos  
 (x) canes o:: (x) o simios (x) miquitos (x) algo así pero (x) pero pues de cierto modo como digo (x) tenemos  
 que hacerlo de manera responsable y:: (x) y bajo ciertas normas (x) pero pues por ejemplo lo que ocurrió  
 hace poquito con el (x) con Manuel Elquin Patarroyo (x) que estaba sacri sacrificando mucho::s (x) miquitos  
 (x) para desarrollar (x) o para aplicar (x) la vacuna contra la malaria (x) si no estoy mal (x) pues me parece::  
 (x) o sea me parece que ya (x) creo que:: (x) el hombre:: (x) cazaba de forma indiscriminada y  
 precisamente sin permisos (x) pero yo creo que más allá (x) de un permiso:: (x) es como decir si realmente  
 vale la pena (x) hacer toda esa (x) cacería (x) todo ese sacrificio de animales (x) por simplemente una vacuna  
 que no se a probado (x) que no se sabe su efectividad (x) es apenas un paso del proceso (x) me parece que se  
 vería como:: (x) como reemplazar ese paso con para que realmente se garantice su efectividad (x) y no::: (x)  
 y no perder la la vida de los animales  
 J: o:key (x) bien (x) bueno (x) gracias Ángela  
 A: okey Juan Pablo=  
 J: por tu participación en esta (x) entrevista  
 A: muchísimas gracias=  
 J: e::: (x) una pregunta=  
 A: dime  
 J: como metodológica estas de acuerdo con que este material (x) yo lo utilice con fines educativos e  
 investigativos  
 A: si:: estoy de acuerdo  
 J: no lo voy a llevar a la fiscalía hhhhhh  
 A: hhh bueno espero que no hhhhh  
 J: muchas gracias  
 A: okey vale Juan Pablo muchas gracias

## Mr. X

ICN (Bogotá, Colombia)

11/11/2014

51 minutes,10 seconds

Bueno nos encontramos hoy once de noviembre de dos mil catorce con el profesor José Mojica en el instituto  
 de ciencias naturales de la universidad nacional de Colombia y::: (x) pues muchas gracias=

X: vale

J: bueno profesor tengo entendido que usted fue a la salida de:: taxonomía animal en el año dos mil doce (x)  
 e:: para realizar una salida de campo (x) con los estudiantes (x) como es tradicional aquí en la universidad (x)

e::: me gustaría saber como::

GOLPEAN LA PUERTA

X: bueno seguimos=

J: e::: entonces me gustaría saber e:: según desde lo que usted pudo ver en ese momento (x) e: como fue: el  
 encuentro entre unas personas que se acercaron hacia ustedes e:: para hacer una denuncia no

X: si

J: pues primero quería saber bueno usted lideraba el equipo de peces cierto

X: si yo lideraba el equipo de peces

J: y bueno mas o menos cual era su objetivo con esa salida

X: toda la dinámica de esas salidas es muy sencilla (X) hay una clase que se llama taxonomía animal (x) y lo  
 que hacíamos era que como parte de esta: materia hacíamos una práctica de campo (x) en la cual vamos los  
 cinco profesores de diferentes áreas de taxonomía animal y estamos dos días con los grupos de estudiantes

que van rotando (x) los estudiantes hacen cinco grupos y esos cinco grupos van a estar rotando por los cinco profesores (x) de tal manera que en diez días de trabajo de campo todos los estudiantes han pasado durante dos días a trabajar con cada profesor (x) en los diferentes grupos (x) en el caso mio me correspondía la parte de peces=

J: y es mas o menos la dinámica siempre=

X: esa es la dinámica entonces los estudiantes cuando se dividen en grupos nuevamente son de cinco seis siete personas depende del número de estudiantes inscritos y van rotando con cada uno de los profesores de las diferentes áreas (x) las áreas son (x) e::: invertebrados (x) e::: peces (x) anfibios y reptiles (x) mamíferos y aves y en este caso como yo iba estaba encargado del grupo peces

J: okey profesor e::: usted mas o menos (x) cuanto lleva como experiencia en este tipo de trabajo de campo (x) en cole::cta ya sea con fines investigativos o docentes

X: a::: yo desde antes de graduarme estoy trabajando con esto con este tipo de (x) éste es mi trabajo ese (x) trabajo de campo con peces para poder hacer trabajo aquí en la colección en el laboratorio (x) pero yo tengo que ir a campo y siempre tengo proyectos para ir a campo

J: si ese es un poco la:::

X: digamos que yo llevo (x) muchísimos años yendo a campo y (x) desde antes de hacer mi tesis de:: pregrado y luego desde el 97 que me vinculo a la universidad nacional (x) prácticamente estoy saliendo todos los semestres (x) con ésta asignatura

J: y:: en algún momento en alguna circunstancia anterior a este evento de zapatoca que tuvo como esa particularidad de conflicto=

X: no::: no:: e::: un poquito digamos quizás en algunas salidas que hicimos a la zona de:: (x) de altaquer en Nariño

J: ujum

X: ahí hubo algunos (x) pero son más bien como roces similares con la comunidad (x) porque allá era con comunidades negras

J: si::

X: entonces el caso [ ] yo me monto en uno de los vehículos de la universidad con mis estudiantes con mi monitor (x) y vamos buscando quebradas por ejemplo (x) o sitios donde podamos colectar peces (x) a veces son quebradas que cruzan la carretera o pequeños ríos donde podemos trabajar (x) entonces uno hace eso y esa labor en la zona de Nariño exactamente altaquer estábamos buscando en un quebrada y llego gente de la comunidad diciendo que esos eran territorios ancestrales de ellos o biodiversidad y una cantidad de cosas que tienen y que no podíamos estar ahí (x)

J: y les toco moverse o algo

X: no::: pues uno para evitar cosas=

J: para evitar problemas=

X: no quiere enfrentarse con la gente (x) aunque uno sabe que la gente esta (x) abusando de que sean de ahí porque en últimas los ríos son del país (x) las aguas son del país (x) la legislación nuestra dice que las aguas son del país (x)

J: okey=

X: no es como la legislación americana que las aguas son del dueño del territorio

J: y ahí no tenía problemas digamos por el caso que eran comunidades afro con lo de la consulta previa o ese tipo de cosas

X: a::: claro ellos querían=

J: ujum

X: entonces uno simplemente dice yo mejor no trabajo acá

J: pero allí digamos (x) digamos que en ese caso=

X: pero fue un incidente de cinco minutos que pasa alguien y te dice o:::ye tu no puedes estar ahí eso es de la comunidad pero no [ ] toda la comunidad y (x) el caso de zapatoca fue diferente

J: si::: por que

X: el caso de zapatoca (x) el caso de zapatoca fue diferente porque yo sé que (x) ahí lo que se escondía detrás era u::n ambientalista de estos (x) a morir (x) donde prima más el sentimiento que la razón (x) y el considero que lo que nosotros estábamos haciendo atentaba contra la diversidad de la región (x) cuando al contrario (x) el trabajo nuestro favorece (x) po::rque:: genera conocimiento (x) la cantidad ejemplares que nosotros colectamos (x) comparado con la que hay es mínima (x) y so:n (x) el daño que nosotros hacemos e::s mínimo comparado con los beneficios que obtenemos

J: por ejemplo en ese sentido en la salida de zapatoca mas o menos en términos de:: no se=



X: en términos de ejemplares de peces=

J: si

X: te voy a comentar fue una de las zonas más pobres

J: a:: si:::

X: [ ]

J: a pesar de que es un parque natural

X: no:::=

J: estuvieron en el parque

X: no::: no no no no no eso no es parque natural

J: no: a: no estuvieron en el parque natural

X: no no no no no no::: lo que pasa con zapatoca es que es una zona que tiene una alteración muy muy grande de los ecosistemas acuáticos las pequeñas quebradas que hay (x) de hecho es una zona medio seca (x) y a:: eso súmale (x) que e::: desde la colonia zapatoca es un pueblo importante (x) y desde la colonia le están dando duro (x) si:: (x) si hay una de las cosas que más duro le da a los peces (x) son los cultivos de fique (x) donde cultivan fique y lavan fique (x) el fique es un [ ] y eso es un veneno pa los peces

J: a:::

X: en toda esa zona de zapatoca (x) ha habido (x) desde tiempos inmemorables (x) cultivos de fique (x) Santander vive del fique=

J: no sabia que [ ]=

X: y tu vas a pescar en esas quebradas (x) y no hay nada porque todo lo mataron (x)

J: o sea le fue mal=

X: y duran mu::cho en recuperase ese

J: [ ]

X: ese podría ser un buen trabajo de investigación que podría hacerse en Santander (x) como los cultivos de fique alteraron (x) la vida en las quebradas porque es que eso es un veneno (x) donde ha habido cultivos de fique y lavan fique por lo menos veinte treinta años que no hay peces

J: a que trajo más bien poquitos=

X: no::: muy poco muy poco hhhh

J: hhhh

X: además hay otra cosa nosotros no es que todo lo que vayamos e::: cogiendo lo colectamos nos lo traemos a Bogotá hay muchas cosas que son repetidas que ya no valen la pena (x) que tenemos de ellos muchos aquí: (x) en la colección simplemente en el caso mío (x) cojo lo muestro (x) le digo a los estudiantes este es este (x) se reconocer por estas y estas características

J: y se deja=

X: y se devuelve al agua

J: okey: [ ]

X: porque el objetivo de la salida cual es (X) primero que los estudiantes aprendan las técnicas de campo para colectar (x) los organismos de:: (x) de::: los diferentes grupos (x)

J: ujum

X: en el caso mío yo les enseño (x) qué técnicas de campo se usan para colectar peces una vez que los tenemos como los preservamos (x) que hacemos con ellos (x) para poderlos traer (x) pero eso no significa que nos traigamos todo (x) y: la otra parte de la salida ya una vez con el materia colectado (x) que los estudiantes aprendan a reconocer (x) principales grupos taxonómicos

J: [ ]

X: y eso no requiere que nos traigamos todo el materia para acá eso es simplemente (x) observar en el campo vengan muchachos (x) miren aquí éste pez (x) tiene escamas o no tiene escamas tiene barba o no tiene barba y así como se tienen

J: o sea que en general de todas las salidas que me imagino habrán sido muchas (x) realmente han sido pocos los eventos en donde digamos (x) hay un roce con la comunidad (x) como en el caso de zapatoca digamos (x) uster dice::: fue mu:y particular

X: m::: m::: (x) es que no fue con la comunidad

J: no fue con la comunidad=

X: es que la:: el roce no fue con la comunidad (x) nosotros teníamos el apoyo de la alcaldía (x) del cura (x) de las autoridades de la región (x) fue:: con un señor (x) que se considera ambientalista de esos acérrimos que consideran que:: que es que la naturaleza es para contemplarla

J: o::key

X: con una visión contemplativa (x) entonces nosotros (x) al vernos a nosotros ahí trabajando (x) pues dijo no::: estos los que están es matando la diversidad de ésta región

J: si:::

X: esa es mi posición [ ] (x) es más bien esa=

J: o sea que es este señor ambientalista el que se acercó a ustedes y les comenta algo::

X: no::: es que ni siquiera se acerca a nosotros (x) nosotros dictamos unas conferencias=

J: aja=

X: como parte del compromiso que nosotros teníamos (x) porque nosotros nos quedamos en el colegio=

J a::: tenían ya un compromiso a::: en un colegio se quedaron

X: era un colegio

J: como de campamento base=

X: e::: xacto y nos dejaron quedar ahí (x) y como una manera de retribuirle a la gente de la región que veía pasar carros de la universidad nacional (x) nosotros estamos: doce trece catorce días en campo (x) es bueno (x) que la gente sepa qué estamos haciendo

J: si:::

X: como una manera de retribuirle a la gente (x) se dictaron varias conferencias (x) por ejemplo una:: (x) me acuerdo una: sobre cómo presentar los exámenes de ingreso a la universidad (x) como la gente (x) de campo puede acceder a la universidad nacional

J: o sea no solamente de los que estaban haciendo ahí sino [ ]=

X: claro entonces el profesor Gonzalo Andrade se dictó una charla ahí para los muchachos de colegios y de escuelas de zapatoca (x) oiga si ustedes quieren estudiar en la universidad nacional (x) mire estas carreras ofrece la universidad (x) hay un examen de admisión que la universidad programa en tales y tales fechas (x) méntanse a la página web (x) e:: tienen estas carreras (x) ustedes tienen estas posibilidades (x) esa fue una conferencia otra conferencia que se dio por el profe (x) aves (x) la parte de aves que la dictó el profesó Gary Stiles él explico: (x) cuál era el trabajo nuestro de campo (x) como se haci:a como se colectaban las aves=

J: y cuanta gente a la [ ]

X: claro que [ ] niños de colegio muchachos de colegio (x) entre estos éste señor (x)

J: a::: él estuvo el ambientalista=

X: claro él estuvo en todas esas y al final (x) él en su consciencia dijo (x) no esta gente lo que viene aquí es a arrasar con la fauna (x) y entonces nos puso la demanda (x) nosotros estábamos hablando en la emisora porque: (x) zapatoca tenía que [ ] nos invitaron a que habláramos y contáramos que había hecho la universidad nosotros estábamos en el último día ya nos veníamos (x) y allá contamos de qué se trataba cómo era la salida (x) [había gente que nos había visto pasar] (x) y porque era importante para Zapatoca conocer qué es lo que tiene en realidad es que consideralo de ésta manara las cinco personas que vamos somos expertos esto (x) no estamos tomando el pelo es gente autoridad Gary autoridad mundial en aves (x) así de facilito (x) que trabaja con la universidad nacional (x) así de fácil (x) Lynch (x) igualmente (x) Andrade igual (x) el profe Hugo López igual (x) y yo también o sea somos gente reconocida que no estamos tonteando y sabemos exactamente lo que estamos haciendo (x) qué colectamos qué no colectamos (x) y esa información que nosotros generamos (x) puede en algún momento determinado ser muy valiosa para la región (x) de hecho las regiones se la pasan gastando una buena cantidad de plata (x) haciendo evaluaciones de la diversidad que tienen (x) y a quién se la da (x) a gente que no tiene experiencia

J: a:::m

X: ese era el aporte de la universidad nacional

J: ujum

X: por eso en Zapatoca nos dijeron (x) vengan para acá nos interesa que vengan=

J: a::: o sea de hecho fue como una invitación de Zapatoca=

X: claro nosotros estábamos buscando un sitio en donde hacer nuestras prácticas (x) fuimos allá el profe Andrade fue allá y el alcalde le dijo no listo me interesa que vengan (x) hablemos con el cura cuadremos todo para que nos recibieran y estuviéramos allá o sea (x) no es que la universidad llegó allá a imponer [eso como si no importara] no:::=

J: y fue con el personaje una pregunta profesor esta (x) esta persona es el ambientalista que usted dice=

X: si: claro

J: si claro (x) listo (x) toca confirmar ese dato=

X: claro que: (x) de que se trata esto (x) es que aca cada cual puede lo que quiera y el está en su derecho de expresar lo que quiera (x) listo (x) eso se lo respetamos (x) pero que él también (x) y estas personas también

respeten el trabajo que nosotros hacemos (x) nosotros somos investigadores (x) somos gente formada (x) casi todos los que fuimos (x) llevamos muchísimos años trabajando en esto (x) o sea no somos unos aparecidos

J: y como tal en qué consistía la denuncia

X: que él consideraba que nosotros estábamos arrasando con la fauna de la región (x) con los pajaros de la región (x) que estábamos matando pajaros

J: sólo se centraban en pájaros o hablaban de=

X: creo que se centró sólo en pajaros (X) es que yo tampoco (x) era tan absurda la cosa que yo no (x) no [ ] no le puse mucha atención

J: y y en el momento como tal como fue ustedes estaban donde en ése momento (x) usted por ejemplo donde estaba cuando pasó ese encuentro (x) entre=

X: no no es una persona desapercibida eso es cuando ya llegamos que ya nos íbamos a devolver estábamos desayunando justamente donde un personaje de la región nos invitó a desayunar (x) mire yo soy egresado de la universidad nacional (x) yo la llevo en el alma venga profesores (x) déjenme hacerles una invitación bueno pero es que ya nos vamos no: camine los invito a desayunar mañana a mi casa

J: aja=

X: salgan de la::

J: de la [ ]

X: no:: salgan de la emisora porque nosotros estábamos en la emisora y los invito a almorzar a desayunar

J: ujum

X: mientras estábamos [ ] (x) es que esto fue lo más abierto de todo (x)= el mundo

J: y ahí fue =donde llegó o::=

X: ahí fue donde nos llamaron oiga que:: profes que vengansen para acá que aquí llevo la policía con una demanda (x) que van a decomisar el material=

J: a:::: al colegio=

X: al colegio (x) ahí fue cuando llegamos y vimos a este personaje a::: si::: depredadores no se qué [ ]=

J: les deci les dijo depredadores=

X: depredado::re:s (x) y esta en todo su derecho (x) aquí todo el mundo tiene el derecho de decir lo que quiera

J: y:: el estaba con alguien más (x) estaba con policía o algo así=

X: claro es que el fue el que puso la denuncia=

J: si:

X: en la policía o en el juzgado y por ley ellos tienen que tramitar eso=

J: si si si

X: la policía pues fue allá a ver que trataba (x) si (x) no:: entonces vamos a ver que es lo que tienen (x) que este señor que está aquí dice que cogen pajaros (x) vamos a mirar entonces que es lo que tienen de pajaros (x) entonces nos hicieron abrir todos los (x) e:::

J: lo que habían colectado

X: lo que habíamos colectado esas cosas=

J: pe:ro de pájaros (x) o sea el foco fue (x) los pajaros

X: claro porque la denuncia fue de aves

J: de aves (x) a:::: (x) interesante (x) y:: el se identifica de pertenecer a alguna institución o=

X: yo no me acuerdo no me acuerdo

J: o sea que [ ]=

X: no no me acuerdo creo que [ ] no ese es un tipo ahí que llevo al pueblo y:: no se qué (x) y es (x) ambientalista (x) y no se qué más

J: y en el momento=

X: porque como en este momento cualquiera puede ser ambientalista=

X: ujum

X: tu te das cuenta que estamos ante la [ ] más grande (x) o deje así (x) si (x) cualquier obra cualquier estudio cualquier cosa se para porque alguien dice yo soy ambientalista ambientalista que quiere decir (x) es la persona que quiere defender el ambiente pero no quiere decir (x) que cuando esté defendiendo el ambiente tenga la razón

J: ujum

X: si (x) es como cuando alguien dice yo soy fundamentalista (x) yo creo en unos principios pero no [ ] (x) es eso (x) uno lo debe entender así (x) pero en este momento aquí en el país (x) esa cosa se ha desvirtuado

(x) entonces los que sabemos hacer investigación (x) ya no podemos hacer investigación porque hay un dogma una norma un fundamentalismo un ambientalismo que nos detiene= a trabajar

J: o sea que =usted a= escuchado de otros casos

X: cla::ro= es que esto viene de lado y lado (x) eso eso eso viene (x) eso= no es de ahora

J: y eso =que uno pensaría que biólogos y ambientalistas pues=

X: mira trata tu de meterte a sitios de comunidades negras de comunidades indígenas a trabajar bajo cierta []

(x) trata tú de entrar

J: [tiene la presión] de la consulta previa=

X: no::: es que no te dejan es que tu eres extranjero en el mismo territorio=

J: ujum=

X: o sea yo he viajado por muchas partes del mundo y:: (x) y yo llego a europa y me piden una visa especial shenguen para entrar (x) pero una vez que estoy allá no me dicen (x) joven usted quien es para donde como así que usted me esta dañando mi territorio (x) no::: no le van a no dar permiso [] adentro pero ve tú al choco ve tú a una comunidad indígena (x) o a una zona del país (x) tu como colombiano (x) a trabajar (x) no puedes (x) porque no porque tu no eres de la región (x) tu no eres de la comunidad (x) tu no puedes trabajar ahí (x) es como si fuera otro territorio (x) algo así equiparable como si cuando uno (x) gente de comunidades indígenas o negras (x) vinieran a Bogotá y le preguntaran a uno (x) como así usted va a estudiar en la universidad nacional (x) y por qué quién le dio permiso (x) u.: (x) cómo así (x) usted se va a quedar aquí: quien le dio permiso (x) eso es mas o menos lo que yo siento

J: aja

X: y si tu lo miras en términos de investigación (x) suena duro pero es así

J: si si

X: en términos de investigación tu no puedes trabajar afuera (x) ellos tiene derecho a que se les conserve su territorio y todas esas cosas (x) pero nosotros también somos colombianos (x) nosotros también tenemos derecho a investigar (x) a investigación (x) si (x) o la investigación a: (x) tiene que pasar por el filtro de ellos (x) esa sería mi pregunta

J: y digamos un panorama ideal digamos tomando ese tema que es (x) la colecta pues que obviamente es indispensable=

X: panorama ideal (x) que hay una norma que tiene el país (x) que dice usted quiere hacer colecta científica (x) esa es una norma (x) quien la dicta (x) la dicta el ministerio de medio ambiente

J: ujum=

X: listo yo las cumplo (x) hago mi colecta (x) no hay ningún problema (x) es así de fácil (x) es que yo no estoy robando la diversidad de nadie (x) si (x) yo no estoy yendo a preguntarles a ellos ésta planta para que la utilizan o este pez para que lo utilizan yo [no vengo] a extraer moléculas acá (x) no::: (x) nosotros simplemente queremos registrar mire en ésta región hay tales y tales especies de peces no má:s (x) me es más fácil a mi ir al mercado a comprarlo (x) si::: (x) que meterme (x) que tirar una [] porque no puedo (x) me voy a montar a una lancha y me dicen (x) usted no puede (x) punto hhhh

J: digamos que [] un panorama ideal sería que no:::=

X: no yo no digo que no haya regulación porque [] una regulación

J: si:

X: simplemente cuando hay una autoridad como el ministerio que [] puede (x) usted es un investigador usted tiene una experiencia está reconocido (x) si: (x) usted tiene hartas publicaciones usted una trayectoria científica (x) hágale (x) investigue (x) pero no que yo tenga que llegar a una zona a decir (x) no::: es que mire ya el ministerio me da permiso pero (x) será que yo puedo mirar que pecesitos hay acá (x) porque ellos me dicen no::: éste es mi conocimiento ancestral (x) cuál ancestral (x) las comunidades negras llegaron ahí cuando (x) con los españoles (x) ancestrales eran los indígenas (x) ahí si [](x) pero tampoco me vengan a decir que entonces yo no soy colombiano (x) igual colombianos son ellos que yo

J: si::

X: es un problema ahí muy grande que tiene que afrontar el país (x) porque muy rico ponerse la cachucha de colombiano para ciertas cosas (x) debe (x) me pongo la cachucha de colombiano (x) y muy rico ponerme la cachucha de indígena comunidad negra (x) pare exigir o pedir otras cosas (x) entonces nosotros diríamos también y nuestros campesinos qué: nuestros campesinos qué::: quien hace consulta previa a un campesino (x) debíamos incluirlos también en consulta previa: (x) porque también son colombianos

J: o sea cualquiera digamos=

X: pero si si tu vas a una zona de de campesinos (x) tu no tienes ningún problema (x) el campesino no porque te dice oye (x) no me vayas a dañar las cosas (x) e::ntra bueno listo no hay problema cuénteme que

están haciendo (x) pero tu no te sientes extranjero (x) y sin embargo ellos también son (x) ancestrales han estado ahí sus familias no se que (x) en últimas son colombianos tienen el derecho de estar ahí

J: o sea (x) que que digamos bueno=

X: aquí es una doble moral: (x) aquí es una doble moral (x) y detrás de eso hay toda una cantidad de gente que come de eso azuzando a unos azuzando a otros (x) y en medio del juego (x) ganando

J: el []=

X: dime tú donde están todos los an (x) donde hay muchos de los antropólogos y de todos los abogados (x) en en estos [términos] de consultas previas [] las comunidades (x) en que están (x) son unos angelitos (x) no::: (x) mira tú (x) mira tú

J: y en el caso por ejemplo del ambientalista ustedes usted cree que cuales fueron las motivaciones para=

X: a::: yo no sé::: (x) por eso te digo (x) es que (x) por eso yo te digo que eso depende de lo que la gente crea (x) o sea (x) yo no puedo discutir nada con quien me dice es que yo creo en Jehová listo usted cree en Jehova (x) si (x) a mi no me haga una transfusión de sangre porque es que eso (x) listo (x) eso es lo tuyo yo te lo respeto pero no me vengas a mí que si yo me enfermo no me hagan una transfusión de sangre

J: ujum

X: si:::

J: si si si le entiendo=

X: me explico como es es el cuento (x) yo respeto lo que la gente piensa (x) que no te hagan una transfusión de sangre porque eso va en contra de tus principios religiosos (x) listo yo te lo respeto (x) pero no me obligues a mí a no hacerme una transfusión de sangre porque (x) va contra tus principios religiosos

J: ujum

X: como el aborto (x) la misma cosa (x) cierto un [cura] no tiene porque decirme a mí (x) que yo debería vivir bajo sus preceptos religiosos (x) que yo no comparto (x) el ambientalista no me puede decir a mí (x) que hacer o que no hacer (x) en mis labores investigativas (x) bajo una concepción que yo no comparto (x) él lo mira desde un punto de vista sentimental yo lo [miro] mis cosas (x) y mi ámbito de investigación bajo un punto de vista científico (x) y me someto a unas leyes (x) a una serie de normas científicas cuando yo quiero publicar (x) me toca (x) escribir un trabajo (x) enviarlo a una revista (x) o un medio de publicación y que me lo evalúen unos pares académicos que tengan igual (x) o mejor competencia que yo (x) y ellos me mandan y me dicen (x) profesor Mojica (x) su trabajo ha sido aceptado (x) o que pena profesor Mojica su trabajo no ha sido aceptado porque esto esto esto esto (x) si quiere [] me lo vuelve a enviar o (x) simplemente para nuestra revista no nos interesa (x) y a eso me someto yo: (x) a un juicio de unos pares expertos (x) pero yo no me someto a juicio de algo que yo sé que es ideológico

J: o sea que el problema fue con el ambientalista como usted me dice=

X: no no no el problema es de concepción=

J: de concepción=

X: de concepción (x) yo hago un trabajo (x) científico (x) y de formación docente con mis estudiantes

J: ujum

X: y les estoy enseñando (x) en un área determinada (x) del conocimiento científico (x) listo (x) eso tiene unas reglas de juego (x) hay un método científico bla bla bla aquí no [hay autoridad] (x) todo lo que (x) lo maneja diseñado en términos de [rigurosidad] científica (x) esa es una (x) manera de ver las cosas (x) hay otra manera de ver las cosas (x) igualmente válida (x) en que no se exige todo esto del rigor científico (x) simplemente lo que se pretende es (x) lo que tú creas (x) y en ese caso lo que tú creas es (x) así como la religión (x) como las cosas (x) yo::: creo en esto (x) listo tu crees en eso ha:::gale (x) yo te lo respeto (x) pero no no me obligues a eso (x) porque yo estoy aquí bajo estos parámetros (x) estoy bajo unos parámetros de una universidad que imparte conocimiento científico (x) si esta fuera una universidad de otro estilo (x) quizá no estaría yo acá (x) porque esa es [] mi función

J: usted alcanzó a interactuar digamos hablar varias de estas cosas que me está mencionando con digamos él (x) en ese momento []=

X: no::: no para nada (x) de eso no hablas (x) es que tu no puedes (x) es algo así como cuando tu quieres discutir (x) de religión con una persona que es fanática (x) no puedes (x)

J: y[]=

X: o sea yo no me pongo (x) e: e: meter en éste momento aquí por ejemplo con una persona cristiana a decirle es que Dios no existe (x) yo creo [en Dios] (x) e::: yo no puedo convencerlo a él ni él me va a convencer a mí (x) ya son cosas dogmáticas (x) ya son cosas de vida (x) entonces para que interactúo con una persona que uno sabe que (x) que no:

J: y en ese momento (x) bueno (x) obviamente pues hubo un un intercambio no (x) de ideas argumentos=

X: no hubo intercambio de ideas en ningún momento=

J: no::

X: no simplemente ustedes están depredando (x) aquí le mando a la policía=

J: y que comentarios (x) que comentaban los profesores (x) digamos (x) por ejemplo sus colegas (x) los mismos estudiantes que tipo de []=

X: todos sorprendidos pues (x) imagínese

J: y ellos que decían (x) que les decían a éstas personas

X: no pues (x) jum (x) que hacían

J: y en qué se desencadenó porque (x) bueno (x) llegan (x) al colegio cierto:

X: no::: mira (x) el punto de esto si tu quieres (x) esto lo estas haciendo para un trabajo de investigación de la universidad cierto=

J: si::

X: listo entonces tu sabes de qué estamos hablando (x) el punto de esto es (x) que es una:: (x) situación en la cual se confrontan (x) dos maneras de ver la vida (x) una visión científica (x) si (x) y docente de formación (x) nosotros lo que estábamos haciendo era eso (x) una formación (x) bajo unos términos científicos para unos estudiantes de la universidad nacional (x) en términos de biodiversidad (x) y eso se confronta contra una visión (x) ambientalista (x) o sea (x) de [] que no tiene nada que ver con la parte científica simplemente (x) confrontar esas dos posiciones (x) éste ciudadano va (x) pone una denuncia (x) la policía (x) la juez (x) tiene que [decidir] en eso (x) y va y viene y decomisa todo eso (x) y nos detienen ahí (x) pero ahí hay nada (x) esa es una confrontación entre dos posiciones de ver la vida no más

J: cuando usted dice que los detienen a que se refiere o sea=

X: bueno (x) pues nos tiene ahí un rato esperando a ver bueno entonces que material está aquí que se va a decomisar que no se qué y (x) se levantan actas y se retiene el material=

J: y se [] el material

X: creo que sí

J: m::: (x) pero de aves porque ustedes []=decía que la denuncia era específicamente de aves

X: de aves (x) de aves (x) de aves

J: de resto herpetos insectos (x) porque uno a veces colecta de todo (x) =peces

X: sí:: ahí es que nadie colectó se colectó muy poco (x) no se si [] los demás profesores colectaron (x) en el caso mío (x) mu::y poquito (x) mu::y poquito (x) y lo que colecté fue porque (x) manipulando se murió entonces era mejor traérmelos que botarlos

J: si:: o sea que (x) les alcanzaron a colectar (x) y ustedes a esas colectas luego que:: (x) pasaría (x) o sea lo que:: decomisaron como tal

X: yo no sé: (x) eso después terminó en una demanda: (x) con (x) yo no me acuerdo que pasó con eso

J: una demanda de parte de la nacional a::= al ambientalista

X: no: no no (x)= creo que el proceso que él puso (x) creo que el proceso que él puso termino::: (x) e:::: (x) siendo:: (x) [] [a la CDS] (x) no a la:: (x) a la corporación ésta de la [meseta] (x) de Bucaramanga a la (x) corporación

J: la autónoma regional

X: sí:: la corporación autónoma regional en san gil (x) si allá decidieron (x) al final nos devolvieron (x) el material estas cosas=

J: a::: si:: se los devolvieron=

X: creo que al final devolvieron el material (x) es que no recuerdo (x) en qué paro eso=

J: las aves digamos en ese sentido=

X: si::: eso creo que hubo descargos de paquí palla y declaraciones

J: sí: me imagino (x) el papeleo

X: tu sabes que aquí como viene armarle a uno (x) armarle un proceso a alguien es lo más fácil del mundo

J: ujum (x) y después de eso bueno cuál fue la sensación de que llegan (x) algo que=

X: no la sensación de todo esto es que (x) en últimas uno:: (x) pues uno esta aquí como desamparado también porque [esta gente] (x) tiene más peso cierto tipo de gente que uno (x) o sea yo para poder [] tengo es que mire es que yo estoy en éste [] tengo cartón de bachiller (x) yo además (x) hice una carrera (x) además hice un doctorado y esas cosas como para que crea (x) y tengo estas y estas publicaciones tengo ésta hoja de vida (x) si: (x) y otra forma no es que yo soy ambiental yo soy fundamentalista (x) no se qué bla bla bla (x) listo entonces (x) pues bueno uno se mueve en ciertos ámbitos (x) y el ámbito de vida que yo escogí (x) fue el ámbito de la ciencia (x) esto que [tiene de malo]

J: pero profe (x) digamos (x) como usted me acaba de mencionar (x) lo que me acaba de mencionar tiene toda una justificación y esto (x) porque entonces (x) cree que las autoridades procedieron a aceptar la denuncia=

X: porque ellos [atacan] es que (x) yo no soy abogado pero yo creo que si yo soy una autoridad y me dijeran oiga es que yo vengo a denunciar esto pues bueno (x) que va a denunciar (x) cierto hhhhh=

J: porque digamos les retuvieron los especímenes

X: aja

J: basados (x) en qué les retuvieron digamos=

X: a:: no ni idea ni idea (x) ni idea porque eso si ya es del ámbito legal (x) eso es del ámbito legal

J: porque sí les alcanzaron digamos a afectar (x) su:: (x) su investigación como tal (x) pues los especímenes que estaban (x) recolectando

X: ujum

J: profesor a continuación (x) he sacado unos fragmentos (x) de unos medios periodísticos (x) que:: (x) e:: (x) reportaron esta noticia (x) si:

X: si

J: la salida usted se acuerda fechas de pronto

X: eso fue a mitad de año de 2012

J: 2012 okey

X: mayo

J: en el treintayuno de mayo (x) salen tres noticias en tres medios diferentes (x) agencia de noticias un (x) e:: caracol radio y (x) rcn la radio (x) bien (x) entonces le voy a comentar (x) me gustaría saber=

X: a:: es que es que además me acuerdo este tipo (x) además de ambientalista él era periodista creo que él era periodista (x) y el creo que fue que llamó a la luciérnaga (x) o algo así (x) llamo a los medios de comunicación a decir mire no se que (x) eso fue un escandalo

J: okey tenía digamos una mediación ahí=

X: claro

J: okey (x) entonces le voy a leer los fragmentos (x) y me gustaría saber su opinión sobre los fragmentos (x) esos fragmentos son digamos (x) opiniones son extractos (x) como tal que saqué de ésta noticia (x) listo

X: si

J: el primer extracto viene de la agencia de noticas un que es (x) bueno según el periodista (x) un comentario del profesor Andrade (x) entonces me gustaría que digamos (x) e::: comentara algo al respecto (x) eso fue (x) esto lo dice Gonzalo Andrade (x) eso fue una mala información (x) porque no quedaron personas detenidas (x) y menos se hizo matanza alguna de aves

X: ya (x) pues es lo que yo te estoy diciendo

J: no hubo como tal una detención de gente=

X: no:: es que [los agentes] nunca nos detuvieron (x) simplemente lo que hicieron fue mirar (x) simplemente porque un tipo hizo una denuncia de una matanza de aves (x) yo puedo decir lo que se mató (x) cuando voy a poner una denuncia

J: pero no mataron aves

X: no:: es que se co (x) es que depende que llames tu matar aves (x) se colectaron (x) algunas aves que eran importantes (x) quien te puede decir porque eran importantes ese es Gary Styles (x) es que Gary Styles no es cualquier pintado en la pared (x) es el mayor experto mundial de aves de suramerica está acá (x) [en la oficina de al lado] el tiene el criterio suficiente el bagaje suficiente para decir (x) colecto o no colecto éste espécimen (x) así de fácil m::

J: okey pero digamos la colecta implica: matar (x) matar el ave=

X: cl::aro (x) claro tu no puedes colectar []

J: jum

X: porque (x) porque es que nosotros tenemos unas colecciones científicas(x) aquí lo importante es el punto (x) y vuelvo a lo que te digo (x) una cosa (x) nosotros nos movemos en el ámbito científico (x) con la universidad (x) que somos (x) y otra cosa es el ámbito ambientalista (x) eso es de creencia (x) de acuerdo [a tus] (x) cada cual es libre de creer o no

J: listo profe (x) le voy a comentar otro (x) éste (x) ya: (x) viene=

X: los calificativos se les puede poner el que quiera (x) mata::nza (x) e:: geno no genocidio no [] pajarici: dio no se cualquier cosa se le inventa (x) si:

J: okey (x) bien (x) e::: (x) hay otro comentario (x) que es de la misma agencia de noticias (x) hay que dejar en claro que la inspección de la policía (x) que la inspección de la policía se debió a la queja de un ciudadano (x) como me acaba de comentar (x) producto de una mala información y que se procedió a la incautación

X: m::: pues yo no sé (x) yo no sé si fue mala información o no (x) yo lo que más bien veo es que (x) producto de una ideología []=

J: porque si no estoy mal la denuncia creo que se basaba en: en permisos de colecta (x) en que no tenían permisos de colecta

X: [ni idea] no:: yo lo que entiendo es que a él le molestó mucho que nosotros fuéramos allá a [mirar] las aves (x) a él le molestó mucho eso porque es que eso es intocable

J: okey

X: según su manera de ver (x) creo yo::

J: hay otro fragmento pero este viene de caracol radio (x) esta la misma fecha se publica ésta noticia que en la de agencia de noticias según el coronel Edgar Nieto (x) comandante de la policía de Santander (x) es (x) abro comillas (x) citando al coronel (x) esta clase de investigaciones cuando se realizan en parques naturales deben tener un permiso especial (x) el cual no lo tenía esta comisión de la universidad nacional

X: no ni idea

J: se [] los permisos por ejemplo (x) [] ahí como se manejan la los permisos de colecta

X: no: no sé

J: [no sé] la universidad debe tener un permiso de colecta o hablando con la comunidad=

X: si:: en éste momento la universidad tiene un permiso marco de colecta (x) todos estamos amparados por ese permiso marco de colecta

J: en ese sentido pues Gonzalo Andrade tuvo una (x) inferencia creo

X: si::: claro (x) pues es que a raíz de todo eso (x) [Gonzalo] oiga (x) es que nos están atropellando (x) como así (x) como así que nosotros no podemos investigar (x) [como así que no podemos investigar]

J: que logró =promover un cambio en [] en la legislación

X: claro [] claro= exactamente ése es el lío (x) que uno como investigador en temas de diversidad te sientas [atropellado] en este momento (x) o:: nos sentíamos atropellados (x) en este momento yo me siento (x) al menos en acceso a ciertas zonas del país (x) siento que están vedadas para nosotros

J: pero por las mismas comunidades no po::r (x) conflicto armado (x) o porque está muy lejos

X: no:: generalmente es (x) ni por las mismas comunidades sabes (x) por ciertos tipos de diligentes de las comunidades que se lucran de impuestos=

J: digamos como el (x) el que usted cuenta=

X: léete lo de:: (x) vos que te lees (x) las cosas que han salido de (x) de (x) del problema de [] que ha salido en los medios (x) como es muy complicado investigar (x) en ciertas regiones del país

J: o sea ustedes hacen claro (x) usted me había dicho:=

X: claro (x) es que uno se siente extranjero en el mismo país (x) o sea yo (x) si:: (x) me siento extranjero en mi mismo país (x) así de fácil (x) yo no puedo ni tocar ni mirar ni nada de esas cosas

J: pro:fe (x) le quiero comentar los titulares de estas dos noticias (x) que vienen de dos medios periodísticos (x) digamos (x) instituciones diferentes (x) el primero (x) bueno (x) es el de la agencia de noticias un dice lo siguiente (x) biólogos de la un retenidos por investigar (x) así se llamaba (x) y el segundo (x) el de caracol radio (x) comisión de biólogos de la universidad nacional fueron retenidos por sacrificar animales en parque natural de Santander

X: a ver (x) vuelve y juega (x) es que depende como lo mires tú (x) yo no puedo (x) eso dep lo que digan: (x) no importa (x) porque uno no tiene control sobre eso (x) uno sobre lo que sí tiene control (x) es sobre lo que nosotros como profesionales hacemos (x) como profesores de la universidad nacional

J: jum

X: sobre eso sí tenemos control (x) sobre lo que diga la gente no: (x) la gente le puede poner los epítetos los calificativos que quieran (x) matanza (x) pajarici::dio e::: (x) lo que quieran (x) nosotros que fue lo que estábamos haciendo (x) unas prácticas docentes que implicaron la colecta científica de algunos ejemplares (x) eso fue todo (x) si alguien considera que eso es una amenaza para la naturaleza (x) está en todo su derecho de creerlo (x) si: (x) si alguien considera lo mismo (x) que no se le pueda hacer una transfusión de sangre porque eso va contra Dios (x) está en todo su derecho (x) listo (x) pero nosotros también estamos jugando en un ámbito (x) en un ámbito científico y legal (x) ahí está

J: algo interesante profe (x) de la notica (x) de agencia de noticias (x) e::: de noticias un (x) es que hubo una serie de comentarios (x) hartísimos (x) de varias personas (x) algunos dijeron que habían estado en la salida

X: si:



J: que es raro ver (x) tantos comentarios en una noticia de agencia de noticias un (x) e::: (x) le voy a leer algunos(x) también para que (x) me gustaría saber su opinión al respecto (x) pues de diferentes personas que comentaron allí (x) el primero (x) definitivamente no estoy de acuerdo que se deban sacrificar vidas para investigar (x) investiguen= como preservar la vida no como quitarla

X: cla:ro cla:ro = claro (x) igualmente (x) es lo mismo que está pasando con los toros (x) tu vas a encontrar gente (x) a mi me gustan los toros (x) y voy pago (x) lo que sea (x) y voy y miro una corrida de toros (x) y hay otros que van a decir (x) no es que están matando los animalitos (x) son maneras diferentes de ver la vida (x) lo importante es que uno no le imponga al otro (x) listo (x) tu haces lo tuyo y yo hago lo mío (x) es el mismo []

J: listo otro comentario (x) de otra persona (x) si hay salidas de campo semestrales o anuales (x) uno asume que en varios casos ya deben tener varios ejemplares de la misma especie (x) para qué (x) tantos (x) antes de estas salidas los estudiantes deberían ir al ICN (x) o donde corresponda (x) y estudiar los especímenes que ya tienen (x) para que sólo se colecten (x) lo indispensable

X: claro (x) vuelve y juega lo que te digo (x) es que uno va a campo (x) a enseñarles a los estudiantes las técnicas de campo (x) cómo se colecta un ejemplar (x) es que uno no colecta ejemplares porque se le antoja y porque le gusta matar (x) o porque es que eso (x) me llena en lo más profundo de mi ser ver una cantidad de animales muertos no (x) uno colecta porque (x) o bien sea no tiene esos ejemplares en la colección

J: ujum

X: o es un registro importante (x) o hay alguna razón científica por la cuál vale la pena coleccionar ese ejemplar=

J: o::: docente

X: o docente (x) si (x) en la práctica docente (x) esa cosa es como si le dicen a usted (x) vale usted está usted está usted está en una academia para conducción (x) pero que sus estudiantes miren los carros por fuera y no puedan tocar los carros (x) bueno esa es una manera de ver (x) si (x) jum::

J: listo (x) y el último =comentario

X: enséñenle a coleccionar pero no coleccionen (x) si: (x) a bueno está bien (x) dígame usted (x) entonces (x) fíjese cómo las cosas se van revirtiendo y a lo último (x) termina (x) terminamos nosotros (x) defendiéndonos (x) de algo que (x) que no tiene porque defenderse

J: listo el último comentario (x) de otra persona (x) hay que usar la tecnología que ya existe para dejar de matar individuos= en el pro del conocimiento (x) esto ya no se necesita (x) se pueden recolectar muestras de ADN fotografías videos GPS etcétera (x) y dejar a la fauna y flora en su sitio

X: hhhhhhhhhhhh = exactamente (x) esa es otra manera de ver las cosas (x) si: (x) otra manera de ver las cosas (x) pero yo no puedo tomar una muestra de ADN de un pez (x) sin sacarlo del agua sin coleccionarlo

J: ujum

X: yo no puedo hacer eso (x) cual gp cual gps el gps qué me dice (x) sí usted está aquí (x) y las coordenadas son éstas (x) pero si yo estoy al lado de una quebrada si yo no colecciono no sé entonces que hay en la quebrada (x) o sea es que (x) son maneras de ver la vida de otra gente que desconocer (x) las cosas

J: o sea (x) muchas trabas pa la investigación profe (x) usted cree

X: e::: yo creo que cada día peores (x) yo creo que cada día más (x) más y más y más (x) y: lo peo:r (x) ven y te digo (x) lo peor (x) es que a ti dicen (x) nosotros trabajamos la biodiversidad (x) qué hay donde está y cómo está

J: ujum

X: cierto (x) porque esa es una información que la necesita alguien (x) o la necesita uno para su quehacer científico: (x) o la necesita alguien (x) una institución una universidad para saber qué hay en un páramo que hay en no sé qué (x) cierto (x) sin embargo cuando tú quieres investigar esa biodiversidad resulta que te arman toda una cantidad de trabas (x) como éstas (x) es que (x) deberían dejar (x) deberían no se qué (x) pues sí (x) aquí en el país deberíamos dejar de matarnos (x) aquí deberíamos empezar a respetar al otro (x) una cantidad de cosas que deberíamos (x) deberían dejar de robar por ejemplo

J: y por ejemplo=

X: deberían dejar investiga:r (x) hhhhhh

J: por ejemplo con el cambio de legislación (x) que hubo (x) que tengo = entendido

X: pero mira éste es el país de las leyes (x) aquí te puede joder por cualquier cosa = hhh

J: ujum=

X: por cualquier lado (x) es que la legislación (x) [](x) depende pa quien se la apliquen

J: porque usted dijo que digamos=

X: con la misma legislación los Nule salen y con la misma legislación joden a Petro eso (x) con la misma legislación sirve pa todo

J: si eso (x) tiene varios fines no (x) dependen como la utilicen (x) e:::: porque (x) tengo entendido que hubo un cambio en los decretos de los permisos de []=

X: si:: ahora ya la legislación (x) al menos empiezan a confiar en el criterio (x) de las universidades (x) si las universidades dicen (x) sí: mire (x) yo tengo un grupo de investigació:n (x) son unos profesores acá (x) yo:: los avalo para que hagan investigación científica en diversida:d (x) y entonces la universidad es la que (x) las universidades son las que tramitan (x) directamente ante el ministerio (x) esos permisos marco generales

J: ujum

X: qué dice dice eso

J: eso fue una mejoría digamos=

X: cla::ro es que la gente tiene contrasentido que es que nosotros (x) los que investigamos la diversidad es que nos la queremos llevar por delante (x) la queremos acabar (x) al contrario (x) si tu no sabes lo que tienes no sabes cómo conservarlo (x) nosotros somos los que generamos la información de cuál es la biodiversidad del país

J: si

X: es así de fácil (x) o sea nosotros somos los más interesados que esto se conserve (x) porque es lo que estudiamos (x) a mi no me interesa que el país se quede sin peces (x) al contrario (x) esto es lo que me gusta a mí estoy trabajando en esto es porque yo quiero conservarlo (x) y mi doctorado es en biología de la conservación

J: de qué universidad profe [] estudió

X: yo estudié en la complutense de Madrid (x) y mi doctorado es ese (x) es en conservación

J: y en peces=

X: claro en peces (x) es en esto (x) si:

J: interesantes

X: entonces yo te digo pues simplemente eso (x) a qué jugamos=

J: y antes de la nacional (x) estaba en otra universidad colombiana o=

X: no siempre he estado acá=

J: siempre ha estado en la nacional (x) okey

X: y entonces (x) a qué jugamos es lo que yo digo

J: ujum

X: o sea es que (x) como en ese país (x) todo se invierte (x) ahora resulta que los malos somos los que investigamos en diversidad (x) los buenos son los que se paran (x) hay::: que conservar la biodiversidad (x) y los que la estudiamos y los que la trabajamos (x) resultamos siendo los malos (x) así de []

J: bueno profe no lo molesto más

X: hhhhh va:le (x) de pronto (x) de pronto si:: (x) vale la pena que mires otras cositas como lo que han hecho en el Perú (x) el Ecuador perdón (x) si::: en el Perú y en Ecuador (x) pero sobre todo en Ecuador para la parte de investigación (x) cómo están manejando ellos (x) posibilidades de investigación (x) respecto a (x) consultas previas comunidades la facilidad (x) es una visión totalmente diferente

J: allá qué cuál es el contraste (x) con respecto acá

X: allá te valoran más como (x) como investigador (x) allá sí desean que la gente vaya (x) allá tienen ese programa Prometeo por ejemplo (x) si (x) para llevarse profesionales (x) altamente calificados (x) para que trabajen en diferentes aspectos de la diversidad de Ecuador (x) mira lo que están haciendo los ecuatorianos (x) mira a donde van (x) es otra manera de ver (x) la vida (x) y son (x) países con una fuerte influencia indígena

J: ujum [] profesor=

X: es que la

J: ese es un tema=

X: es que esto tiene (x) aquí hay un trasfondo (x) y yo [](x) una posición científica (x) docente científica (x) que es aquí en la universidad nacional y [](x) hay otra que es (x) políticas de estado (x) y hay otra que son (x) sentimientos individuales (x) políticas de estado sentimientos individuales cada cual puede pensarlo (x) jum (x) y aquí lo que yo veo es que se está contrastando (x) un trabajo docente(x) un trabajo investigativo (x) de la universidad nacional (x) jum (x) avalado por la misma universidad (x) simplemente contra la opinión (x) del ambientalista (x) con lo que diga un ambientalista (x) puede pensar lo que quie:ra (x) y listo está en todo su derecho (x) pero no puede pararnos el derecho a nosotros (x) es su manera de pensar (x) a mi no (x) a mi

me gustaría que si me enfermo me dieran una transfusión de sangre si la necesito (x) pero no puede decir [] a quien enchufarle sangre (x) no::: (x) así como yo lo respeto usted me respeta a mí también

J: okey (x) bueno profe muchas gracias=

X: vale listo=

J: está de acuerdo en que utilice éste material con fines investigativos y educativos

X: e::: en qué sentido=

J: es un formalismo (x) no::: digamos éste material yo lo voy a utilizar para hacer transcripciones para hacer la tesis en parte (x) bueno una parte de la tesis (x) que no [] solamente sobre éste caso

X: ujum

J: si no es una parte (x) como tal global de mi tesis (x) entonces no::: es simplemente un formalismo metodológico que nosotros siempre decimos (x) le pedimos permiso (x) a la persona (x) de utilizar el material

X: sí úselo

J: listo profesor (x) entonces no lo molesto mucho más

X: vale

J: muchas gracias profesor (x) cualquier cosa igual (x) de pronto lo molesto más

X: vale

J: mu:e interesante

X: vale suerte

J: mu::y amable (x) muchas gracias

## E. Annexes: Mail from an environmentalist

From Claudio Beltrán

Estimado Juan Pablo, soy ambientalista, arquiterro (arq. especializado en construcciones en tierra) y maestro en artes plásticas. En ese año aparecieron un día unas camionetas blancas portadoras de maestros y estudiantes de biología de su universidad. Hicieron convenios, empezaron a dictar conferencias, la "Ciudad Levítica" estaba en ascuas con semejante visita. Uno de los "sabios", Mr. Gary S.", taxidemista, dicta una charla en la cual manifiesta que ya ha "colectado " varias clases de pajarillos algunos de ellos en peligro de extinción...no sé si exhibió sus cuerpos...¿Colecta o matanza? me pregunté, así que acompañado de la inspectora de policia se procede a solicitarles el respectivo permiso, el cual no portaban. Detenidos señores, por violar la ley, académicos que deberían dar ejemplo, ecodidas que no entienden que 20 pajarillos son importantes en su medio y no convertidos en cadáveres momificados: esa ya no es ciencia sino "cientifismo". Esto fué lo que se trató de expresar. Mientras, el Mohan pensaba en las pequeñas crías esperando hambrientas en el nido a sus padres en la noche fría de Yarigués, padres que nunca volvieron.

¡A celebrar! He peleado a la vida y a la muerte y ahora las dos me pertenecen! A celebrar porque he regresado en el vuelo del cóndor, en los pasos oscuros del jaguar y en el sonido silencioso de la anaconda! ¡A celebrar! (El mohan).

Espero que le sirva, escribí también un artículo para un periódico de Bmanga que le puedo hacer llegar.

El Sábado, 8 de noviembre, 2014

## F. Annexes: Transcription of Radio programme

### General information

*UN Análisis* Wednesday 24 July 2013 (Universidad Nacional de Colombia)

Host: Guillermo Parada

### Temporal and structure of Radio Programme

0-15.4	Cabezote de UN analysis (narrador)
15.5-35.2	MÚSICA al final se diluye, en disminución
35.3-58.2	Bienvenida y presentación del programa, aprovecha para hacer propaganda de otro programa radial (Historia del conflicto)
58.3-1:00	SILENCIO
1:01-1:03	MÚSICA
1:04-1:08	Título del programa (narrador)
1:09-1:11.7	MÚSICA
1:11.8-1:16.1	Introducción del personaje en cuestión (narrador)
1:16.2-1:18	MÚSICA
1:18.1-2:48.9	El presumible Dario Fajardo comenta sobre La Violencia, Laureano Gómez, Gaitan, Liberales y conservadores. Parece ser un fragmento pregrabado de una de las sesiones de este programa. (al final comienz música)
2:49-2:51	MÚSICA
2:51.1-2:53.8	N: UN radio web en línea con la academia
2:53.9-2:55.7	MÚSICA
2:55.8-3:09.8	G habla sobre seguir escuchando al otro program
3:09.9-...	

### Interview-in-interaction

G: Guillermo (Host), A: Gonzalo Andrade (profesor), C: Caicedo

**P:** profesores muy buenos días

**C:** Muy buenos días Guillermo

**G:** Buenos días Guillermo

**P:** El tema sobre el cual vamos a hablar hoy es sobre el tema de los decretos para permisos en colecciones biológicas, son dos decretos que acaban de salir desde el ministerio de ambiente. Claudita ¿a quienes invitamos?

**Claudita:** Hoy nos acompañaran Diana Álvarez de la Universidad Javeriana, Felipe Alfonso Cardona de la Universidad de Antioquia, y los profesores de la Universidad Nacional de Colombia, Gonzalo Andrade, Alexander Gómez y Carlos Caicedo.

**P:** En el ministerio de ambiente acaba de expedir dos decretos, el 1375 y el 1376, por el cual se reglamentan las colecciones biológicas y el permiso de colección de especímenes, de especies de la diversidad biológica con fines de investigación científica no comercial, y esto es romper una brecha y un tapón que existía para la investigación científica en Colombia. Profesor Gonzalo Andrade bienvenido a sus emisoras, profesor del Instituto de Ciencias Naturales de la Universidad Nacional. Bienvenido profesor.

**G:** muchas gracias

**P:** profesor Carlos Caicedo

**C:** Buenos días Guillermo. Frente a éste tema el profesor Andrade y este espacio y otros de la universidad habían venido de manera reiterada hablando de la dificultad que existía para obtener permisos y en el caso que conocí de manera cercana de la Orinoquia, varios proyectos que se asignaron no se pudieron realizar porque en el espacio que se había establecido para la realización de los mismos, no se había logrado la obtención de esos permisos. Profesor Andrade cómo ve usted esta iniciativa.

**P [interrumpe a G]:** creo que sería muy bueno que empezáramos profesor, contando el problema, y lo que tenían (énfasis en la i) que vivir los investigadores colombianos. Empecemos por lo malo porque es que, como se decía ayer en el congreso de la república, tenemos todo el derecho de quejarnos, tenemos todo el derecho de protestar, pero también tenemos que construir, y creo que éste es un ejemplo de construcción.

**G:** Completamente de acuerdo, Guillermo lo que, lo que vivíamos en Colombia y que arrancó con el decreto 309 del año 2000, pero no tanto lo que estaba escrito en el decreto sino las resoluciones que reglamentaban éste decreto, que la realidad de los últimos años es que en Colombia para poder realizar, este decreto decía que para poder trabajar en la biodiversidad en Colombia se tenía que obtener un permiso de investigación, era lo que el mandato de éste decreto, y que todas las colecciones biológicas de Colombia debían estar registradas ante el instituto Humboldt y el registro duraba dos años, tenía que renovarlo cada dos años, no se podía intercambiar material con colecciones del exterior, son cosas a las que estábamos tradicionalmente acostumbrados el país, y los resultados es que, por ejemplo un análisis que se hizo desde los distintos programas de ciencia y tecnología en Colciencias, se encontró que habían 565 proyectos de investigación de todos los grupos de Colombia que están categorizado por Colciencias, que necesitaban tener un permiso de investigación y un contrato de acceso a recursos genéticos, pero que no lo tenían, los datos que arrojaba el ministerio de ambiente...

**P [interrumpe]:** se estaba trabajando ilegalmente

**G: si, digámoslo entre comillas ese ilegal, es decir la gente no estaba cumpliendo la normatividad porque era muy (énfasis) complicado cumplirla.** Entonces, los datos del propio ministerio de ambiente del que, en 15 años que tenía de aplicabilidad éste decreto 309, se habían otorgado 45 contratos de accesos a recursos genéticos en el país, es decir, 45 permisos de investigación a la luz del decreto 309...

**P [interrumpe]:** y 500 volando

**G:** y 564 que era lo que reportaba Colciencias que debían tener, esa era la realidad del país. Se logró documentar absolutamente todo esto, una de las grandes trabas es que un investigador para solicitar un permiso, para desarrollar su proyecto en Colombia, se demoraba 3,5 años en obtener, si lo lograba (énfasis), por tener muchos... [no se escucha bien]

**P [interrumpe]:** un investigador graduado en Colombia, que se iba a dedicar en algo beneficioso para el país  
**[G: Correcto]** tenía que recorrer todo ese camino burocrático.

**G:** si, y el tramite lo tenía que hacer era el investigador ante las autoridades ambientales.

**P:** como si esa fuera la función de los investigadores [G: exactamente]

**C:** pero no solamente era esto, era cualquier trabajo de postgrado que tuviera que ver con la biodiversidad, entonces más o menos los temas de medio ambiente, de biología, de mar, etc, etc, estaban subordinados a éste proceso, que en un trabajo de tesis que esta normatizado en un año, pues ahí se demoraba, que registraran la tesis, se la aprobaran, e iniciar el proceso o al revés, eran otros tres años adicionales a este trabajo de campo, o sea, realmente era una normatividad muy difícil de cumplir, muy importante tener un registro, muy importante cumplir con unas normas, y unos comportamientos para generar los mínimos

efectos pero, realmente, se había vuelto uno de esos trámites santaderistas de los que periódicamente salen a la luz pública...

**G [interrumpe]:** a eso hay que adicionarle dos datos importantes también Guillermo y es que en el 2011 sacaron una resolución de la agencia nacional de licencias ambientales para complicar un poco más la problemática, es que, a partir del 2011, arrancaron a cobrar (énfasis) plata, por solicitar un permiso de investigación, pero además por hacerle seguimiento al permiso de investigación, entonces como decía el profesor Caicedo, un estudiante de pregrado que esta desarrollando, estaba desarrollando su tesis de pregrado o de maestría o de doctorado o un investigador, así el proyecto costara un peso y durara un mes, tenía que sacar un permiso de investigación, tenía que pagar un poco de plata para hacer la solicitud, yo vi (énfasis) casos de estudiantes de la universidad de Antioquia que por ejemplo, les cobraran 600, 700 mil pesos, por evaluarle la solicitud que estaba haciendo y además decía la resolución que habían pagos que había que hacer de honorarios, de gastos de viajes, de viáticos, según una tabla del ministerio de transporte por la categoría más alta para (P interrumpo) hacerle seguimiento a las actividades...

**P [interrumpe]:** ¿y por qué de transporte? ¿y por qué era de transporte?

**G:** Porque necesitaban ir al sitio de trabajo para constatar que lo que uno estaba diciendo en el proyecto de investigación era verdad. Y a esto había que adicionarle, en qué sitios, las coordenadas geográficas en donde yo iba a coger la mariposa, por ejemplo, uno tenía que adivinar el futuro, y además cuantos ejemplares iba yo a coleccionar de esa mariposa, y cuando escribía mi proyecto lo tenía que decir, sino no podía obtener el permiso de investigación.

**P:** Contrariando cualquier norma metodológica...

**G [interrumpe]:** contrariando la constitución nacional, porque la constitución dice que hay libertad, el artículo 27 de la constitución dice: que hay libertad para hacer investigación con fines científicos en Colombia y si a esto usted utilizaba herramientas moleculares, con, o sea, hacia sistemática molecular, por ejemplo para saber cómo se llamaba la, ésta mariposa, si era el nombre A o el nombre B, y eso lo tenía que hacer analizando el ADN, es decir, sistemática molecular, con fines científicos no comerciales, tenía que sacar un contrato de acceso a recursos genéticos, y se podía demorar más de los 3,5 años para este proceso, es decir, que era una problemática en Colombia muy compleja.

**X:** Guillermo, referente al ministerio de transporte es que es la institución pública que más tiempo lleva, sacando tarifas y que tiene un sistema, el más elaborado para establecer la remuneración de los costos indirectos y en muchos casos las entidades públicas y privadas toman como referente los precios unitarios y el valor de consultor junior etc, etc, porque hay un seguimiento de cuarenta o cincuenta años, entonces a veces se establece como un referente para tasar honorarios de consultor.

**P:** profesor esa era una queja permanente, aquí llevamos 10 años hablando sobre ese tema, quejándonos, llorando (énfasis)...

**G [interrumpe]:** algo que en éste micrófono lo hablamos muchas veces

**P:** llorando

**X:** bueno, cambian las cosas profesor Andrade

**P:** No eso es lo bueno, eso es lo bueno de poder construir (énfasis), eso es lo bueno de poder construir, y ver cómo, así como se han planteado las quejas, se puede organizar algo, como debe ser, ¿qué, qué fue lo que se hizo? Porque tengo entendido que además desde la administración anterior de la Universidad Nacional, el profesor Wasserman, el doctor Molina, estuvieron participando [X: el profesor Andrade como delegado de la...; G: si, hicimos, hicimos...] y usted es el protagonista, lo que pasa es que yo sé lo modesto que es usted...

**G:** hicimos, hicimos muchas cosas Guillermo, con el profesor Wasserman y el profesor Rafael Molina como vicerrector, hicimos reuniones con el ministro Carlos Costa de ambiente, con el ministro Juan Lozano...

**P [interrumpe]:** Carlos Costa que sabía mucho...

**G [interrumpe]:** sabía y que era un técnico, o sea informado

**P [interrumpe]:** pero paso de largo. yo sé que es amigo suyo.

**G [interrumpe]:** y con doctorado

**P [interrumpe]:** yo sé que es amigo suyo.

**G [interrumpe]:** y... no pera las verdades hay que decirlas. Y entonces se les, se les planteó el problema, pero, y se hicieron muchas reuniones, muchos foros, muchas cartas, escritas por por, desde la dirección de la universidad, pero pero pero no se tenían respuestas, desde la academia de ciencias, desde el el el, la organización de las facultades de ciencias, también se hicieron muchas cartas a presidencia, se se se tramitó una carta firmada por más de 1200 investigadores en Colombia al presidente de la república, esas cartas fueron enviadas desde la secretaría general de la presidencia a colciencias, al ministro de ambiente, a la ANLA para que dieran respuestas, digamos que finalmente, en septiembre del año pasado, se organiza un foro, otro foro más, en la universidad de los andes sobre esta problemática, y ahí hay el cambio del ministro Frank Pearl al ministro Juan Gabriel Uribe y entonces el ministro Juan Gabriel Uribe, muy sensible con éste tema, cita una reunión en el mes de septiembre, a finales de septiembre [P: convoca], convoca, a una reunión en su despacho a cuatro rectores de las, de universidades colombianas, estaba el rector de la universidad de los andes, el rector de la universidad javeriana, el rector de la universidad de Antioquia y el rector de la universidad nacional de Colombia, y asistió también el profesor Alexander Gómez, como vicerrector de investigación de nuestra universidad, y asistimos cuatro profesores de las cuatro universidades acompañando a nuestros rectores, yo estuve como con la universidad nacional, y en esta, en esta reunión en el despacho del ministro donde se le planteo todo este resumen que acabamos de hacer tan bien en algo muy rápido de cinco minutos, el ministro toma la decisión, porque siempre lo habíamos dicho era una decisión política la que tocaba tomar, en donde delega tres asesores de su despacho, el doctor Pablo Viera, la doctora Eugenia Ponce de León [X: exdirectora del instituto Humboldt], exdirectora del instituto Humboldt y el director de la oficina jurídica Santiago Martínez, para que junto con los cuatro profesores, Silvia Restrepo, Santiago Madriñan de la universidad de los andes, Diana Álvarez de la javeriana, Luz Fernanda Jiménez de la de Antioquia y yo, entre septiembre y diciembre, trabajáramos en unos documentos borradores (énfasis) en donde le presentáramos nuevamente al despacho del ministro, una propuesta de solución, a toda esta problemática que acabamos de resumir, y eso es lo que pasa en Colombia [P: pero llamando, llamando a los que saben] exactamente, o sea, fue una construcción... conjunta.

**P:** Y aquí que permanentemente nos quejamos y prendemos botones de alarma, y hacemos sonar sirenas, en este caso podemos decir que suena música, que suenan campanas que...

**G:** excelente, es una... es un logro impresionante. Hay un dato importante también acá, en enero de este año el ministerio de ambiente cuelga esos documentos en la página web y los dejan 15 días para opinión de la comunidad colombiana, entonces reciben más de 70 (énfasis) comentarios y creo que el 99,9% muy positivos de ésta propuesta y ellos reorganizan y envían ya, desde el interior del ministerio, a la presidencia de la república, porque son decretos, son decretos que están firmados tanto por el presidente como por el ministro de ambiente, y el 27 de junio de este año salen los dos decretos firmados, lo cual modifica sustancialmente (énfasis), como usted lo dijo al inicio del programa, todo el tema de la investigación con fines científicos en temas de biodiversidad en Colombia.

**P:** profesor Caicedo...

**C:** si, profesor Andrade ¿Qué significa y que hay que esperar a partir de este cambio normativo frente a un tema del que se habla mucho pero que se ejecuta poco y es la investigación en biodiversidad en el país.



**G:** Aquí se está presentando un avance muy importante para que las instituciones, digamos de ciencia y tecnología e innovación hagamos investigación sobre temas que tienen que ver con biodiversidad, pero únicamente con temas que tienen que ver con fines científicos no comerciales. Se agiliza muchísimo el proceso, se tendrán permisos marco de investigación a 10 años... no se llaman de investigación perdón, se llaman permisos marco de recolección (énfasis), ya no es un permiso para investigar como lo que teníamos anteriormente. Entonces las instituciones por ejemplo, de educación superior podremos tener un permiso marco a 10 años, alrededor de un programa de investigación que plantemos, ya no es un permiso por un proyecto.

**X:** y los institutos, por ejemplo el Humboldt, el Sinchi que su trabajo legal es ese, ¿cómo son tratados en esa nueva normatividad?

**G:** ellos siguen siendo tratados con una exclusividad a la norma, así se venían tratando desde el año 2003, ellos no necesitan tener un permiso de recolección de ejemplares cuando trabajan sobre la biodiversidad, lo habla el mismo decreto.

**P:** profesor, ustedes empezaron ese trabajo en septiembre, la ley acaba de salir el 27 de junio. Septiembre, octubre, noviembre, diciembre, enero, febrero, marzo, abril, mayo... casi 10 meses. ¿cómo fue ese proceso? ¿cómo fueron esas discusiones? Entre científicos (énfasis)

**G:** fueron unas discusiones bastante, bastante amenas, terminamos ahora como, muy amigos, todos los integrantes del grupo, y, y hacíamos una reunión semanal, una en la universidad de los andes, una en la universidad javeriana, una en la universidad nacional, en donde nos reuníamos, los tres asesores del ministro, cuatro, los cinco profesores de las universidades siempre participamos, o vía Skype o vía presencialmente la profesora Jiménez, desde, desde Medellín, como representante de la universidad de Antioquia, y eran discusiones de cuatro, cinco horas, en las oficinas, en donde íbamos analizando tema por tema, y nos íbamos colocando, digamos, de acuerdo, en cada una de las definiciones, y los términos que se estaban utilizando, entonces, por ejemplo, negociar temas como que existe en el decreto que dice que cuando utilicemos técnicas moleculares, en la sistemática molecular, para la ecología molecular, en la biogeografía, eso no es un acceso al recurso genético, sino que entra en juego dentro de los permisos marco de recolecta. Esa discusión fue como dos sesiones más o menos, es decir que le invertimos cerca de unas 10 horas, para ponernos de acuerdo, pero este es uno de los logros más (énfasis) significativos que tiene este decreto.

**P:** y esto es para la investigación [**G:** para la investigación], y lo que significa el desarrollo (énfasis) de la biodiversidad en Colombia.

**G:** Si, y incluye estos decretos, incluyen cómo...

**P [interrumpe]:** es importantísimo

**G:** cómo se tienen que, porque ahora pueden venir investigadores de instituciones extranjeras a trabajar en Colombia

**P [interrumpe]:** ¿Qué pasaba con los extranjeros? Que eso es algo que estaba ahí, como algo de inequidad dentro de lo que estábamos viendo...

**G:** claro, eso era un completo desorden también, y a pesar de que el decreto 309 tenía un capítulo destinado a ésta problemática, pero era, había que tener un convenio firmado entre las dos instituciones, tenía que estar vinculado los investigadores... bueno era un trámite que para los mismos extranjeros y a mucha gente decían que, no queremos trabajar con la biodiversidad en Colombia y se le estaban presentando problemas a nuestros estudiante doctorales en universidades extranjeras, porque ellos querían hacer sus tesis de grado para obtener su título doctoral en Colombia pero la gente les decía no, si nos toca sacar el permiso de investigación, y nos toca depositar todos los ejemplares, porque en ningún ejemplar podía salir del país, decía el decreto 309, entonces la gente ya decía en Colombia no queremos trabajar, hoy en día la situación es distinta. Completamente... [no se entiende].

**P:** y es a partir, de este gobierno y del trabajo del ministro de ambiente

**G:** el doctor Juan Gabriel Uribe hay que darle, políticamente, todos los créditos, al ministro de ambiente.

**P:** y vuelvo a decir, toda la quejadera (énfasis) que hemos tenido se soluciona (énfasis) en éste momento.

**G:** si, [P: se soluciona con la expedición] queda completamente solucionado

**P:** ¿eso a qué se debe profesor? ¿a qué cree usted que el ministro Juan Gabriel Uribe tuvo conciencia (énfasis). Usted que tuvo la oportunidad de hablar con él.

**G:** entendió el problema Guillermo y quería colaborar así como quiere ayudar a solucionar la problemática que, de la investigación con fines comerciales, porque con fines comerciales si seguimos teniendo muchas demoras, pero pero es una persona que entiende mucho sobre los temas ambientales y tiene toda la disposición y toda la disponibilidad para para agilizar todos estos procesos y ver cómo desde el sector investigativo se apoya para la toma de decisiones y entendió que si esto no se agilizaba en el país, mirar problemas como la minería, problemas como los páramos, problemas ambientales en el país era muy muy muy complicados, sino agilizábamos al investigación en Colombia.

**P:** y fíjese de que, en su momento, pensábamos que no tenía la formación, para dedicarse a los temas, pensamos que el periodista podía pasa a vuelo de pájaro, por poner el ejemplo (G: si...) por encima de las actividades y fíjese que...

**G:** pero pero, escucha, y entiende muchísimo, que son dos factores, muy importantes, es decir, aplica muy bien su estrategia de comunicación, entonces se sabe comunicar con las personas y eso es algo fundamental en los procesos.

**P:** vamos a decirle buenos días a Felipe Alfonso Cardona, jefe de la sección de herbarios de la universidad de Antioquia, Doctor Cardona muy buenos días.

**F:** muy buenos días a todos

**P:** doctor hay un decreto, el 1375 que reglamenta ahora las colecciones biológicas, ¿cuál es su opinión sobre éste decreto?

**F:** bueno, para nosotros es muy grato tener este nuevo decreto porque en los últimos años habíamos tenido bastantes dificultades en los procesos como de manejo de las colecciones y sobre todo de intercambio y de investigación con otras instituciones tanto del país como extranjeras, esto mejora sustancialmente poder seguir haciendo como el desarrollo de la investigación en la botánica en el país.

**P:** ¿usted estaba anhelante (énfasis) por una reglamentación como ésta?

**F:** Ehhh... disculpa ¿estaba adelante?

**P:** estaba anhelante, ¿la esperaba? ¿Cuánto tiempo? ¿Cuánto tiempo sufrió por esto?

**F:** Nosotros desde el 2000 que salió el decreto 309 estábamos en la dificultad, y el profesor Andrade tiene **toda la claridad** sobre el asunto, y habíamos venido haciendo foros y simposios, discutiendo esta situación que estaba afectando bastante la investigación, estábamos muy enterados pues del procesos que se estaba haciendo, y claro obviamente estábamos esperando pues con ansias que se diera este cambio para poder seguir trabajando dentro de la normatividad y poder desarrollar la investigación tanto en la parte docente como investigativa.

**P:** profesor Andrade. En este momento para el manejo de colecciones biológicas ¿cómo podríamos explicarles a nuestros oyentes que va a operar este decreto 1375?

**G:** Guillermo ya no tendremos que estar renovando el registro de una colección cada dos años, ya es un registro único, eso ya es un paso superimportante, sólo con eso ya estaríamos avanzando mucho, pero tiene más ventajas, tiene el tema que los mismos ejemplares que están depositados en esas colecciones los podemos utilizar para análisis molecular, desde el punto de vista con fines científicos, aquí insisto mucho en

este término porque aquí lo que se está solucionando todo lo que tiene que ver con fines científicos. Eso no existía antes en la normatividad, diría, esto es un logro también dentro de la normatividad ambiental en Colombia, es decir, que los ejemplares de las colecciones biológicas se convierten en proveedores de esa información genética y eso legalmente tiene una trascendencia muy importante. El otro, el otro factor es que vamos a poder construir también con la información que está depositada, porque una vez que se registran esos ejemplares, por una única vez, ante el instituto Humboldt, vamos a aportar al sistema de información sobre biodiversidad para Colombia, los ejemplares, la información de esos ejemplares, que está depositado en esas colecciones biológicas, es decir que vamos a ayudar **a construir país**.

**P [interrumpe]:** vamos a hacer un inventario.

**G:** pero de lo que está depositado pero la XXX interesante es que cada institución va a manejar su información desde sus propios servidores, entonces el compromiso es reportar a través del sistema de información sobre biodiversidad, esa información que está depositada ahí, más no es entregarle a nadie al información, compartir lo que está ahí, entonces la ganancia como país, para uno como investigador es muy importante, pero también para país, las autoridades ambientales, corporaciones autónomas, los parques nacionales, el propio gobierno nacional a través del ministerio de ambiente podrá saber qué es lo que tenemos depositado en esas colecciones. Entonces, otro factor, y otra ganancia muy importante [P: profesor...]. Los ejemplares se podrán intercambiar con las colecciones extranjeras, podemos depositar ejemplares en colecciones extranjeras, y esto, **científicamente** (énfasis) tiene una trascendencia muy importante.

**P:** profesor ¿Qué tal si usted nos explica por qué razón se escogió al instituto Humboldt para ser el garante de la información que están entregando las instituciones educativas?

**G:** el instituto Humboldt es uno de los cuatro institutos que están adscritos y vinculados al ministerio de ambiente, es decir hacen parte del SINA, y el mandato que tiene el instituto Humboldt es un mandato a nivel de todo el territorio, el Sinchi, por ejemplo, tiene un mandato, de cubrimiento del Amazonía colombiana, el instituto del pacífico que es el otro instituto en el pacífico colombiano, o el invemar es en los mares colombianos, en las dos costas nuestras, pero el Humboldt es el que tiene un mandato a nivel nacional y está vinculado directamente con el ministerio de ambiente, entonces desde el decreto 309 y además adquiere las funciones del llamado inderena, entonces en el decreto 1378 del código de los recursos naturales, ya se decía desde esa época, desde el año 78

**P [interrumpe]:** va bien usted en sus conocimiento jurídicos profesor Andrade

**G [risa nerviosa]:** ando, ando metido en estos temas político-ambientales desde hace más de 20 años ya... entonces el decreto 1378 del año 78 dice que las colecciones había que registrarlas ante el inderena, entonces cuando se crea en el año 95 el instituto Alexander von Humboldt, que se crea a la ley 99 del 93 que crea todo nuestro sistema ambiental, el Humboldt adquiere todas las funciones del inderena, entonces esto viene desde el código de los recursos naturales.

**P:** Doctor Felipe Alfonso Cardona, ¿Qué tan listos están ustedes para hacer toda la recopilación de material y entregar los documentos que deben llevar al Humboldt? Porque ese es un poco de trabajo que les viene ahora ¿no?

**F:** sí, sí. Esos. Por un problema que vienen adelantando muchas de las colecciones desde que, todas las colecciones a nivel mundial biológicas están creando sus propias bases de datos ¿cierto?. Yo veo con preocupación de pronto algunas pequeñas colecciones o otras medianas, en el país que todavía no están en ese proceso, esto va a ser mucho más difícil para ellos. Nosotros hemos invertido bastantes recursos, en tener esa información lista y disponible, y estamos haciendo como los procesos adecuados de recepción de material para tener toda la información disponible de una vez en medios digitales y poderla entregar adecuadamente.

**P:** y les ha tocado ponerse a estudiar derecho también para alistar lo que tiene que ver con los permisos de recolección ¿no?

**F:** sí, ha sido un poquito difícil para nosotros, al principio, pero ya toda la parte, la gente que hace parte de, pues, la investigación científica y sobre todo en recursos biológicos, se ha enterado ya mucho sobre los decretos, que ha sido necesario aprender y actuar bajo esta normatividad.

**P:** profesor Andrade yo le quería preguntar ¿Qué sucede con los investigadores de instituciones extranjeras que se vayan a vincular y que vayan a buscar permisos de recolección?

**G:** ellos tienen que estar vinculados mediante, digamos, proyectos de investigación, porque es que la manera de obtener ahora un permiso marco de recolecta es digamos una institución de educación superior, tendrá que estar reconocida por el ministerio de educación nacional y sus programas académicos tienen que estar también acreditados ante el ministerio de educación, pero además se debe tener un programa de

investigación, entonces esos investig..., y en ese orden, ya no es un proyecto sino un programa de investigación y en ese programa deben haber grupos que están categorizados ante Colciencias, es decir, la institución debe tener grupos, relacionado con ese programa de investigación, que estén categorizados ante Colciencias, y los investigadores extranjeros tienen que estar vinculados a esos programas de investigación, la institución decid..., las universidades reportarán, un listado de investigadores, y ahí deben estar esos investigadores extranjeros, y hay que tener algún convenio firmado con esa institución, es decir, lo que tradicionalmente hacemos los investigadores con nuestros pares académicos de instituciones extranjeras.

**P:** ¿y qué les pasaba antes y cómo actuaban los profesionales que estaban dedicados a la investigación, los extranjeros?

**G:** muchos, muchos de ellos, y da vergüenza confesarlo así tan escuetamente, pero muchos de ellos venían a trabajar en Colombia pero ilegalmente, colectaban y muchos iban al campo con muchos investigadores colombianos porque porque era muy difícil la obtención de un permiso o resultaban inscribiendo sus proyectos de investigación, investigadores colombianos, para que a través de esa institución se permitiera la obtención de ese permiso de investigación para ese proyecto que estaban realizando, entonces era, era algo que no estaba funcionando en el país tampoco.

**P:** profesor, a ustedes los llama el ministerio de ambiente, reúne a las universidades, traen unos especialistas, y esa discusión ¿cómo se empieza a dar?, porque me imagino que hay algunos aspectos de los dos decretos que a usted no estaba de acuerdo, ¿eso se dio una negociación (énfasis)?

**G:** esto es una negociación

**P:** ¿esto se tocó negociarlo?

**G:** si, esto es una negociación, pero una negociación académica, científica, entonces era ponernos de acuerdo, pues indudablemente, yo personalmente hubiese querido que esto quedara mucho más abierto pero tenerlo más abierto es mucho más complicado que lo que tenemos hoy en día, entonces yo estoy muy contento con la forma como...

**P [interrumpe con risa]:** ¿y en que le tocó ceder? Si

**G:** yo hubiese querido que en Colombia no se necesitara tener un permiso de recolecta para trabajar con la biodiversidad en el país, por ejemplo, inicialmente era que no se tuviese un permiso de investigación, es decir, que nadie tuviese que sacar eso en el país, hoy en día hablamos es de permisos de recolecta para trabajar sobre la biodiversidad en Colombia y lo necesitamos hacer el resto de las instituciones colombianas, a excepción de los institutos adscritos y vinculados al ministerio, pero tampoco me parece grave como está planteado ahí.

**P:** doctor Felipe Alfonso Cardona de la Universidad de Antioquía, ¿usted tiene algunas reservas sobre algún artículo del decreto, de los dos decretos?

**F:** bueno yo, por el momento lo veo muy bien, simplemente pues, de todos modos estos decretos, hay cosas que quedan amplias, o que quedan ambiguas y a veces de parte de los abogados puede interpretarse de alguna manera como tuvimos problemas con el decreto anterior ¿cierto? Que interpreta mal ciertos términos que dificultaban como el manejo de de la información. pero en realidad yo creo que este trabajo académico que se hizo para la adecuación de los decretos nuevos, se hizo a mucha conciencia, y como dice el profesor Andrade, obviamente a uno hubiera querido que quedara más amplio en términos de que hay, esto tiene muchos aspectos, inclusive desde la educación secundaria o cómo se manejaría pues la recolección, por otro tipo de actividades académicas y que de pronto no aparecen aquí muy explícitas. Eso es como el único temor que tengo que en algún momento uno quiera hacer investigación a ese nivel y no pueda, pueda volverse ambiguo pues como la respuesta a un permiso de investigación.

**P:** No. Doctor Felipe Alfonso Cardona, jefe de la sección de herbario de la universidad de Antioquia, muchas gracias por habernos acompañado hoy en UN radio.

**F:** bueno, con mucho gusto, muchas gracias

**G [interrumpe]:** un saludo Felipe

**F:** Gracias, Gonzalo

**P:** le vamos a decir a Diana Álvarez buenos días. Hoy sí que son buenos, la directora del departamento de biología de la facultad de ciencias de la universidad javeriana. Profesora Diana bienvenida a UN radio.

**D:** buenos días

**P:** profesora, usted que puede contar de su experiencia en la redacción de los decretos, el 1375 y el 1376

**D:** ¿te puedes cuadrar un poquito más alto porque no te estoy oyendo?

**P:** profesora ¿usted tiene un fijo que la podamos llamar?

**D:** si, xxxx

**P:** ya aquí por intermedio de nuestra colaboradora de producción por favor es que esa cuestión de los celulares

**G:** no funcionan muy bien

**P:** los celulares todavía no están inventados, el señor ministro de telecomunicaciones tampoco ha hecho la tarea completa para obligar a los operadores a que nos sigan colaborando, y eso que el señor presidente ha sido insistente.

**G:** si pero, definitivamente la comunicación por celular, sobre todo creo que en el último año, está pésima

**P:** ¿y cuánto estamos pagando por eso? O sea ¿Cuánto nos cuesta a las instituciones, cuanto les cuesta a los ciudadanos colombianos tener una llamada que se empiece y no se puede terminar y esos minutos, esos segundos sobrantes ¿por qué ellos siempre los cobran?

**G:** o cuando usted tiene que utilizar su teléfono, bien sea para voz o para datos, esta fuera del aire

**P:** Claro, no sé si al profesor le haya pasado por estos días el internet está malísimo

**G:** si, no

**P:** el internet, casi todo

**G:** en los últimos cuatro meses

**P:** bueno en los últimos diez años (risas)

**G:** en ciudad salitre, en la universidad nacional, esto no funciona

**P:** y uno no sabe si es que están dando un mal servicio por cuenta de ofrecer lo nuevo que nos van a dar a través del 4G, que ese es el otro planteamiento, entonces nos están aburriendo, nos están prestando ese mal servicio, yo estoy suponiendo además, nos dan un mal servicio para que apenas este el 4G, o que se empiece uno a pasar a UNE, para empezar a buscar un buen servicio del desespere de ver que uno no se puede comunicar. Profesor Andrade ¿usted cree que en este momento hay una tranquilidad completa para los investigadores en lo que tiene que ver con permisos y colecciones biológicas?

**G:** si, yo creo que la tranquilidad es importante, ahora ahora estamos, es clave, es clara también dentro de los decretos, ahora la tarea es por un lado de la, todas las cosas que hay que alistar de las instituciones porque es que aca ahora las instituciones adquieren la responsabilidad de la obtención de esos permisos marco, por ejemplo antes para obtener un permiso de investigación, tocaba previamente entregar un certificado del ministerio del interior por si había o no comunidades étnicas en el área donde uno iba a desarrollar el proyecto, ahora como esto es un programa de investigación entonces no es necesario entregar ese certificado al ministerio del interior pero si uno va a hacer recolecta de ejemplares en área de una comunidad étnica será responsabilidad entre, de la institución y el ministerio del interior realizar el proceso de consulta previa para trabajar con esa comunidad este es otro cambio muy importante que era algo que estaba poniendo una traba también en el proceso de la obtención de esos permisos, entonces la agilidad de todo el procesos es impresionante, como tal hay que montar muchas cosas en el interior de las instituciones para poner en práctica esto, porque otro requisito para poder tener un permiso marco de investigación es tener un sistema de información del manejo de los proyectos de investigación, eso es importante ahora en las instituciones, en las instituciones que no tienen sistema de manejo de proyectos de investigación desde sus vicerrectorías de investigación tendrán que montar ese proceso.

**39:57**

**P:** profesora Diana Álvarez

**D:** Hola cómo estás

**P:** profesora tengo entendido que usted está es (.) viajando (.) usted va a subirse (.) creo que yaaa en transporte público (.) pero que tal si usted nos puede opinar sobre lo que significó para usted participar en los decretos el 1375 que reglamenta las colecciones biológicas y el 1376 que reglamenta los permisos de recolección.

**D:** bueno para para nosotros significó un avance significativo en la labor de investigación (.) que podemos hacer en Colombia (.) de hecho pues sí es una respuesta a todas las necesidades que teníamos de de (.) de no tener que (.) anticipadamente preveer proyecto por proyecto (.) eh lo que íbamos a coleccionar y el permiso marco lo que implica es que a posteriori podamos hacer estos informes y (.) que eso (XXXX) también en (.) en la buena fe sobre la labor que hacemos como investigadores en Colombia en biodiversidad (.) entonces pues yo creo que de los avances más importante es que las unidades de observación del permiso son los programas y sus investigadores y su actividad que se reporta a posteriori (.) y el poder hacer una serie de observaciones a nivel de DNA en diferentes áreas como taxonomía y sistemática que antes implicaba la XXX de acceso a recursos genéticos cuando no hay acceso porque no hay cuestiones comerciales, como dejar el concepto bien diferenciado con fines comerciales y sin fines comerciales es un avance tremendamente importante eh y vigilar donde hay que vigilar y que de todas maneras existe la ruta del

servicio individual ehhhh donde también se vigila como se hace la (.) la recolecta (.) pues yo creo que buena parte de nuestra actividad esta en el (XXXX) humano (.) obviamente aportando al conocimiento de la biodiversidad en el país que también (xxx) implica una organización dentro de nuestras instituciones y que aquellas que no puedan pues cumplir con ciertos requisitos pues tengan como esos motivos pues para organizase (.) para contribuir (.) lo mismo del tema de colecciones (.) el registro único por una vez es pues eh (.) facilita la labor (.) eh y también es un voto de confianza a los que estamos haciendo eh (.) los investigadores que trabajamos en biodiversidad (.) que también hace queee ya estemos más (.) mucho más tranquilos ehhy yyyy estamos avanzando

**P:** Doctora diana ¿usted cree que entonces que esos momentos tormentosos de estar haciendo vueltas y hacer trámites burocráticos (.) terminaron completamente para los investigadores en este momento?

**D (risas, casi carcajadas):** Noooo tampoco

**P:** ¿no?

**D:** tampoco tan así porque [P: no es tan sencillo] se requiere informar (.) y (.) yyy los informes quedaron cada seis meses entonces también requiere como una organización con la institucionalidad para recoger esa información ehhy (.) y que pueda (.) ágil y que todos entendamos la responsabilidad que tenemos en la mano y de cómo tenemos que hacer eso (.) entonces no sí se requiere trabajo pero es un trabajo ya interno de organización que requiera requerirá menos puntos de contacto con el ANLA en este caso (.) pero igual siiii no no no dice que chévere ya vamos a estar en campo y sin tener que hacer nada más, no. Pero es diferente porque ya estamos parados detrás de nuestras instituciones (.) no como personas individuales que eran primero XXXX con el permiso de investigación que la entidad acompañante era la institución con la que trabajamos (.) entonces creo que es que tenemos una (xxx)de organización (.) importante en la cual vamos a estar amparados.

**P:** pero eso es orden y método también

**D:** exactamente es cuestión de realizar, anticipar en que fechas hay que estar recogiendo la información, las vicerrectorías de investigación ehhy obviamente apoyan este papel y por eso ese prerrequisito en el decreto se requiere que en el sistema de información interno que recojan lo que pasa en los proyectos y desde vicerrectoría, o unidades que cumplan sus funciones, que puedan hacer esa anticipación y esa organización dentro de las instituciones (.) de educación superior acreditadas.

**P:** doctora diana (.) como esto fue algo de negociación entre las personas que estaban en el ministerio y los profesores de distintas universidades, ¿a usted le quedo aaalgo incomodo dentro de los dos decretos, el 1375, el 1376, algo que usted considere que no lo pudo lograr?

**D:** pues ahíiii pues yo estaba ahí formando parte del grupo porque que si hay algo que me incomoda pues yo asumo la responsabilidad ehhy (.) pero:: obviamente no esta pues en el grado ideal que yo quisiera, pero la idea es avanzar y movernos hacia adelante, ya llegará el momento de hacer nuevos ajustes y::: los otros investigadores se darán cuenta que no, que se cambió las circunstancias (XXXX) o:tra cosa (.) pero de lo que se trata es de construir, construir mejores caminos para que todos transitemos y superar la era de quejarnos, y quejarnos y quejarnos porque ahí no funcionaba, realmente, toca mirar la ruta donde uno pueda contribuir y durante todo el proceso me quedo claro que muchos estábamos de acuerdo, las cosas con las que no acordábamos era en común acuerdo y finalmente si se pudo encontrar el cómo, entonces yo creo que es una lección muy importante de no quedarnos sentados quejándonos sobre ayyy eso es así, así, sino no, que podemos hacer, y este es un ejemplo en el que trabajando en equipo con diferentes visiones pero muy muy comprometidos y dispuestos esto si: puede funcionar, entonces pues yo quede realmente satisfecha con todo el proceso y no puedo decir que fue 100% perfecto pero lo que tenemos es mucho mejor que lo que teníamos antes.

**P:** y hablando de rutas entonces la dejamos ir a hacer su trabajo de campo con sus alumnos, muchas gracias por haber estado en UN radio.

**D:** Ok, muchas gracias

**P:** Que tenga buen viaje en esa flota

**G:** un saludo Diana

**D:** hasta luego

**P:** buen viaje en esa flota

**D:** chao Gonzalo, bueno hasta luego

**P:** vive Colombia, viaja por ella y aprende con ella, ¿no profesores?

**G:** si, si Bióloga, bióloga

**P:** los biólogos es con botica de caucho, cachucha y carpa. Profesor le quería preguntar ¿Cómo queda en el asunto de los permisos de recolección lo que tiene que ver con las especies domésticas? Porque es que tuvieron ese detalle.

**G:** especies domésticas no entran acá dentro del proceso. Esto es solamente especies que están en el medio silvestre. Todo lo domesticado no entra, no está cubierto por el decreto.

**P:** pero sí lo que toca es organizar las colecciones además

**G:** claro! Y el proceso que hay que hacer en la universidad nacional para poner a funcionar esto, porque la, como decía Diana, el decreto 1376 tiene dos maneras de entrar: con la obtención de un permiso marco para recolecta a 10 años o permisos individuales y el permiso individual es prácticamente el permiso al que estábamos acostumbrados, pero la universidad nacional obtendrá permisos marco a 10 años para tres programas de investigación y yo creo que el profesor Alexander Gómez nos contará más en detalle cómo se está montando esto desde la vicerrectoría de investigación de la nacional pues para que queden amparados todos los investigadores de las 8 sedes de la universidad Nacional y nuestros estudiantes de pregrado, de maestría y de doctorado que trabajamos en temas que tienen que ver con ambiente y biodiversidad.

**P:** profesor, los decretos ¿cómo manejaran lo que son los procesos de captura, de remoción o de extracción temporal o definitiva de los medios naturales donde estén los especímenes? Llámese mariposa, llámese planta, llámese mosquito, llámese bueno.

**G:** es que Guillermo ahora uno no... la diferencia con el 309 es que uno ya no tiene que sacar un permiso para un proyecto determinado, es decir, si mi proyecto es las mariposas de la ciudad universitaria, yo antes tenía que tener un permiso de investigación para desarrollar ése proyecto puntual, ahoritica va a ser un proyecto por ejemplo para un programa que se llama biodiversidad y conservación, o taxonomía y sistemática de Colombia, en donde hay muchísimos proyectos pero no tengo yo que listar cada una de las actividades o los proyectos que voy a desarrollar en ese programa sino que cada seis meses se, yo tengo que estar informándome ante un formato que es de una hoja, cada formato que hace parte...

**P [interrumpe]:** los hicieron ustedes

**G:** Eh... hicimos unos borradores pero ahoritica hay unos formatos que se colocaron y estamos ahí haciéndoles unos pequeños ajustes en estos días.

**P [interrumpe]:** usted ha oído esa frase de víctima de su propio invento

**G:** si, si, si, si, si

**P:** ¿si la conoces?

**G:** la viví cuando se hizo el decreto 309 en el año 2000 porque junto con el directo del Humboldt en ése momento, Cristian Samper, ayudamos a escribir el decreto 309 del año 2000, del cual me tocó

**P [interrumpe]:** ese Samper que está en el smithsonian

**G:** esta ahoritica, salió de director del smithsonian, está en WCS en los Estados Unidos en nueva york de director de la fundación más grande que maneja el zoológico de nueva york por ejemplo. Y fuimos víctimas de eso, porque las resoluciones que hicieron, que reglamentaban ese decreto, en esas resoluciones cuando se inventaron los formatos, se inventaron dentro de las preguntas de los formatos, denos las coordenadas geográficas de donde se van a coleccionar esos ejemplares, entonces ahí fuimos víctimas de nuestro propio invento. Ahoritica esos formatos que son de una hoja, ya no hacen parte de los decretos, es decir, pueden ser modificados, a medida que vayamos encontrándoles cosas que no funcionan al formato, pero hasta ahora los estamos revisando porque esos los colgaron el lunes en la página web del ministerio, y si hay que hacerles algunos ajustes nos vamos a poner fácilmente de acuerdo con el ministerio.

**P:** profesor ¿por qué no ha trascendido esto más a la opinión pública? El tema de investigación es un tema, que parece subterráneo, como que no era...

**G:** yo creo que si, o sea no se le ha hecho mucha mucha difusión, aunque por las redes sociales ya contamos mucho que se había solucionado esto, pero pero quizá estamos acostumbrados más en el país a reaccionar cuando existe el problema entonces ahí es cuando peliamos, cuando discutimos, cuando hacemos cartas, cuando buscamos reuniones, hacemos foros, pero una vez se encuentra la solución al problema, como la firma de estos dos decretos del 27 de junio, la gente pues simplemente los recibe, comienza a mirar como lo aplica, pero del escándalo hacia el agradecimiento sobre todo al gobierno nacional que es la parte más importante de esta... ellos fueron los que tomaron... el ministro de ambiente fue el que tomó la decisión de "vamos a solucionar este problema" para que la investigación científica en Colombia con fines comerciales salga adelante, ellos tienen muchísimo crédito en este proceso y los cuatro rectores de nuestras universidades que nos apoyaron para sacar adelante el proceso.

**P:** profesor ¿usted no cree que éste ha sido un ensayo exitoso de la convocatoria desde el gobierno para buscar a los especialistas? Usted que tiene su cédula colombiana ¿no se siente muy satisfecho de haber

participado en un proceso que usted sufría, un proceso que usted sufrió, y un proceso que ayuda a solucionar?

**G:** si claro Guillermo,

**P [interrumpe]:** ¿no es un ejemplo también para que lo veamos en otro tipo de actividades como que el gobierno fuera más amplio en ése sentido y que tomara la misma línea del ministerio de ambiente?

**G:** lo hemos dicho en estos mismos micrófonos con toda la problemática ambiental en donde hemos hablado con congresistas, si usted recuerda un congresista nos dijo el año pasado que es que le congreso no se asesoraba en los científicos colombianos, entonces yo creo que sí. Éste el ejemplo de dos normas colombianas, de dos decretos, en donde el trabajo con expertos en el tema porque además no eran solamente los cinco profesores que participábamos sino el conocimiento de mucha gente detrás de este proceso porque sobre el tema había opinado muchísimas personas, ponerlo en práctica y convertirlo en un decreto junto con los abogados, como era la doctora Eugenia y el doctor Santiago Martínez, volcarlo esto en un decreto creo que sí es un logro impresionante, si así se hiciesen muchas de las normas [P: es un ejemplo ¿no?] normas en el país yo creo que tendríamos...

**P [interrumpe]:** porque yo me acuerdo siempre esa cara de desilusión cuando llegaba usted a hacer un programa a contar el tema (risas de G). es que, profesor, mire no es por hacerlo tan dramático pero casi para llorar.

**G:** si esto era algo que uno... hubo días en que decíamos bueno ¿qué más hacemos? O sea porque es que ya hemos escrito, hemos hecho foros, hemos... los medios de comunicación, radio, prensa, televisión, mostraban esta problemática, pero no encontrábamos como... la vía para que esto se solucionara, entonces tener esto en nuestras manos es un logro como investigadores en Colombia, impresionante.

**P:** profesor ¿y qué tan preparadas están las autoridades ambientales para la aplicación de los decretos? Para hablar de las corporaciones autónomas regionales, de la autoridad nacional de licencias ambientales, y de parques naturales nacionales de Colombia.

**G:** tienen que hacer ajustes así como las instituciones porque el trámite en un año tiene que estar montado en línea, vía páginas web, entonces el ajuste que hay que hacerle a estos procesos también en las corporaciones autónomas, en la ANLA, y en las universidades es impresionante, porque la idea es que todo se haga electrónicamente y no de papel en papel, gente llevando documentos a las instituciones, entonces inclusive en los decretos hay un artículo donde... de transición hacia ese espacio electrónico, vía vía páginas web, de los cambios que tienen que hacer las instituciones, por ejemplo, el intercambio de información a través del sistema de información sobre la biodiversidad

**P[interrumpe]:** ¿qué tanto le sirve por ejemplo al sistema de información sobre biodiversidad?

**G:** es impresionante. El adelante va a ser impresionante, inclusive para el mismo Colciencias, por ejemplo, para todo el tema de proyectos de ciencias y tecnología e innovación, para todo el tema de lo que está ocurriendo ahorita con regalías, ahí vamos a poder saber ya en qué sitios... o sea, estoy pensando a 3, 4, 5 años de aplicabilidad de ésta norma, ya conocemos qué es lo que hay en las distintas colecciones, pero también vamos a saber qué se ha producido como resultado de los proyectos de investigación, porque también tenemos que reportar vía web los artículos que se desprendan de los proyectos de investigación, entonces cómo articular toda esta información que se va a comenzar a generar, desde la investigación que se están haciendo en todas las instituciones del país, de ciencia y tecnología de éste país, es el gran reto que tenemos en éste momento, tanto a nivel gobierno como a nivel institucional.

**P:** profesor ¿y los permisos marcos de recolección van a quedar a cuánto tiempo?

**G:** a 10 años

**P:** a 10 años

**G:** eso es impresionante, antes se tenía un permiso para investigación [P: temporal] para un proyecto, para un proyecto, durara un año, durara dos años, durara seis meses, se acababa el proyecto, se acababa el permiso, si usted iba a hacer otro proyecto tenía que volver a sacar otro permiso, es decir, tenía que volver hacer el trámite, aquí es simplemente un programa en el cual hay unos investigadores que están trabajando en ese programa y uno durante los 10 años puede tener muchos proyectos que están articulados.

**P:** profesor ¿Cómo queda el asunto respecto a la prohibición de comercializar especímenes o muestras obtenidos con fines de investigación científica?

**G:** esto, esto tiene que tener unos acuerdos de la convención CITES, por ejemplo, ejemplares que están listados en los apéndices CITES<sup>294</sup> o ejemplares que están vedados, o especies amenazadas, previamente hay

<sup>294</sup> Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres. Nota del transcriptor.



que informar y esto sí me parece que es una responsabilidad de uno como investigador, que uno va a trabajar con esas especies, por ejemplo, que están amenazadas, o en peligro de extinción, o en estado crítico, o vulnerable, es decir, se permite hacer investigación pero previamente a eso sí hay que hacer un informe y analizarlo con las autoridades ambientales para ver si verdaderamente vale la pena desarrollar esa investigación y eso es lo que uno llama responsabilidad de país.

**P:** y toca darle las gracias entonces al señor Juan Gabriel Uribe, ministro de ambiente y desarrollo sostenible.

**G:** si, si

**P:** toca reconocerle públicamente

**G:** y a los tres asesores que él delego porque hay una voluntad política muy importante

**P:** y el ejemplo profesor, ver que si reúnen a los especialistas, y no se ponen a discutir en otro sitio o lo que no tiene que ver, es un muy (énfasis) ejemplo para construir el país. Profesor se quitó ese pian de encima, sé que traía más de 10 años.

**G:** si, si, si. Ahora nos toca arrancar a mirar, y hay una voluntad también del ministro, de comenzar a mirar cómo se soluciona y se agiliza el proceso con todo lo que es con fines comerciales, porque ahora hay que mirar todo el tema de distribución justa y equitativa de los beneficios de la biodiversidad desde el punto de vista comercial.

**P:** y eso requerirá de otra reglamentación

**G:** es otra reglamentación aparte si

**P:** menos mal que no la trataron de hacer al tiempo

**G:** no porque a esto lo regula una decisión supranacional que es una decisión andina que es todo el acceso a recursos genéticos, entonces ahí toca comenzar a trabajar porque la universidad nacional tiene muchísimos proyectos que tienen que ver con el tema comercial, pero que si no se agiliza también ese proceso pues vamos a seguir metidos en un problema. Pero eso ya es otra temática.

**P:** profesor Andrade ¿cómo le damos las gracias los colombianos al grupo de trabajo? ¿Qué hacemos?

**G:** no (risas) yo creo que no hay que dar las gracias al grupo de trabajo de los, de los profesores porque lo que hicimos fue llevar una vocería de los investigadores colombianos entonces, más bien nosotros las gracias a nuestras directivas, al profesor Mantilla, al profesor Alexander por parte mía...

**P[interrumpe]:** Alexander Gómez, el vicerrector de investigación de la universidad nacional

**G:** sí, por por la confianza pues depositada en mi, en mis compañeros de la universidad nacional, a mis compañeros de las otras universidades, y yo sé que ellos también agradecen también mucho a sus profesores, a sus directivas, y yo creo que estamos todos muy contentos por haber logrado... todos como investigadores, por haber logrado sacar esto adelante.

**P:** Decreto 1375, reglamento de colecciones biológicas, Decreto 1376, reglamento al permiso de recolección de especies para investigaciones científicas no comerciales. Publíquese y cúmplase. 27 de junio del año 2013. Profesor muchas gracias por habernos acompañado en el día de hoy y gracias por esa labor.

**G:** A ustedes Guillermo, muchas gracias.

**P:** distintas opiniones, ayudan a conformar la opinión pública, audiencia inteligente.

## G. Annexes: Structure of UAND forum (following advertising)

### Abriendo Puertas para la Investigación Científica en Colombia

Obtención de permisos de investigación, contratos de acceso a recurso genético y colecciones biológicas

#### 1. Agenda

Hora	tiempo	A cargo de institución...	A cargo de ...	Cargo		
1	Inscripciones		7:30-8:30			
2	Bienvenida	08:30 - 8:35	5min	Universidad de los Andes	Dra. Silvia Restrepo	Directora Departamento de Ciencias Biológicas - Uniandes
3	Apertura	8:35 - 8:45	10min	Universidad de los Andes	Dr. Pablo Navas Sanz de Santamaría	Rector - Uniandes
4	Propuesta de Permisos de investigación y de colecta, Contratos de acceso a recurso genético y Colecciones biológicas	8:45 - 9:25	40 min	Ministerio de Ambiente	Dra. Claudia Rodríguez	Dirección de Bosques Biodiversidad y servicios ecosistémicos del Ministerio de Ambiente y Desarrollo Sostenible
5	Receso		9:25 - 9:50	25 min		Universidad de los Andes
6	Propuesta Consulta previa	9:50 - 10:10	20 min	Ministerio del Interior	Dr. John Jairo Morales	Coordinador Jurídico Consulta Previa
7	Ponencias alimentadoras del debate	10:10 - 10:40	10 min	Universidad de los Andes	Dra. Susana Caballero	Profesora Asistente
10 min		Dr. Gonzalo Andrade		Profesor Asociado		
10 min		Dr. Santiago Madriñan		Profesor Asociado		
8	Debate	10:40 - 12:10.	90 min			Mesa Principal, invitados especiales y público en general (en este orden)
9	Preguntas Público	12:10: - 12:30	20 min			Público y Expositores
10	Cierre	12:30 - 1:00	30 min			Moderador.
Ministro del Medio Ambiente.						
Representante de la mesa de discusión.						

## H. Annexes: Information from Andrade's Web Site

From: <https://sites.google.com/site/mgandradec/problematika-para-la-obtencion-de-permisos-de-investigacion-y-contratos-de-acceso-a-recursos-geneticos-en-colombia>

### Problematika para la Obtención de Permisos de Investigación y Contratos de Acceso a Recursos Genéticos en Colombia

#### Propuesta de Decretos

- 1- Permiso Investigación
- 2- Contrato de Acceso a Recurso Genético

#### Informes

- 1- Informe marzo de 2012
- 2- Informe septiembre a 2012

#### Propuestas de solución

- 1- Carta Dirección Ecosistemas (Junio 14 de 2012)
- 1- Carta presidente Santos (Agosto 22 de 2012)
- 2- Respuesta Presidente Santos (Septiembre 11 de 2012)

#### Notas de prensa

El Espectador

- 1- Enero 4 de 2012
- 2- Agosto de 2012

UN Periodico

- 1- No. 128, noviembre 28 de 2009
- 2- No. 151, Diciembre 11 de 2011

Agencia de Noticias UNAL

- 1- Enero 30 de 2012
- 2- Febrero 27 de 2012

Planeta Caracol Radio

- 1- Febrero 21 de 2012

El Tiempo

- 1- Febrero 26 de 2012

Red de Ciencia y Desarrollo

#### Foros

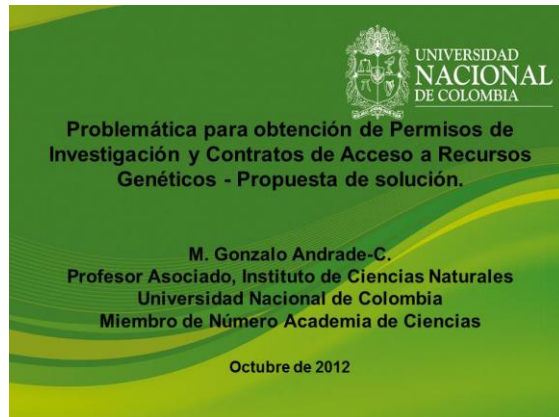
- 1- Foro Universidad Jorge Tadeo Lozano
- 2- Foro Universidad de Los Andes (Septiembre 3 de 2012)

### **Conferencias Dictadas**

- 1- Instituto de Biotecnología, Universidad Nacional de Colombia (Bogotá, Julio de 2011)
- 2- Instituto de Ciencias Naturales, Universidad Nacional de Colombia (Bogotá, Agosto de 2011)
- 3- Expouniversidad, Universidad de Antioquia, Medellín, (Medellín, Agosto de 2011)
- 4- Asociación Colombiana de Facultad de Ciencias ACOFACIEN (Medellín, Octubre de 2012)
- 5- Academia Colombiana de Ciencias Exactas Físicas y Naturales (Bogotá, Noviembre de 2011)
- 6- Consejo Nacional de Ciencia Tecnología e Innovación Colciencias (Bogotá, Noviembre de 2011)
- 7- Simposio sobre conservación de ecosistemas y especies amenazadas, Universidad Industrial de Santander, UIS, (Bucaramanga, septiembre de 2012)
- 8- XIV Jornadas Internacionales en Derecho del Medio Ambiente, Universidad Externado de Colombia, (Bogotá octubre de 2012)
- 9- 5 Simposio Nacional Forestal, Universidad Nacional de Colombia, (Medellín, Octubre de 2012)

# I. Annexes: Andrade's Slideshow

Courtesy of professor Gonzalo Andrade.



## DECRETO 302 10/02/2003

por el cual se modifica el párrafo 1° del artículo segundo del Decreto 309 de 2000, el cual reglamenta la investigación científica sobre diversidad biológica

El Presidente de la República de Colombia, en uso de sus facultades constitucionales y legales, en especial de lo establecido en el numeral 11 del artículo 189 de la Constitución Política, el artículo 51 del Decreto-ley 2811 de 1974, y los artículos 20, 21 y 38 de la Ley 99 de 1993, y

### CONSIDERANDO:

Que mediante el Decreto 309 del 25 de febrero de 2000, el Gobierno Nacional reglamentó la investigación científica sobre diversidad biológica;

Que el párrafo 1° del artículo 2° del mencionado decreto, exime al Ministerio del Medio Ambiente, hoy denominado Ministerio de Ambiente, Vivienda y Desarrollo Territorial a las corporaciones autónomas regionales de desarrollo sostenible y a los grandes centros urbanos de la obtención de permiso de estudio para adelantar actividades de investigación científica sobre diversidad biológica, pero no de suministrar información acerca del proyecto investigación al Sistema Nacional de Investigación Ambiental;

Que analizada la anterior situación, se ha establecido que la exención de la obtención del mencionado permiso de estudio, también debe cobijar otras entidades integrantes del Sistema Nacional Ambiental, como son: el Instituto de Hidrología, Meteorología y Estudios Ambientales, Idem, el Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andrae", Invermar, el Instituto de Investigación de Recursos Biológicos "Alexander Von Humboldt", el Instituto Amazónico de Investigaciones Científicas, "Sinchi" y el Instituto de Investigaciones Ambientales del Pacífico "John Von Neumann"; bajo la consideración de que son entidades científicas adscritas y vinculadas al Ministerio de Ambiente, Vivienda y Desarrollo Territorial a las cuales la ley les asignó entre sus funciones principales, el desarrollo de la investigación científica sobre la diversidad biológica presente en el territorio nacional;

## DECISION 391

Régimen Común sobre Acceso a los Recursos Genéticos

LA COMISION DEL ACUERDO DE CARTAGENA,

VISTAS: La Tercera Disposición Transitoria de la Decisión 345 de la Comisión y la Propuesta 284/Rev. 1 de la Junta;

CONSIDERANDO:

Que los Países Miembros son soberanos en el uso y aprovechamiento de sus recursos, principio que ha sido ratificado además por el Convenio sobre Diversidad Biológica suscrito en Río de Janeiro en junio de 1992 y refrendado por los cinco Países Miembros;

Que los Países Miembros cuentan con un importante patrimonio biológico y genético que debe preservarse y utilizarse de manera sostenible;

Que los países andinos se caracterizan por su condición multiétnica y pluricultural;

Que la diversidad biológica, los recursos genéticos, el endemismo y rareza, así como los conocimientos, innovaciones y prácticas de las comunidades indígenas, afroamericanas y locales asociados a éstos, tienen un valor estratégico en el contexto internacional;

REPUBLICA DE COLOMBIA  
MINISTERIO DE AGRICULTURA

## DECRETO 2811 DEL 18 DE DICIEMBRE DE 1974

Por el cual se dicta el Código Nacional de Recursos Naturales Renovables y de Protección al Medio Ambiente.

EL PRESIDENTE DE LA REPUBLICA DE COLOMBIA, en ejercicio de las facultades extraordinarias conferidas por la ley 23 de 1973 y previa consulta con las comisiones designadas por las cámaras legislativas y el Consejo de Estado, respectivamente,

DECRETA:

El siguiente será el texto del Código Nacional de Recursos Naturales Renovables y de Protección al Medio Ambiente:

TITULO PRELIMINAR

CAPITULO UNICO

**Artículo 1:** El ambiente es patrimonio común. El Estado y los particulares deben participar en su preservación y manejo, que son de utilidad pública e interés social. La preservación y manejo de los recursos naturales renovables también son de utilidad pública e interés social.

## DECRETO 309 DE 2000

(febrero 25)

Diario Oficial No. 43.915, del 1 de marzo de 2000

MINISTERIO DEL MEDIO AMBIENTE

Por el cual se reglamenta la investigación científica sobre diversidad biológica.

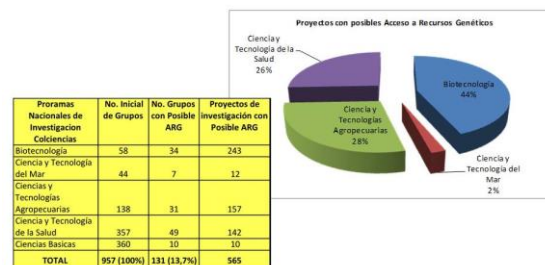
EL PRESIDENTE DE LA REPUBLICA DE COLOMBIA,

en uso de sus facultades constitucionales y legales, en especial de lo establecido en el numeral 11 del artículo 189 de la Constitución Política, así como también el artículo 51 del Decreto-ley 2811 de 1974, y los artículos 20, 21 y 38 de la Ley 99 de 1993, y

CAPITULO I.  
DISPOSICIONES GENERALES

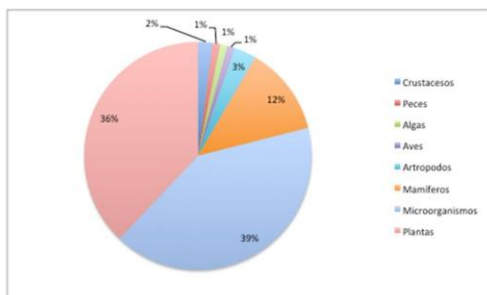
**ARTICULO 1o. AMBITO DE APLICACION.** El presente decreto se aplicará a todas las investigaciones científicas sobre diversidad biológica que se realicen en el territorio nacional, sin perjuicio de lo dispuesto por la Ley 13 de 1990 acerca de la competencia del INPA en materia de investigación científica de recursos pesqueros, y de las competencias asignadas a la Dimar y al Ministerio de Relaciones Exteriores por el Decreto 644 de 1990 en lo que conlleva a la investigación científica o tecnológica marina.

## GRUPOS CON ARG POR PROGRAMA NACIONAL DE CIENCIA Y TECNOLOGIA REGISTRADOS EN GRUPLAC DE COLCIENCIAS



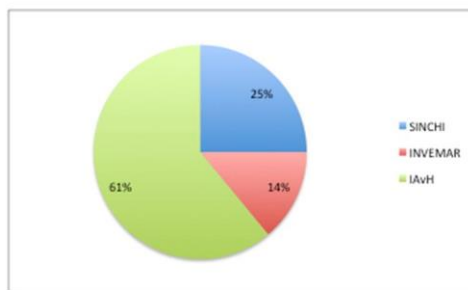
Fuente: Informe Convenio 059 de 2008, Publicado en la Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la decisión andina 391 de 1996. Nemoga G, et al, 2010.

**Especies de trabajo de grupos de investigación registradas en GRUPLAC - Colciencias**



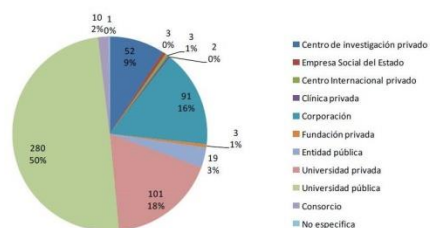
Fuente: Informe Convenio 059 de 2008, Publicado en la Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la decisión andina 391 de 1996. Nemoga G. et. al, 2010.

**Distribución de los proyectos que involucran ARG por parte de algunos institutos (SINA) adscritos al MAVDT**



Fuente: Informe Convenio 059 de 2008, (entre 1999 – 2008) Publicado en la Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la decisión andina 391 de 1996. Nemoga G. et. al, 2010.

**PROYECTOS DE INVESTIGACIÓN QUE NECESITAN CONTRATO DE ARG POR INSTITUCIONES NACIONALES**



Fuente: Informe Convenio 059 de 2008, Publicado en la Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la decisión andina 391 de 1996. Nemoga G. et. al, 2010.

**Diferencias en tiempos de duración por etapas para dos expedientes del MADS (MAVDT)**

Expedientes	Expediente 2812 / 2003	Expediente RGE 29/2007	Diferencia Días
1. Presentación y admisión	849	72	777
1.1. Registro y publicación	299	81	218
2. Aprobación solicitud	299	27	272
3. Negociación y resolución concede CARG	160	38	122
<b>Tiempo TOTAL</b>	<b>1607</b>	<b>218</b>	<b>1389</b>

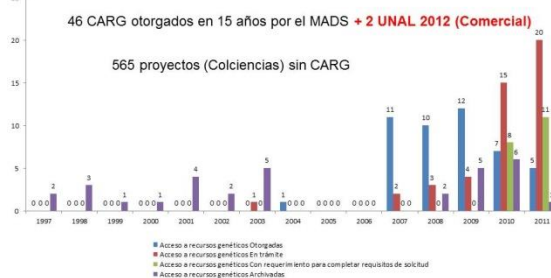
Fuente: Informe Convenio 059 de 2008, Publicado en la Investigación sobre biodiversidad en Colombia. Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados, y a la decisión andina 391 de 1996. Nemoga G. et. al, 2010.

**Promedio días hábiles en expedir un contrato de ARG por Año**



Fuente: Dirección de Licencias, Ministerio de Ambiente y Desarrollo Sostenible, Septiembre de 2011

**Contratos Acceso a Recurso Genético años 1997 a 2011**



Fuente: Dirección de Licencias, Ministerio de Ambiente y Desarrollo Sostenible, Septiembre de 2011

## ¿En donde están los problemas?

- 3. Interpretación de “Acceso” en la Decisión Andina 391 de 1996.

“ACCESO: obtención y utilización de los recursos genéticos conservados en condiciones ex situ e in situ, de sus productos derivados o, de ser el caso, de sus componentes intangibles, con fines de investigación, prospección biológica, conservación, aplicación industrial o aprovechamiento comercial, entre otros.”

- 4. Institución Nacional de Apoyo

“INSTITUCION NACIONAL DE APOYO: persona jurídica nacional, dedicada a la investigación biológica de índole científica o técnica, que acompaña al solicitante y participa junto con él en las actividades de acceso.”

- 1. Tiempo empleado para adquirir CARG 3.5 años, (Sin incluir elaboración del proyecto, evaluación de pares y financiación), incluye tiempo para el permiso de investigación (Decreto 309 de 2000).
- 2. Tiempo en Mininterior para certificar presencia de comunidades étnicas (promedio 6 meses) para poder obtener permiso y CARG.

### 6. Costo de la consulta previa

➤. Primer acercamiento con las comunidades y socialización de los proyectos. (Costo: \$ 5' 000.000)

➤. Información al Ministerio del Interior de los resultados del primer acercamiento, para la coordinación de la Consulta previa. Apertura del proceso (Convocatoria).

➤. Consulta previa

Reunión del Grupo de trabajo: Grupo de consulta previa del Mininterior Delegados del MAVDT, Representantes de los investigadores, Representantes de las comunidades étnicas, Contraloría, Defensoría del Pueblo, Personería y Autoridades locales. (Costo por proyecto en promedio \$15' 000.000)

➤ Proyectos con múltiples Zonas de colectas

PALMAS DE COLOMBIA, 27 comunidades 7 Departamentos. Promedio costos por consulta \$ 15.000.000 costos MAVDT – \$ 5.000.000 viáticos y tiquetes, Total \$ 540.000.000

## Propuestas del Gobierno

Ministerio de Ambiente

Agencia Nacional de Licencias Ambientales - ANLA

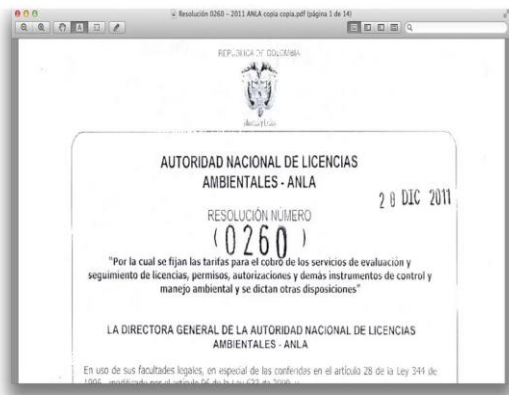
### Propuesta de la CIPI (3 versiones)

“Por el cual se reglamenta el acceso a los recursos genéticos, sus productos derivados, los conocimientos tradicionales asociados y la distribución justa y equitativa de beneficios derivados de su utilización, y se dictan otras disposiciones”

- “Investigación: Trabajo creativo o inventivo llevado a cabo de forma sistemática para incrementar el volumen de conocimientos. Este concepto incluye el desarrollo experimental”
- 2. Mantienen Institución Nacional de apoyo y aumentan responsabilidades
- “Artículo 11. Contrato de acceso con fines de investigación no comercial. El Ministerio de Ambiente y Desarrollo Sostenible podrá celebrar contratos de acceso a recursos genéticos y/o productos derivados, con fines de investigación de acceso a recursos genéticos o productos derivados con personas naturales o jurídicas las cuales deberán contar con el acompañamiento de una Institución Nacional de Apoyo, de las características previstas en el artículo primero de la Decisión Andina 391.”

- 1. Aumento de las definiciones D. 391 (Acceso, Autoridad Nacional Competente, Biotecnología, Centro de conservación ex situ, componente intangible, comunidad indígena, afroamericana o local, condiciones in situ, condiciones ex situ, contrato de acceso, Diversidad biológica, Diversidad genética, Institución Nacional de Apoyo, País de origen genético, Producto derivado, producto sintetizado, Programa de liberación de bienes y servicios, Proveedor del componente intangible, Proveedor del recurso biológico, Recurso genético, Resolución de acceso, Utilización sostenible) (22 definiciones)
- Propuesta CIPI: (Apropiación legal, Bioprospección, Conocimientos tradicionales asociados al recurso genético o producto derivado, Fines comerciales, Investigación, Productor agropecuario y pesquero, utilización no autorizada) (7 definiciones mas)

- “Parágrafo 1. En el caso de los contratos marco con fines de investigación no comercial celebrados con universidades podrá fungir como institución nacional de apoyo la misma universidad que solicita el contrato marco, siempre y cuando según concepto de la Autoridad Nacional Competente cuente con la infraestructura y capacidad necesaria para el cumplimiento de sus responsabilidades como tal, acompañando y apoyando a los investigadores y estudiantes en las actividades de investigación o bioprospección y colaborando con el Ministerio de Ambiente y Desarrollo Sostenible en las actividades de seguimiento y control del cumplimiento las obligaciones que se desprendan del contrato así como velando por el uso adecuado y conforme a la ley y la reglamentación vigentes de los recursos genéticos.”



• **Servicios de seguimiento:**

- a) Permisos, concesiones y autorizaciones.
- b) Permisos de estudios con fines de investigación científica en diversidad biológica.

- b) Gastos de viaje y viáticos: corresponde al valor de los gastos de transporte y viáticos por concepto de visitas requeridas para realizar las labores de evaluación y seguimiento.
- c) Análisis y estudios: corresponde al valor de los análisis de laboratorio u otros trabajos técnicos requeridos para realizar las labores de evaluación y seguimiento.
- d) Gastos de administración: Corresponde al valor que anualmente fijará el Ministerio de Ambiente, por gastos de administración en que incurra la entidad por concepto de servicios de evaluación y seguimiento.

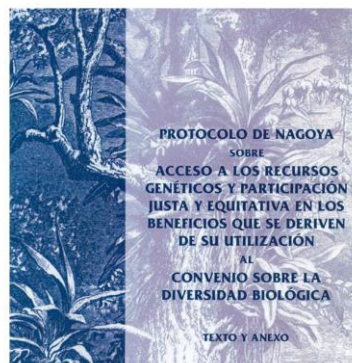
**CAPÍTULO XIII**

**TRÁMITES, PROCEDIMIENTOS Y REGULACIONES DEL SECTOR ADMINISTRATIVO DE AMBIENTE Y DESARROLLO SOSTENIBLE**

**ARTÍCULO 179. ACTIVIDADES DE INVESTIGACIÓN CIENTÍFICA Y TECNOLÓGICA.** La institución de educación superior o centro de investigación y desarrollo tecnológico que se encuentre realizando actividades de investigación científica y tecnológica que requiera de la obtención, uso, transporte y mantenimiento de recursos genéticos o productos derivados, podrá continuar tales actividades, siempre y cuando dentro del año siguiente a la entrada en vigencia de este decreto-ley celebre el respectivo contrato de acceso a los recursos genéticos o productos derivados para investigación científica sin interés comercial con el Ministerio de Ambiente y Desarrollo Sostenible y obtenga la autorización correspondiente.

- **Servicios de Evaluación:**
- a) Autorizaciones para la importación y exportación de especímenes de la diversidad biológica no contempladas en los apéndices de la Convención CITES.
- b) Permisos de estudio con fines de investigación científica en diversidad biológica.
- c) Etc.,

- Los cobros por concepto de los servicios de evaluación y seguimiento ambiental serán utilizados para sufragar los costos en que deba incurrir la ANLA para la prestación de esos servicios, y esta tarifa incluirá:
  - a) Honorarios: que corresponde al valor de los honorarios de los profesionales o contratistas nacionales e internacionales requeridos para realizar las labores de evaluación y seguimiento. Se calculará aplicando los toques máximos de sueldos vigentes fijados por el Ministerio de Transporte, al total de los profesionales –mes o contratistas–mes. Para el cálculo de los honorarios y viáticos de los profesionales internacionales se aplicarán las escalas tarifarias del PNUD.





Artículo 8  
CONSIDERACIONES ESPECIALES

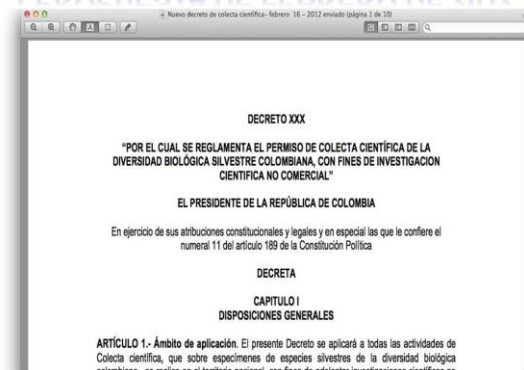
Al elaborar y aplicar su legislación o requisitos reglamentarios sobre acceso y participación en los beneficios, cada Parte:

(a) Creará condiciones para promover y alentar la investigación que contribuya a la conservación y utilización sostenible de la diversidad biológica, particularmente en los países en desarrollo, incluyendo mediante medidas simplificadas de acceso para fines de **investigación de índole no comercial**, teniendo en cuenta la necesidad de abordar el cambio de intención para dicha investigación;

Parece que no será ratificado como  
Ley de la República  
de Colombia

- **PARAGRAFO 1.** El Ministerio de Ambiente, sus entidades científicas adscritas y vinculadas, las Corporaciones Autónomas Regionales y/o de Desarrollo Sostenible y los Grandes Centros Urbanos no requerirán del permiso de colecta del que trata este decreto, lo cual no los exime de suministrar la información acerca del proyecto de investigación científica al Sistema Nacional de Investigación Ambiental.

## 1 PROPUESTA DE FEBRERO DE 2012



- **PARAGRAFO 2.** Los estudios de impacto ambiental, no requerirán del permiso de colecta del que trata este decreto. En caso de recolectar algún material, éste deberá depositarse en colecciones registradas.
- **PARAGRAFO 3.** Las instituciones de educación preescolar, primaria y secundaria, en el marco del cumplimiento de sus funciones educativas, no requerirán del permiso de colecta del que trata este decreto.

## 2 PROPUESTA SEPTIEMBRE DE 2012

Foro U. de los Andes (3 sept)

- PROPUESTA DE DECRETO Dirigido a **Universidades, ONG y Centros de investigación científica**
  - Permisos marco – planes de investigación 5 años.
  - Permisos individuales.
  - Centralizar en la ANLA – CAR'S, Parques corto tiempo vía web.
  - No cobro, salvo seguimiento
  - Taxonomía molecular.

Pero por que hacer Normas EXCLUSIVAMENTE para Universidades, Centros de Investigación y ONG?

Si, Colombia por ser un Estado de Derecho no debería tener normas que cobijen a unas instituciones si y a otras no.

Pero que dice nuestra Constitución Política de Colombia de 1991



- **ARTICULO 27.** El Estado garantiza las libertades de enseñanza, aprendizaje, investigación y cátedra.

**Capítulo 2. De los Derechos sociales, económicos y culturales**

**ARTICULO 69.** Se garantiza la autonomía universitaria. Las universidades podrán darse sus directivas y regirse por sus propios estatutos, de acuerdo con la ley. La ley establecerá un régimen especial para las universidades del Estado.

El Estado fortalecerá la investigación científica en las universidades oficiales y privadas y ofrecerá las condiciones especiales para su desarrollo.

- ARTICULO 71. La búsqueda del conocimiento y la expresión artística son libres. Los planes de desarrollo económico y social incluirán el fomento a las ciencias y, en general, a la cultura. El Estado creará incentivos para personas e instituciones que desarrollen y fomenten la ciencia y la tecnología y las demás manifestaciones culturales y ofrecerá estímulos especiales a personas e instituciones que ejerzan estas actividades.

- **ARTICULO 70.** El Estado tiene el deber de promover y fomentar el acceso a la cultura de todos los colombianos en igualdad de oportunidades, por medio de la educación permanente y la enseñanza científica, técnica, artística y profesional en todas las etapas del proceso de creación de la identidad nacional.
- La cultura en sus diversas manifestaciones es fundamento de la nacionalidad.
- El Estado reconoce la igualdad y dignidad de todas las que conviven en el país.
- El Estado promoverá la investigación, la ciencia, el desarrollo y la difusión de los valores culturales de la Nación.

**Por lo anterior EN COLOMBIA NO SE DEBE SOLICITAR que para poder hacer investigación sobre la Biodiversidad debemos tener las Universidades Permisos y Contratos de Acceso a Recursos Genéticos para proyectos con fines científicos sobre La Biodiversidad**

**Acciones hasta octubre de 2012**

- Reunión Presidencia de la Republica, Abril de 2010.
- 12 reuniones (Ministros de ambiente, Consejo Nacional de Ciencia tecnología e innovación Colciencias, ACOFACIEN, Academia de Ciencias, Mesas de Trabajo Minambiente, etc)
- 2 Foros (U. Tadeo Lozano 2009, U. de los Andes 2012.)
- Cartas Presidente Santos y Ministros (ACOFACIEN, Academia de Ciencias, VRI UNAL, firmada por 1084 investigadores).
- Propuestas de solución a Decretos actuales y borradores



**CIENTÍFICOS. A PUNTO DE RECIBIR LABORATORIO POR CÁRCEL**

El 96 por ciento de los científicos colombianos que trabajan con recursos genéticos investigan fuera del marco legal, debido a trámites oficiales que demoran los procesos, incluso, por años. Una propuesta reglamentaria busca acortar los tiempos y agilizar las investigaciones.



En Colombia

Para desarrollar un **proyecto de investigación** con fines científicos en Biodiversidad:

1. El permiso de investigación se obtiene en 3.5 años y desarrollarlo cuesta \$ 200 millones o más y hay que pagar por actividades de evaluación y seguimiento y si esta en Área de una comunidad étnica hay que hacer consulta previa y en promedio se debe pagar \$ 15 millones por proyecto por comunidad.

Mientras que una **licencia Minera**:

1. Se obtiene en 3 meses, los requisitos son mínimos, no necesita consulta previa.

Como resultado de esto:

En los últimos 15 años se han otorgado 46 contratos de acceso y un equivalente en permisos de investigación mientras que se han firmado más de 9000 licencias mineras.

El concepto que proponemos es el de registro de las Instituciones donde se ejecutan los proyectos de investigación con fines científicos lo que implica que no requerirán de un permiso de colecta ni de un contrato de acceso a recurso genético.

Para el Registro de las Instituciones se deben cumplir con los siguientes requisitos:

- a) Contar con grupos de investigación categorizados en Colciencias
- b) Tener registrados los programas institucionales de investigación ante el Ministerio de Ambiente y Desarrollo Sostenible
- c) Contar con un sistema de información interno de registro y seguimiento de las actividades de investigación.
- d) Las instituciones de educación superior deberán estar acreditadas institucionalmente, ante la autoridad competente para tal fin, o con programas en ciencia básicas con acreditación de alta calidad

• Cuando un investigador encuentre que de su proyecto con fines científicos se pueda derivar un resultado patentable o con fines comerciales, deberá informar inmediatamente al MADS para que se proceda a realizar el respectivo Contrato de Acceso al Recurso Genético.

En el caso de investigadores extranjeros involucrados formalmente en un proyecto que forme parte de los registros de investigación de una institución del país reconocida por el Ministerio quedará amparado por esta y no requerirá permiso. En este caso quien vigila es la institución y su relación con su investigador nacional quien colabora con el investigador extranjero.

• Las instituciones de investigación que no cumplan con los requisitos del punto 1 o aquellos investigadores nacionales e internacionales que no estén asociados a instituciones registradas deberán solicitar los respectivos Permisos de Colecta y Contratos de Acceso al Recurso Genético, ante la autoridad ambiental competente.

Para terminar queremos resaltar los artículos 27, 69, 70 y 71 de la Constitución Política de Colombia de 1991, que indican que el estado garantizara la libertad de investigación, por eso creemos que esta propuesta y nuestra posición pueden contribuir al desarrollo de la Investigación en biodiversidad en Colombia.

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Agosto 22 de 2012

Doctor  
**JUAN MANUEL SANTOS**  
Presidente de la República de Colombia  
Bogotá D.C.

Respetado Señor Presidente

La Comunidad científica y las instituciones que desarrollan investigación sobre Biodiversidad en el país vemos con mucha preocupación las dificultades que estamos encontrando para poder desarrollar proyectos de investigación sobre la Biodiversidad en Colombia por que es necesario tener un permiso de investigación científica. En caso de que la investigación requiera análisis genético, se necesario obtener un contrato de acceso a recursos genéticos (CARG).

Entre 1997 y 2011 el Ministerio de Ambiente y Desarrollo Sostenible MADS, ha otorgado únicamente 46 CARG. Un análisis en el que se revisaron todos los grupos colombianos categorizados ante Colciencias y que hacen investigación en Biodiversidad, muestra que 565 proyectos de investigación que necesitarían tener un permiso y un contrato de acceso no los tienen, simplemente porque el Ministerio de Ambiente se demora en promedio 3.5 años en otorgarlo.

Una vez preparada esta carta, se convocó a los investigadores y representantes de instituciones de investigación que realizan proyectos en Biodiversidad en el país. Producto de esta convocatoria se alcanzó el respaldo de 1084 investigadores pertenecientes a 228 instituciones colombianas, 44 independientes y 74 instituciones del exterior que manifestaron su adhesión a la carta vía electrónica. Se adjunta la lista de estas personas, la institución, identificación, ciudad, cargo y ocupación y el nivel de formación, y se conserva en archivo la identificación de su correo electrónico.

Con todo respeto por el Señor Presidente, manifestamos nuestra disposición para exponer en detalle nuestros argumentos y propuesta para que los investigadores en Colombia, uno de los más ricos en Biodiversidad del planeta, podamos seguir adelantando investigación sobre biodiversidad, así que usted estimarlo conveniente puede fijar una reunión para recibir una comisión de los firmantes.

Bogotá, D.C., Junio 14 de 2012

Ingeniera  
**XIOMARA SANCLEMTE**  
Directora  
Bosques Biodiversidad y Servicios Eco sistémicos  
Ministerio de Ambiente y Desarrollo Sostenible  
E. S. D.

Referencia: artículos borrador decreto "por el cual se reglamenta el permiso de colecta científica de la diversidad biológica silvestre colombiana, con fines de investigación científica no comercial"

Respetada Xiomara,

Una vez analizada la información y realizada la revisión del borrador de decreto de la referencia, llegamos a una propuesta que no implica excepciones al permiso y que puede ser una medida de reconocimiento y estímulo para la investigación (ver gráficos anexos). Esto implicaría que el nombre del decreto cambie a reglamentar la colecta y el permiso sería una opción dentro del decreto.

• Los ejemplares (especímenes) colectados o sus derivados, producto de proyectos de investigación con fines científicos serán depositados en colecciones biológicas debidamente registradas.

• Las Colecciones registradas podrán realizar intercambio de material con otras colecciones nacionales e internacionales sin la necesidad de autorización de exportación o importación del material.

• Los datos de los ejemplares depositados en las colecciones registradas se deberán poner a disposición del público mediante un sistema de información sobre biodiversidad.

Los investigadores extranjeros deberán pertenecer a una institución de investigación de su país de origen, la cual se debe establecer previamente un convenio interinstitucional con una entidad homóloga de Colombia, donde se establezca los compromisos éticos y científicos además el compromiso de del depósito de especímenes en colecciones registradas legalmente.

Cordialmente,

Diana Stella Álvarez  
Pontificia Universidad Javeriana

Luz Mercedes Santamaría  
Consejo Profesional de Biología

Eduardo Flórez  
Socolen

Gonzalo Andrade C.  
Universidad Nacional de Colombia

Santiago Madriñán  
Universidad de los Andes

Miguel Tobar  
Colciencias

Por lo anterior, el pasado mes de abril, se propuso al Ministerio que los proyectos de investigación con fines científicos no requieran de un permiso de investigación ni de un CARG y que cuando como resultado del proyecto se obtenga algo con fines comerciales o patentable se debe proceder a informar a MADS para obtener el CARG. Esto fue acogido por la mesa de trabajo que preside el MADS con una variante, que las instituciones para poder acceder a lo anterior, deben estar registradas ante el MADS cumpliendo unos requisitos (tener grupos de investigación categorizados en Colciencias, tener programas institucionales de investigación registrados en el Ministerio, contar con sistema interno de registro y seguimiento de la investigación y las instituciones de educación superior deberán estar acreditadas institucionalmente), las instituciones que no cumplan lo anterior deberán solicitar el respectivo permiso de investigación y/o contrato de acceso. Pero a la fecha no recibimos ninguna respuesta por parte del Ministerio.

Institución	Nombre y apellido	Identificación	Ciudad	Cargo / Ocupación	Nivel de formación
Asociación Colombiana de Lepidopterología - ACOLEP	Fredy Montero Abril	7978019	Bogotá D.C.	Investigador naturalista	Pregrado
Asociación Colombiana de Lepidopterología - ACOLEP	Juan Francisco La Cruz	79631159	Bogotá D.C.	Presidente	Doctoral
Acaducto Barcelona Quindío	Diego Torres	9778274	Armenia	Químico	Universitaria
Alcalía de Quibdó	Leider Palacios	107742522	Quibdó	Secretario del Medio Ambiente y Desarrollo Comunitario	Biólogo, Magister
Alcalía de Victoria	Kathy Andrea Ospina	3022959	Victoria	Ingeniera Agrónoma	Profesional
Algodoro de Humboldt	Natália Lucia Orozco Serna	3455259	Protección	Docente/Investigador	Especialidad
Ambiofórum I.F. SAS	Libardo Rivas Samartino	19269586	Bogotá D.C.	Gerente	Profesional Especializado
AMF Laboratorio	Lina María Cardona Grisdó	29178262	Calli	Directora Técnica	Profesional
ANADA SAS CI	Aida Palacios	41949396	Bogotá D.C.	Empresaria	UNIVERSITARIA
Antes S.A.	Carolina Maldonado	322237329	Bogotá D.C.	Bióloga	Profesional
Área Metropolitana del Valle de Aburrá	Claudia Hoyos	42878560	Medellín	Profesional Universitario	Profesional
Asociación Bogotana de Ornitología	Marta Echeverry	5235047	Bogotá D.C.	Bióloga / Investigadora	Doctoral
Asociación Bogotana de Ornitología	Sergio Chaves Herrera	8963246	Bogotá D.C.	Licenciado en Biología	Maestría
Asociación Cañón	Luis Fernando Castillo Cortes	16742943	Calli	Biólogo/Director Ejecutivo	Pregrado
Asociación Colombiana de Herpetólogos ACH	Daniela Carolina Lopez	3394339	Medellín	Presidente ACH	Biólogo
Asociación de Beccatos de Casanare	Natalia Andrea Rosa Lopez	52829593	Bogotá D.C.	apropiación de recursos	Pregrado

Mas 1084 firmas mas.

Ministerio de Ambiente y Desarrollo Sostenible  
Bogotá, D.C. 06 de Feb. 2012

Profesor Asociado GONZALO ANDRADE C. y OTROS  
Instituto de Ciencias Naturales  
Universidad Nacional de Colombia  
Carrera 45 No. 28 - 88 Clona 433 Ciudad

Ref: solicitud de permiso de investigación científica y contratos de acceso a recursos genéticos (CAR)

En esta contestación se hace referencia al escrito de solicitud de permiso de investigación científica y contratos de acceso a recursos genéticos y productos derivados.

**PERMISO DE ESTUDIO CON FINES DE INVESTIGACIÓN CIENTÍFICA**  
Decreto 309 de 2000  
El Decreto 309 de 2000 en su artículo 2º establece "PERMISO DE ESTUDIO CON FINES DE INVESTIGACIÓN CIENTÍFICA". Las personas naturales o jurídicas que pretenden adelantar un proyecto de investigación científica en diversidad biológica, recolección, captura, caza, pesca, manipulación del recurso biológico y su movilización en el territorio nacional, deberán obtener permiso de estudio, el cual incluirá todas las actividades que se realicen en el territorio nacional.

La Decisión Andra 301 de 1996, que reglamenta el tema de acceso a recursos genéticos, es una norma de carácter separador que establece en su artículo 1º, que la autoridad nacional competente en materia de acceso a recursos genéticos es el Ministerio de Ambiente y Desarrollo Sostenible, en el caso de Colombia, y el Ministerio de Recursos Naturales Renovables y Protección al Medio Ambiente, en el caso de Ecuador, Bolivia, Perú y Colombia, en relación con sus respectivos Comités Constitucionales de Promoción y Manejo Sostenible.

Las normas expeditorias designan efectos especiales y directos sobre los miembros del trabajo de investigación, que no se derivan del control de los derechos de propiedad intelectual. Por una parte, estas normas establecen el deber de proteger los derechos de propiedad intelectual y, por otra parte, establecen el deber de proteger los derechos de propiedad intelectual y, por otra parte, establecen el deber de proteger los derechos de propiedad intelectual.

8000-2-47011  
Ministerio de Ambiente y Desarrollo Sostenible  
Departamento de Medio Ambiente  
Bogotá, D.C.

En esta contestación se hace referencia al escrito de solicitud de permiso de investigación científica y contratos de acceso a recursos genéticos y productos derivados.

**CONTRATOS DE ACCESO A RECURSOS GENÉTICOS**  
Decisión Andra 301 de 1996  
La Decisión Andra 301 de 1996 en su artículo 1º, define los contratos de acceso genético como "CONTRATO DE ACCESO A RECURSOS GENÉTICOS". Este contrato es un acuerdo por el cual la autoridad nacional competente en materia de acceso a recursos genéticos, otorga a una persona natural o jurídica el acceso a los recursos genéticos que se encuentran en el territorio nacional, para que esta persona realice un proyecto de investigación científica en diversidad biológica, recolección, captura, caza, pesca, manipulación del recurso biológico y su movilización en el territorio nacional.

La Decisión Andra 301 de 1996, que reglamenta el tema de acceso a recursos genéticos, es una norma de carácter separador que establece en su artículo 1º, que la autoridad nacional competente en materia de acceso a recursos genéticos es el Ministerio de Ambiente y Desarrollo Sostenible, en el caso de Colombia, y el Ministerio de Recursos Naturales Renovables y Protección al Medio Ambiente, en el caso de Ecuador, Bolivia, Perú y Colombia, en relación con sus respectivos Comités Constitucionales de Promoción y Manejo Sostenible.

Las normas expeditorias designan efectos especiales y directos sobre los miembros del trabajo de investigación, que no se derivan del control de los derechos de propiedad intelectual. Por una parte, estas normas establecen el deber de proteger los derechos de propiedad intelectual y, por otra parte, establecen el deber de proteger los derechos de propiedad intelectual.

Yo, Carlos Andrés Torres, Director de Medio Ambiente, doy fe de lo anterior.

Presidencia de la República  
Secretaría Privada  
Bogotá, D.C. 06 de febrero de 2012

OFI12-00088727 / JMSC 33010

Bogotá D.C. septiembre 11 de 2012

Ref: Realizado No EXT12-00073919

Doctor ANDRADE:  
En concordancia con el artículo 20 del Código Contencioso Administrativo y la Constitución Política, de manera atenta le permito informarle sobre el trámite de su solicitud de permiso de investigación científica y contratos de acceso a recursos genéticos (CAR).

De igual manera, reitero la justicia ambiental y las principios e inventarios establecidos por el Decreto Ley 175 de 2012 y/o el cual se dictan normas para regular el reformar regulaciones, procedimientos y formas de gestión de la Administración Pública y el artículo 175 del mismo Decreto, esta Corporación adelantará una reunión con las entidades competentes, en la que se buscará reducir el grado de duplicación de esfuerzos en el desarrollo de los proyectos de investigación, que no permitan establecer mecanismos de eficiencia que conduzcan a la racionalización y al mejoramiento.

Con tal saludo:  
CARMINA BERROCAL GUERRERO  
Asesora Secretarías Privada

Presidencia de la República  
Alta Corporación Presidencial para el Buen Gobierno  
y la Eficiencia Administrativa  
República de Colombia  
Bogotá, D.C. 20 de septiembre de 2012

OFI12-0012009 / JMSC 31000

Bogotá D.C. junio 20 de septiembre de 2012

Doctor GONZALO ANDRADE  
Profesor Asociado  
Instituto de Ciencias Naturales  
Universidad Nacional de Colombia  
Carrera 45 No. 28 - 88 Bogotá, D.C.

Ref: Realizado No EXT12-00073919

De igual manera, reitero la justicia ambiental y las principios e inventarios establecidos por el Decreto Ley 175 de 2012 y/o el cual se dictan normas para regular el reformar regulaciones, procedimientos y formas de gestión de la Administración Pública y el artículo 175 del mismo Decreto, esta Corporación adelantará una reunión con las entidades competentes, en la que se buscará reducir el grado de duplicación de esfuerzos en el desarrollo de los proyectos de investigación, que no permitan establecer mecanismos de eficiencia que conduzcan a la racionalización y al mejoramiento.

Con tal saludo:  
MARCIA OLIVERA BARRERA  
Alta Corporación Presidencial para el Buen Gobierno y la Eficiencia Administrativa

Ministerio de Ambiente y Desarrollo Sostenible  
Bogotá, D.C., 17 de octubre de 2012

Señor Gonzalo Andrade C.  
Profesor Asociado  
Instituto de Ciencias Naturales  
Universidad Nacional de Colombia  
Carrera 45 No. 28-88 Bogotá.

Ref: solicitud memorial dirigido al Señor Presidente Juan Manuel Santos y Señal Ref:

Comodoro de su gran gestión como investigador y miembro de la academia Colombiana de Ciencias Exactas, la entidad recibe con beneplácito la solicitud y el compromiso del personal que los trabaja, en un momento decisivo en la historia de la humanidad, en el que la ciencia y la tecnología juegan un papel fundamental para el desarrollo de la humanidad y el bienestar de la especie.

De conformidad con los artículos 18 y 21 de la ley 1437 de 2011 (Nuevo Código Contencioso Administrativo), le permito dar respuesta a su solicitud formulada a la Presidencia de la República en memoria fechada agosto 22 de la actualidad y vía Twitter del día de septiembre. La cual no fue permitida por la doctora CARMINA BERROCAL GUERRERO, Asesora de la secretaria privada, mediante oficio con número de radicación OFI 12-00088727/ JMSC 33010 y OFI 12-0010499/JMSC 33010, a los cuales me permito manifestarle que a pesar que el personal del Departamento Administrativo de Ciencia Tecnología e Innovación (CODICENAS), todo lo concerniente a investigaciones con fines científicos, gozaban de los permisos para desarrollar el tema respecto de biodiversidad, es un asunto de competencia exclusiva al Ministerio de Medio Ambiente y Desarrollo Sostenible.

8000-2-47011  
Ministerio de Ambiente y Desarrollo Sostenible  
Departamento de Medio Ambiente  
Bogotá, D.C.

Por lo anterior agradezco por tener en contacto con esta entidad para recibir una respuesta oportuna, teniendo en cuenta de que la petición también va fue enviada al Ministerio mencionado para el trámite gubernativo.

Se embarga la problemática ha sido puesta en conocimiento a la entidad, y considero la petición que plantea un trámite expedito que haga conocer en la situación que en nada contribuye con el impulso investigativo y científico de la comunidad científica nacional.

Yo, Juan Fernando Barral Feltes, Secretario General II

8000-2-47011  
Ministerio de Ambiente y Desarrollo Sostenible  
Departamento de Medio Ambiente  
Bogotá, D.C.

En esta contestación se hace referencia al escrito de solicitud de permiso de investigación científica y contratos de acceso a recursos genéticos y productos derivados.

**CONTRATOS DE ACCESO A RECURSOS GENÉTICOS**  
Decisión Andra 301 de 1996  
La Decisión Andra 301 de 1996 en su artículo 1º, define los contratos de acceso genético como "CONTRATO DE ACCESO A RECURSOS GENÉTICOS". Este contrato es un acuerdo por el cual la autoridad nacional competente en materia de acceso a recursos genéticos, otorga a una persona natural o jurídica el acceso a los recursos genéticos que se encuentran en el territorio nacional, para que esta persona realice un proyecto de investigación científica en diversidad biológica, recolección, captura, caza, pesca, manipulación del recurso biológico y su movilización en el territorio nacional.

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Yo, Juan Gabriel Urbibe, Ministro de Ambiente y Desarrollo Sostenible

Presidencia de la República  
Alta Corporación Presidencial para el Buen Gobierno  
y la Eficiencia Administrativa  
República de Colombia  
Bogotá, D.C. 20 de septiembre de 2012

OFI12-0012009 / JMSC 31000

Bogotá D.C. junio 20 de septiembre de 2012

Doctor GONZALO ANDRADE  
Profesor Asociado  
Instituto de Ciencias Naturales  
Universidad Nacional de Colombia  
Carrera 45 No. 28 - 88 Bogotá, D.C.

Ref: Realizado No EXT12-00073919

De igual manera, reitero la justicia ambiental y las principios e inventarios establecidos por el Decreto Ley 175 de 2012 y/o el cual se dictan normas para regular el reformar regulaciones, procedimientos y formas de gestión de la Administración Pública y el artículo 175 del mismo Decreto, esta Corporación adelantará una reunión con las entidades competentes, en la que se buscará reducir el grado de duplicación de esfuerzos en el desarrollo de los proyectos de investigación, que no permitan establecer mecanismos de eficiencia que conduzcan a la racionalización y al mejoramiento.

Con tal saludo:  
MARCIA OLIVERA BARRERA  
Alta Corporación Presidencial para el Buen Gobierno y la Eficiencia Administrativa

**PROYECTO DE LEY No. 2012 CAMARA.**  
**"POR EL CUAL SE EXPIDE EL CODIGO DE LOS RECURSOS NATURALES Y AMBIENTALES DE COLOMBIA".**

"El Congreso De Colombia, DECRETA"

**EXPOSICIÓN DE MOTIVOS**

"La humanidad se encuentra en un momento decisivo de la historia. Nos enfrentamos con la perpetuación de las disparidades entre las naciones y dentro de las naciones, con el agravamiento de la pobreza, el hambre, las enfermedades y el analfabetismo y con el continuo empeoramiento de los ecosistemas de los que depende nuestro bienestar. No obstante, si se integran las preocupaciones relativas al medio ambiente y al desarrollo y si se presta más atención, se podrán satisfacer las necesidades básicas, elevar el nivel de vida de todos, conseguir una mejor protección y gestión de los ecosistemas y lograr un futuro más seguro y más próspero. Ninguna nación puede alcanzar estos objetivos por sí sola, pero todos juntos podemos hacerlo en una asociación mundial para un desarrollo sostenible".

• No, obstante, si hay voluntad política del Señor Ministro de Ambiente, se podría aprovechar la propuesta de modificación del Código de Recursos Naturales radicada en cámara (PROYECTO DE LEY No. 2012) para realizar los cambios necesarios.

**Artículo 205. Permiso de estudio con fines de investigación científica.** Las personas naturales o jurídicas que pretendan adelantar un proyecto de investigación científica en diversidad biológica que involucre alguna o todas las actividades de recolección, captura, caza, pesca, manipulación del recurso biológico y movilización en el territorio nacional, deberán obtener permiso de estudio, el cual incluirá todas las actividades solicitadas.

**Parágrafo 1.** Toda investigación que se realice sobre recursos hidrobiológicos requerirá permiso de investigación científica sobre diversidad biológica expedido por la autoridad ambiental competente.

**Parágrafo 2.** No requiere permiso de investigación científica sobre diversidad biológica:

- La Autoridad Ambiental, las entidades científicas adscritas y vinculadas, y las instituciones ambientales no requerirán del permiso de estudio para adelantar actividades de investigación científica sobre diversidad biológica a que se refiere el presente Código, lo cual no les exige de suministrar la información acerca del proyecto de investigación científica al Sistema Nacional de Investigación Ambiental. Cualquier queja o denuncia será tramitada por la autoridad ambiental en el orden jerárquico superior.
- Las investigaciones que no involucren actividades de recolección, captura, caza, pesca o manipulación del recurso biológico dentro de su proyecto de investigación científica.
- Las colecciones biológicas registradas no requerirán permiso de investigación científica para el desarrollo de actividades de manipulación de los especímenes depositados en ellas, siempre y cuando no impliquen proyectos de investigación científica. No obstante la movilización deberá cumplir con lo dispuesto en la norma específica para tal fin.

Lo anterior, sin perjuicio de la obligación de suministrar información acerca de su proyecto de investigación científica a la autoridad ambiental con jurisdicción en el área de estudio, con el fin de alimentar el Sistema Nacional de Investigación Ambiental

PROYECTO DE LEY No. \_\_\_\_\_ 2012 CÁMARA.  
 "POR EL CUAL SE EXPIDE EL CÓDIGO DE LOS RECURSOS NATURALES Y AMBIENTALES DE COLOMBIA".

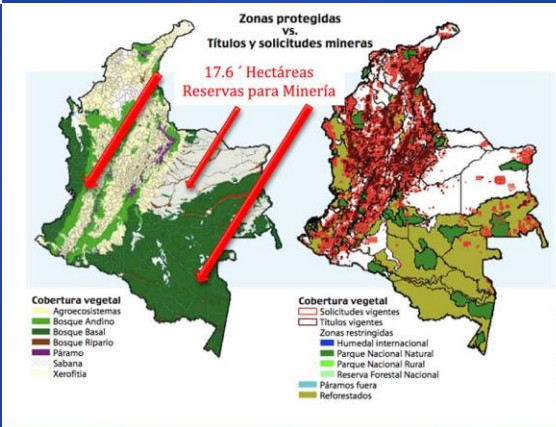
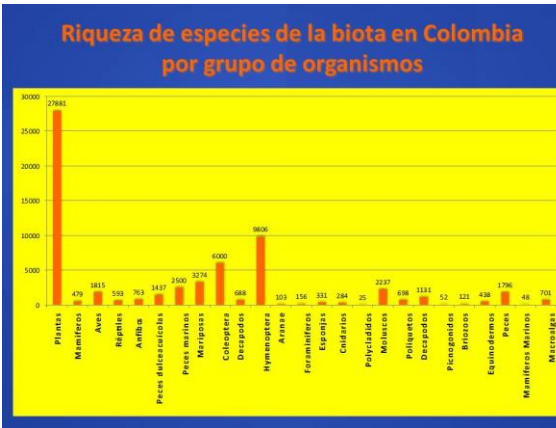
**Sección 3. De la caza científica**

**Artículo 785.** Se entiende por caza con fines científicos la acción de capturar animales silvestres para la investigación científica, la enseñanza en los centros educacionales y la exhibición como medio de instrucción y recreación públicas en los lugares autorizados al efecto.

**Artículo 786.** La caza científica sólo se puede permitir para investigaciones o estudios que se realicen en el país, por tanto no podrán sacarse de éste los individuos, especímenes o productos que se obtengan en ejercicio de esta actividad y al término del permiso de estudio deberán ser entregados a la entidad administradora, quien decidirá lo relativo a su destinación.

Cuando se requiera por entidades científicas extranjeras de reconocida personería internacional adelantar investigaciones sobre individuos, especímenes o productos de la fauna silvestre, éstos no podrán sacarse del país sino cuando hayan sido obtenidos en ejercicio de un permiso de caza especial para fines exclusivamente científicos o en zoológicos.

**Artículo 791.** Las licencias individuales para la caza de animales silvestres o recolección de sus productos con fines científicos, causarán un derecho que la Autoridad Ambiental fijará entre uno (1) y cien (100) salarios mínimos legales mensuales vigentes, por cada permiso o licencia que se autorice.



**Conclusión**

- Al no poder hacer investigación sobre biodiversidad desde el sector académico en donde se está produciendo más del 68% de la investigación en este campo del conocimiento, y Colombia como país megadiverso y en vías de desarrollo, está perdiendo una de las herramientas más eficientes para erradicar la pobreza y construir un futuro próspero y sostenible, ya que si se basara en el conocimiento y valoración de su riqueza natural y cultural y promoviera la investigación, el desarrollo tecnológico e innovación en temas como el conocimiento de la Biodiversidad para poder fortalecer el biocomercio en Colombia, se lograría articular la academia, el sector público y el privado para incentivar la participación activa y el trabajo de innovación liderado por los investigadores, centros de investigación y universidades, para lograr impulsar la ventaja comparativa en biodiversidad del país hacia una ventaja competitiva.

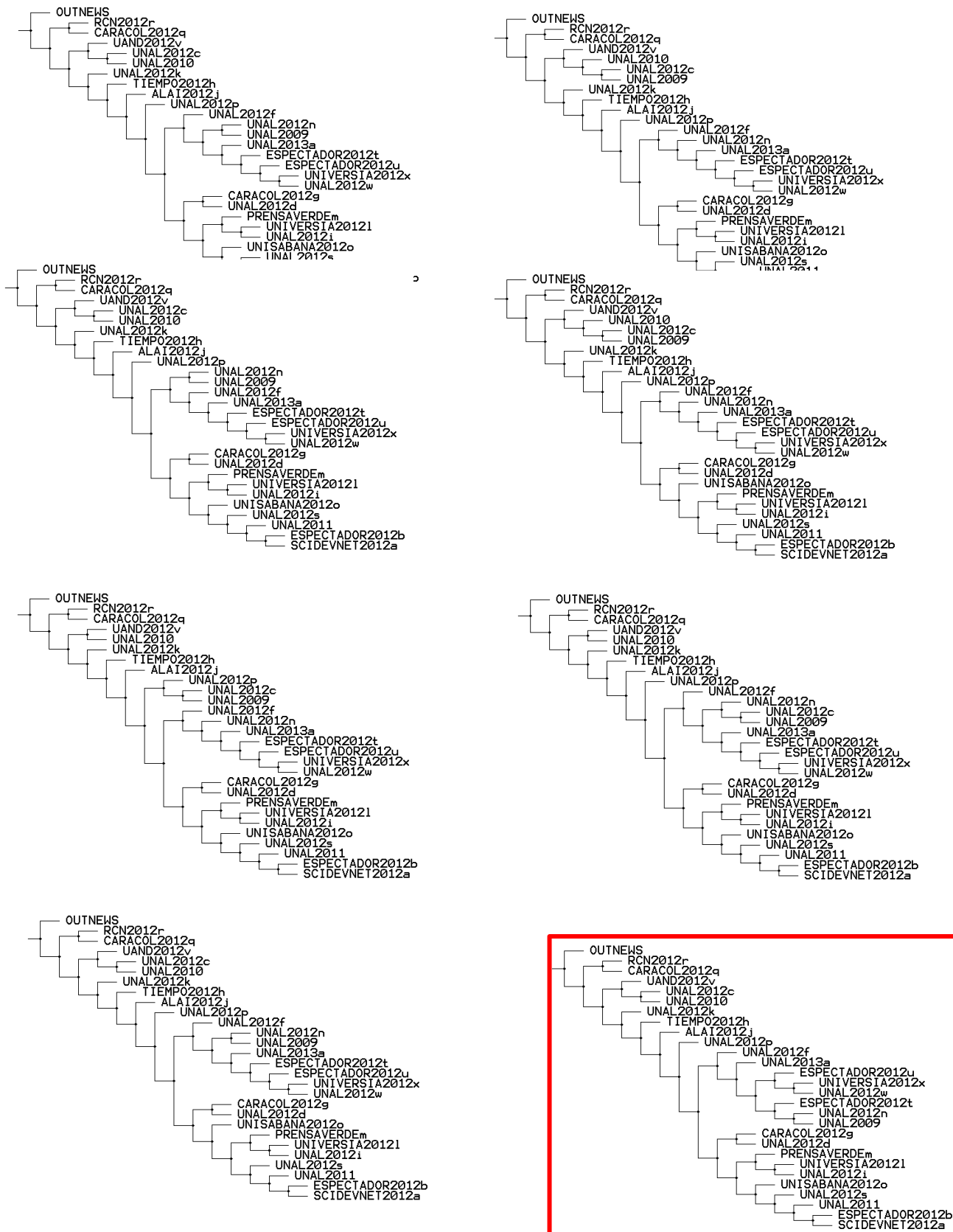


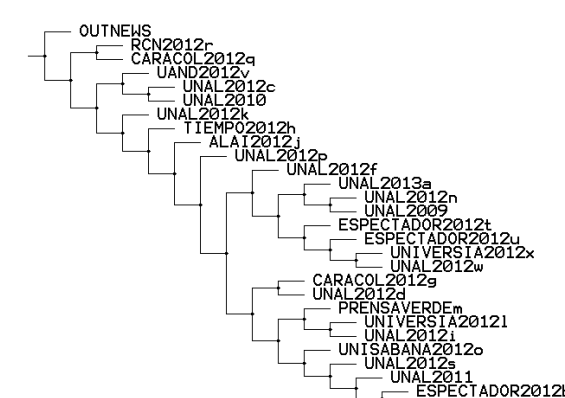
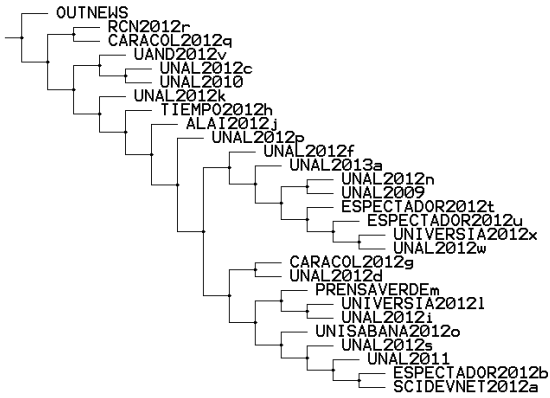
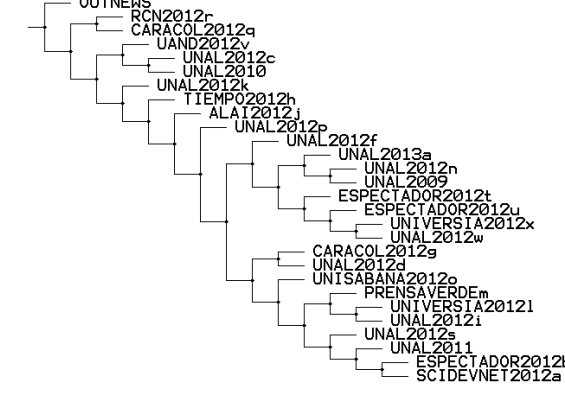
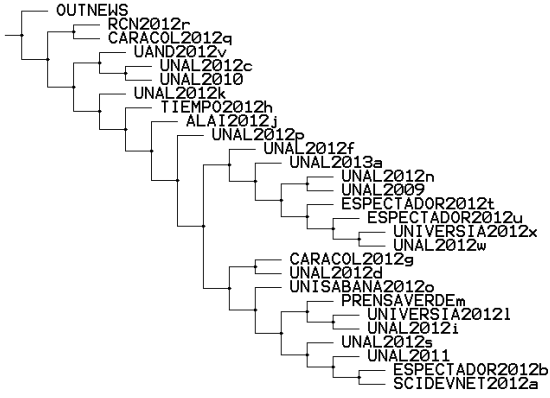
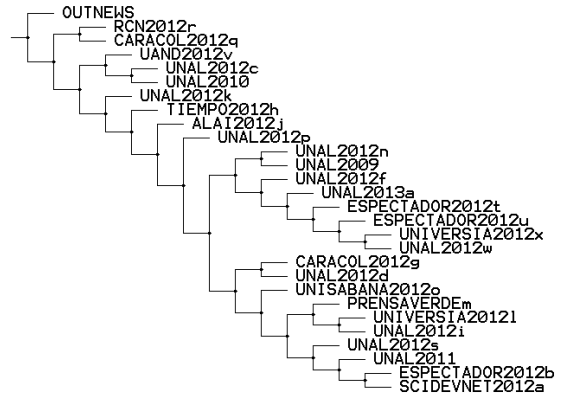
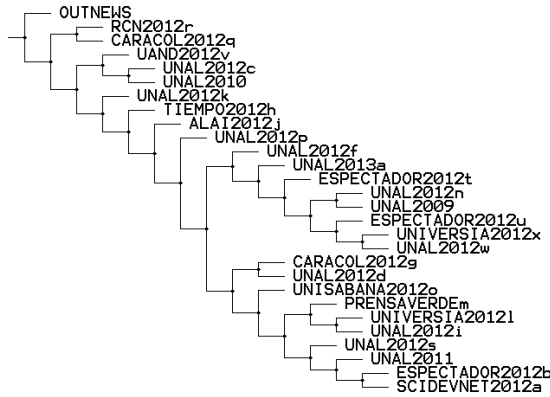
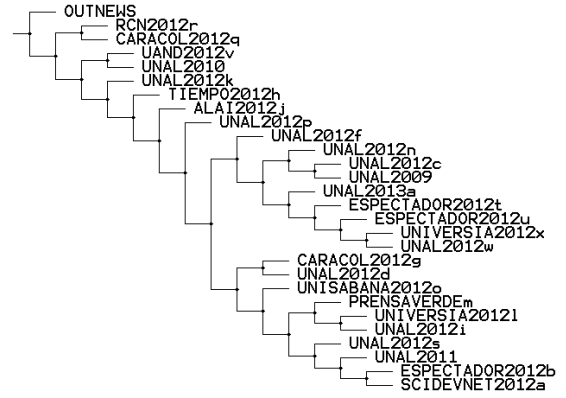
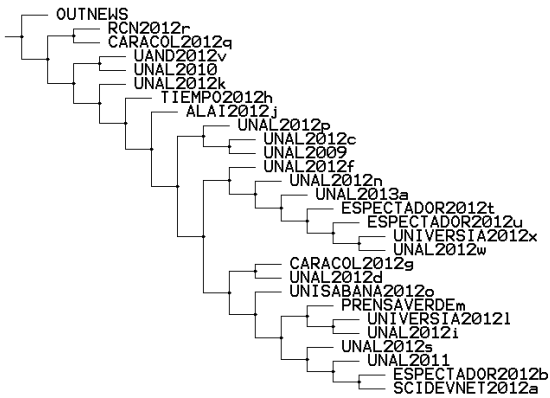
UNIVERSIDAD NACIONAL DE COLOMBIA

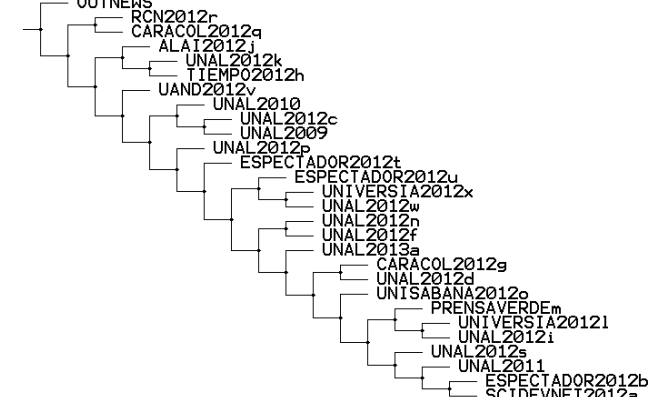
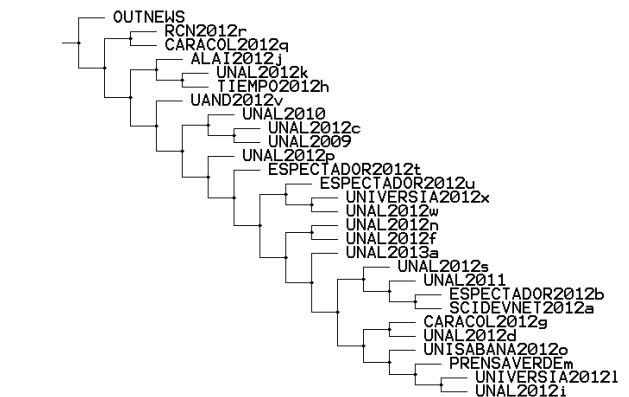
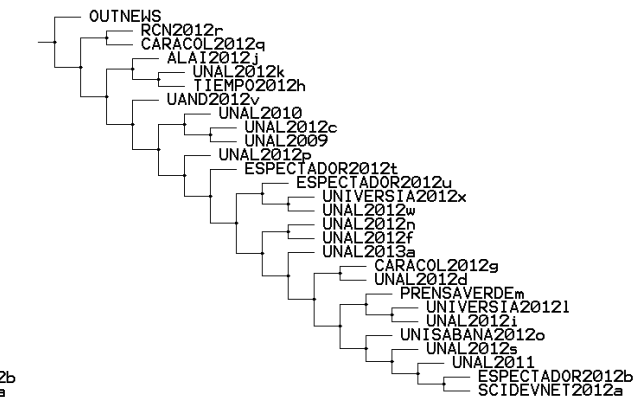
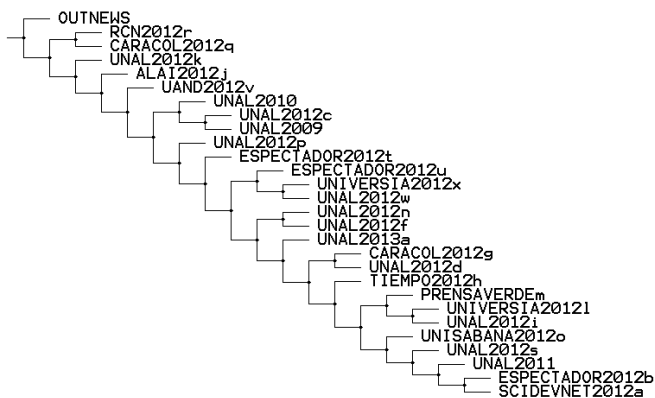
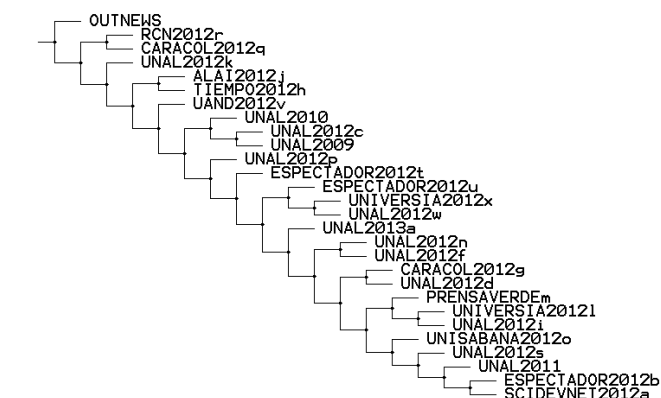
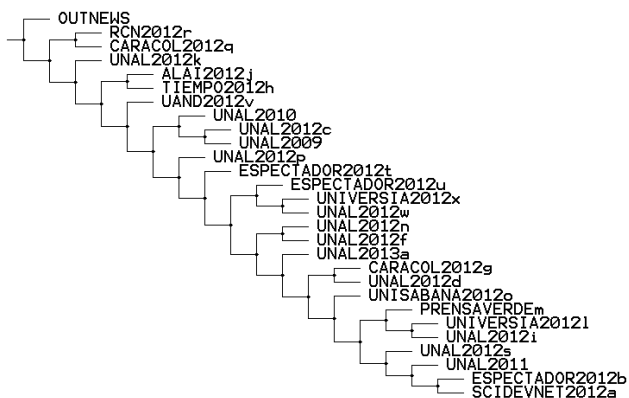
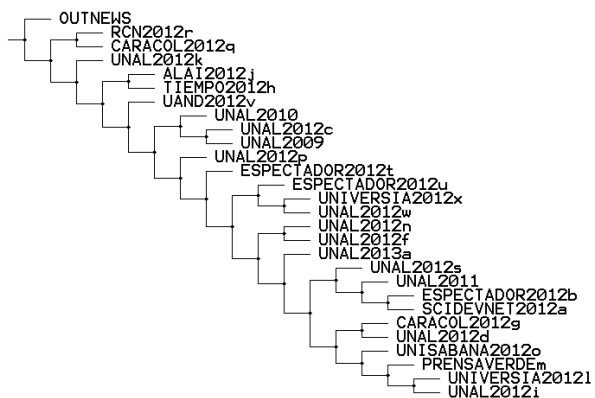
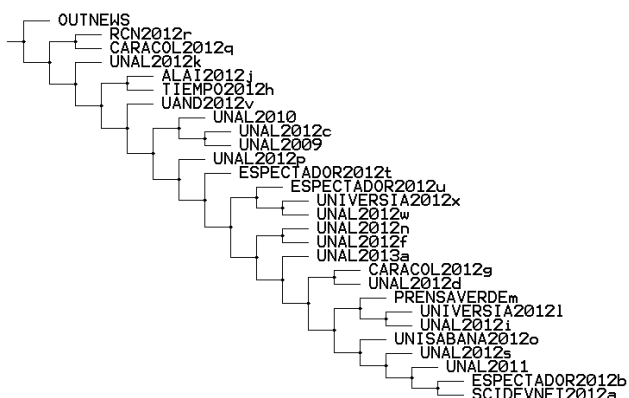


GRACIAS POR SU ATENCION

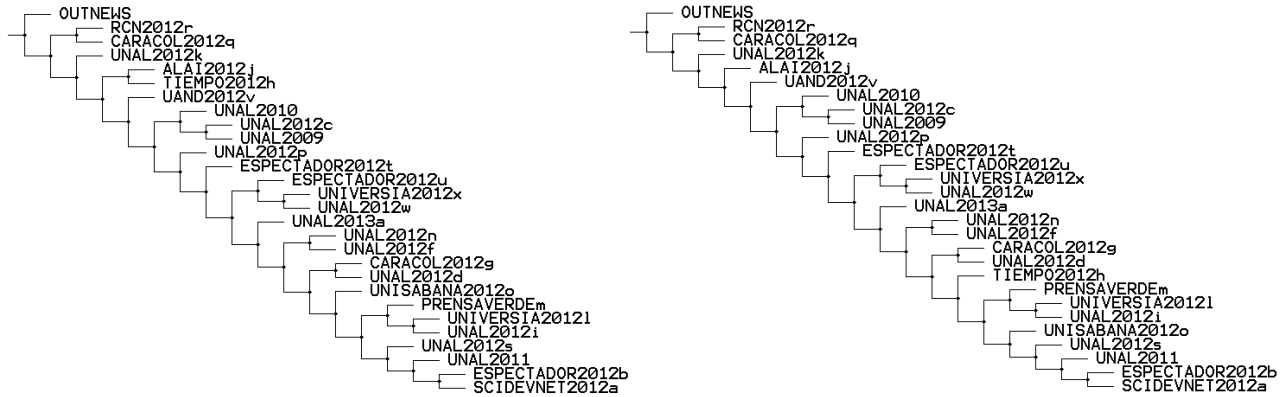
## J. Annexes: A Forest. Trees generated by TNT software. The 27 most parsimonious and consensus tree.





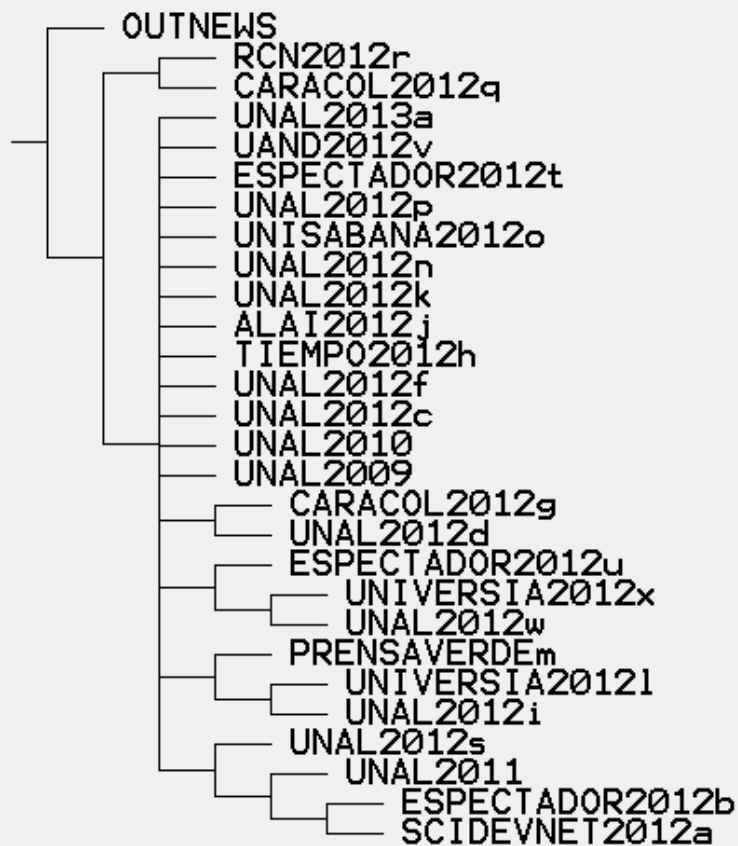






## Consensus tree

Strict consensus of 26 trees (0 taxa excluded)



## **K. Annexes: Multimedia Specimens (On CD)**

## Bibliography

- Agencia de noticias UN a. (2 de Julio de 2013). Decretan permiso de recolección de diversidad biológica por diez años. *Agencia de noticias UN*.
- Agencia de noticias UN b. (31 de Mayo de 2012). Biólogos de la UN retenidos por investigar. *Agencia de noticias UN*.
- Agencia de noticias UN b. (26 de Julio de 2013). Nueva reglamentación de permisos y colecciones biológicas. *Agencia de noticias UN*.
- Agencia de Noticias UN c. (9 de Octubre de 2013). UN avanza en protocolo para recolecta de especímenes en el país. *Agencia de Noticias UN*.
- Ashmore, M., & Reed, D. (2000). Innocence and Nostalgia in Conversation Analysis: The Dynamic Relations of Tape and Transcript. *Qualitative Social Research, 1*(3).
- Bello, J., Báez, M., Gómez, M., Orrego, O., & Nägele, L. (. (2014). *Biodiversidad 2014. Estado y tendencias de la biodiversidad continental de Colombia*. Bogotá D. C.: Instituto Alexander von Humboldt.
- Bensaude-Vincent, B. (2009). A Historical Perspective on Science and its "Others". *Isis, 100*(2), 1-10.
- Boletín UN Investiga. (20 de Noviembre de 2013). Radicada solicitud permiso marco de recolecta ante la ANLA. *Boletín UN Investiga*.
- Botnariuc, N., & Jahn, I. (1990). La Biología en la época del renacimiento y del capitalismo manufacturero. En *Historia de la Biología: Teorías, métodos, instituciones y biografías breves*. . Barcelona: Labor S. A. .
- Breckenridge, A. (2014). *Why regulatory science matters*. Obtenido de British Pharmacological Society Youtube Channel: <https://www.youtube.com/watch?v=NA10jziWjlk>
- Callon, M. (1986). Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St. Brieuç Bay. En J. Law, & J. Law (Ed.), *Power, Action and Belief: A New Sociology of Knowledge?* (págs. 196-233). London: Routledge and Kegan Paul. .

- Callon, M., Lascoumes, P., & Barthe, Y. (2004). *Acting in an Uncertain World: An Essay on Technical Democracy*. London: The MIT Press.
- Castro-Gómez, S. (2013). La historia natural en el orden epistémico y tecnopolítico del saber. En O. (. Restrepo, *Ensamblando estados* (págs. 101-109). Bogotá: Universidad Nacional de Colombia.
- CIRS. (11 de February de 2015). *CIRS-Center for Information in Regulatory Science*. Obtenido de History of CIRS: <http://cirsci.org/history>
- Collins, H., & Pinch, T. (1993). *The Golem: what everybody should know about Science*. Cambridge: Cambridge University Press.
- Correa, M. (2005). Departamento de Biología, su memoria histórica. *Acta Biológica Colombiana*, 10(1), 45-66.
- Correa, P. (4 de Enero de 2012). Científicos en la ilegalidad. *El Espectador* .
- Cotterill, F. P. (1995). Systematics, biological knowledge and environmental conservation. *Biodiversity and Conservation*(4), 183-205.
- Cuervo, A. M., Cadena, C. D., & Parra, J. L. (2006). Seguir colectando aves en Colombia es imprescindible: Un llamado a fortalecer las colecciones ornitológicas. *Ornitología Colombiana*(4), 51-58.
- Díaz-Piedrahita, S. (1999). La Escuela de Ciencias Naturales de la Universidad Nacional de Colombia (1867-1902). *Rev. Acad. Colomb. Cienc.*, 23(Suplemento especial), 513-525.
- Fahnestock, J. (1997). Arguing in different forums: the Bering Crossover Controversy. En R. A. Harris, & N. J. Mahwah, *Landmarck Essays on Rhetoric of Science: Case Studies* (págs. 53-67). Hermagoras Press.
- FDA. (October de 2010). *Advancing Regulatory Science for Public Health*. Obtenido de U.S. Food and Drug Administration: <http://www.fda.gov/downloads/ScienceResearch/SpecialTopics/RegulatoryScience/UCM228444.pdf>
- Fleck, L. (1979). *Genesis and development of a scientific fact*. Chicago: University of Chicago Press.
- Foucault, M. (1994). *The Order of Things: An Archeology of the Human Sciences*. New York: Vintage Books.

- Gieryn, T. F. (2002). Three Truth-Spots. *Journal of History of the Behavioral Sciences*, 38(2), 113–132.
- Gieryn, T. F., Bevins, G. M., & Zehr, S. C. (1985). Professionalization of American Scientists: Public Science in the Creation/ Evolution Trials. *American Sociological Review*, 50(3), 392-409.
- Gómez Mejía, A. (22 de Enero de 2013). *Comunicado número 01: Vicerrectoría de investigación y extensión*.
- Gropp, R. (2004). Expanding Access to Natural History Collections. *BioScience*, 54(5), 392.
- ICN. (2014). *Colecciones científicas*. Recuperado el 09 de 10 de 2014, de Instituto de Ciencias Naturales:  
<http://www.icn.unal.edu.co/?itpad=1223&niv=1&itact=1223&ti=true&dep=6>
- Irwin, A., Rothstein, H., Yearley, S., & McCarthy, E. (1997). Regulatory Science: Towards a Sociological framework. *Futures*, 29(1), 17-31.
- Jasanoff, S. (2011). Momentos constitucionales en el gobierno de la ciencia y la tecnología. En T. Pérez, & M. (. Lozano, *Ciencia, Tecnología y Democracia: Reflexiones en torno a la apropiación social del conocimiento* (págs. 17-32). Medellín: Colciencia, Universidad EAFIT.
- Jasanoff, S. (2011). The practices of objectivity in Regulatory Science. En C. Camic, N. Gross, & M. (. Lamont, *Social Knowledge in the Making* (págs. 307-338). Chicago, London: The University of Chicago Press.
- Kreilkamp, K. (1973). Towards a Theory of Science Policy. *Science Studies*, 3(1), 3-29.
- Kurihara, & Saio. (2011). What is the Regulatory Science? Concept and History in United States and Japan. *Clinical Evaluation*, 39(1), 167-180.
- Latour, B. (1983). Give Me a Laboratory and I will Raise the World. En K. K.-C. (eds.), *Science Observed: Perspectives on the Social Study of Science* (págs. 141-170). Londres: Sage.
- Latour, B. (2008). *Reensamblar lo social: Una introducción a la teoría del actor-red*. Buenos Aires: Manantial.
- Latour, B., & Woolgar, S. (1979). *Laboratory Life. The Construction of Scientific Facts*. London: Sage.

- Lemaitre, R. (2002). Biodiversidad: Una historia natural. *Revista La Tadeo*(67), 55-64.
- Ludwig, D., Mangel, M., & Haddad, B. (2001). Ecology, Conservation, and Public Policy. *Annual Review of Ecology and Systematics*, 32, 481-517.
- Macfarlane, A. (2003). Underlying Yucca Mountain: The Interplay of Geology and Policy in Nuclear Waste Disposal. *Social Studies of Science*, 33(5), 783-807.
- Mantilla-Meluk, & Baker, R. (2010). New Species of Anoura (Chiroptera: Phyllostomidae) from Colombia, with Systematic Remarks and Notes on the Distribution of the A. geoffroyi Complex. *Occasional Papers, Museum of Texas Tech University*(292), 1-24.
- Mulkay, M. (1985). *The Word and the World: Explorations in the Form of Sociological Analysis*. London: George Allen & Unwin.
- Mulkay, M. (1993). Retórica y control social en el gran debate sobre los embriones. *Política y Sociedad*, 143-153.
- Murphy, J., Levidow, L., & Carr, S. (2006). Regulatory Standards for Environmental Risks: Understanding the US-European Union Conflict over Genetically Modified Crops. *Social Studies of Science*, 36(1), 133-160.
- Nieto Olarte, M. (2000). *Remedios para el Imperio: historia natural y apropiación del Nuevo Mundo*. Bogotá: Instituto Colombiano de Antropología e Historia.
- Patiño Guzmán, C. (8 de Noviembre de 2009). Científicos, a punto de recibir laboratorio por cárcel. *UN Periódico*.
- Pinch, T. (1993). La retórica y la controversia sobre la fusión fría: del Woodstock químico al altamont físico. *Política y Sociedad*, 155-170.
- Placencia, M. (1997). Opening up closings—the Ecuadorian way. *Text*, 17(1), 53-81.
- ProAves. (2015). *ProAves*. Obtenido de 9 new bird species for Colombia: [http://www.proaves.org/9-new-bird-species-for-colombia/?lang=en&option=com\\_content&view=article&id=1917%3AAno-17-aves-de-colombia-2012&catid=40](http://www.proaves.org/9-new-bird-species-for-colombia/?lang=en&option=com_content&view=article&id=1917%3AAno-17-aves-de-colombia-2012&catid=40)
- Quintero, C. (2012). *Birds of Empire, Birds of Nation*.
- Redacción Vivir: El Espectador. (2 de Julio de 2013). Menos trámites para investigar en Colombia. *El Espectador*.
- Rickett, H. W. (1958). So What is a taxon? *Taxon*, 7(2), 37-38.

- Rothstein, H., Irwin, A., Yearley, S., & McCarthy, E. (1999). Regulatory Science, Europeanization., *Science, Technology, & Human Values*, 24(2), 241-264.
- Rykiel, E. J. (2001). Scientific Objectivity, Value Systems, and Policymaking. *BioScience*, 51(6), 433-436.
- Schmandt, J. (1984). Regulation and Science. *Science, Technology, & Human Values*, 9(1), 23-38.
- Shapin, S. (1984). Pump and Circumstance: Robert Boyle's Literary Technology. *Social Studies of Science*(14), 481-520.
- Simmons, J., & Muñoz-Saba, Y. (2005). *Cuidado, manejo y conservación de las colecciones biológicas*. Bogotá D.C.: Universidad Nacional de Colombia.
- Soacha, K., & Orrego, O. (2014). Colecciones biológicas. En J. Bello, M. Báez, M. Gómez, O. Orrego, & L. (. Nägele, *BioDiversidad 2014. Estado y tendencias de la biodiversidad continental de Colombia*. Bogotá: Instituto Alexander von Humboldt.
- Suárez, A. V., & Tsutsui, N. D. (2004). The Value of Museum Collections for Research and Society. *BioScience*, 54(1), 66-74.
- Tomkin, J. (05 de 02 de 2015). *Coursera.org*. Obtenido de Introduction to Sustainability : <https://class.coursera.org>
- Turner, R. (2001). On Telling Regulatory Tales: rBST Comes to Canada. *Social Studies of Science*, 31(4), 475-506.
- UN Análisis. (25 de Julio de 2013). Decretos para permisos y colecciones biológicas. Bogotá.
- Universidad de Antioquia. (2012). *Investigación: Universidad de Antioquia*. Recuperado el Noviembre de 2013, de [http://www.udea.edu.co/portal/page/portal/bActualidad/Principal\\_UdeA/Investigaci%C3%B3n/Noticias/Tab/En%20riesgo%20investigaci%C3%B3n%20universitaria%20sobre%20biodiversidad](http://www.udea.edu.co/portal/page/portal/bActualidad/Principal_UdeA/Investigaci%C3%B3n/Noticias/Tab/En%20riesgo%20investigaci%C3%B3n%20universitaria%20sobre%20biodiversidad)
- Universidad de los Andes. (2013). Firma a los decretos para permisos y colecciones biológicas. *Boletín Facultad de Ciencias*.
- Valero, D. (26 de Febrero de 2012). Consulta previa enreda proyectos de desarrollo . *El Tiempo*.

- Weinberg, A. (1972). Science and Trans-Science. *Minerva*, 10(2), 209-222.
- Weinberg, A. (1985). Science and Its Limits: The Regulator's Dilemma. *Issues in Science and Technology*, 2(1), 59-72.
- Wynne, B. (1992). Carving out Science (And Politics) in the Regulatory Jungle. *Social Studies of Science*, 22(4), 745-758.
- Wynne, B. (2004). ¿Pueden las ovejas pastar seguras? Una mirada reflexiva sobre la separación entre conocimiento experto-conocimiento lego. *Revista Colombiana de Sociología*(23), 109-157.