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From the Analysis of Argumentation to the Generation of Typologies: A Model of Qualitative Data Analysis

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Abstract

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Keywords

Qualitative Data Analysis, Discourse Analysis, Argumentation, Typologies, Mental Models, Traffic Rules

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From the Analysis of Argumentation to the Generation of Typologies: A Model of Qualitative Data Analysis

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In this paper we present a model of qualitative data analysis developed through an example from an empirical study that focused on analyzing the causes of why people obey or disobey traffic rules. Specifically, we focus on the study of the arguments that people use to justify their behaviors regarding such rules. The study was developed from in-depth interviews with men and women between the ages of 18 and 60, who drive cars or motorcycles. The model is organized into three stages that are applied to the empirical study. In the first stage we form the research question and objectives. In the second stage argumentative statements are studied for later access to the systems of beliefs that support those statements and to the mental models which form the basis of the systems of beliefs. Finally, we build typologies of individuals based on how arguments, systems of beliefs, and mental models are combined in such individuals. Keywords: Qualitative Data Analysis, Discourse Analysis, Argumentation, Typologies, Mental Models, Traffic Rules

Introduction

The objective of this paper is to present the development of a model of qualitative data analysis that is focused on the study of argumentative discourse. The model proposes a procedure for analyzing qualitative data. This procedure is oriented towards the systematization and study of argumentative discourse. The model is applied to an empirical study, which is focused on analyzing the causes of why people obey or disobey traffic rules. Specifically, we focus on the study of the arguments that people use to justify their behaviors regarding traffic rules. The study was developed from 55 in-depth interviews with men and women between the ages of 18 and 65, who drive cars or motorcycles. Each interview lasted about an hour and was guided by a series of open questions that were aimed at facilitating the conversation.

The analysis of qualitative data is closely related to the discourse analysis. However, since discourse analysis is a broad field of study, we analyze a particular type of discourse that we consider key to the comprehension of the meaning of social action: the argumentative discourse.

This article is organized as follows:

- 1) In the first part we present an overview of the model and the analytical stages the model implies.
- 2) In the second part we develop every stage of the model through the empirical study, presenting the interviewees' arguments regarding their traffic behavior.
- 3) In the third part we elaborate our conclusions.

Methodology

The empirical study we present in this article was developed from the in-depth interview technique. Fifty-five people were interviewed, using an open questionnaire. The individuals that were part of the sample were selected according to the following criteria:

- a) Gender – 30 male and 25 female
- b) Age – 15 men between the ages of 18 and 40 and 15 between 41 and 65 as well as 15 women between the ages of 18 and 40 and 10 between 41 and 65.
- c) Transportation – People who drive a car or motorcycle.

To conduct the interviews we used an open questionnaire that included the following topics:

- Daily routine
- Transportation
- Opinions about what it means “to drive a car, or a motorcycle”
- Opinions about traffic rules.
- Situations in which they obey or disobey traffic rules, including arguments about each situation.

Development

Part 1: A model of qualitative data analysis

In Figure 1 we show the stages of the analytical method that we propose in a research process framework. In the first stage of the model begins with one or more research questions. We then determine the research objectives and sketch the methodological guidelines related to qualitative methodology. We consider this first part to be the construction of the object under study that will be set in a theoretical framework.

Once the fieldwork is completed we analyze the discourse in stage 2. The steps that we follow are:

- 1) Identify the arguments in order to detail which statements are argumentative and then contextualize them. Also, analyze the number and type of arguments used to support each point of view.
- 2) Identify implicit premises for the reconstruction of syllogisms that make argumentation possible as well as the *doxa* that forms the basis of those syllogisms. This includes the identification and reproduction of social *semes* that go through the individual’s discourse.
- 3) Identify the systems of beliefs. This is possible when the network of meanings, is made explicit.
- 4) Identify the action/situation models that relate to a predominant self-image and that link with the systems of beliefs that support the argumentation.

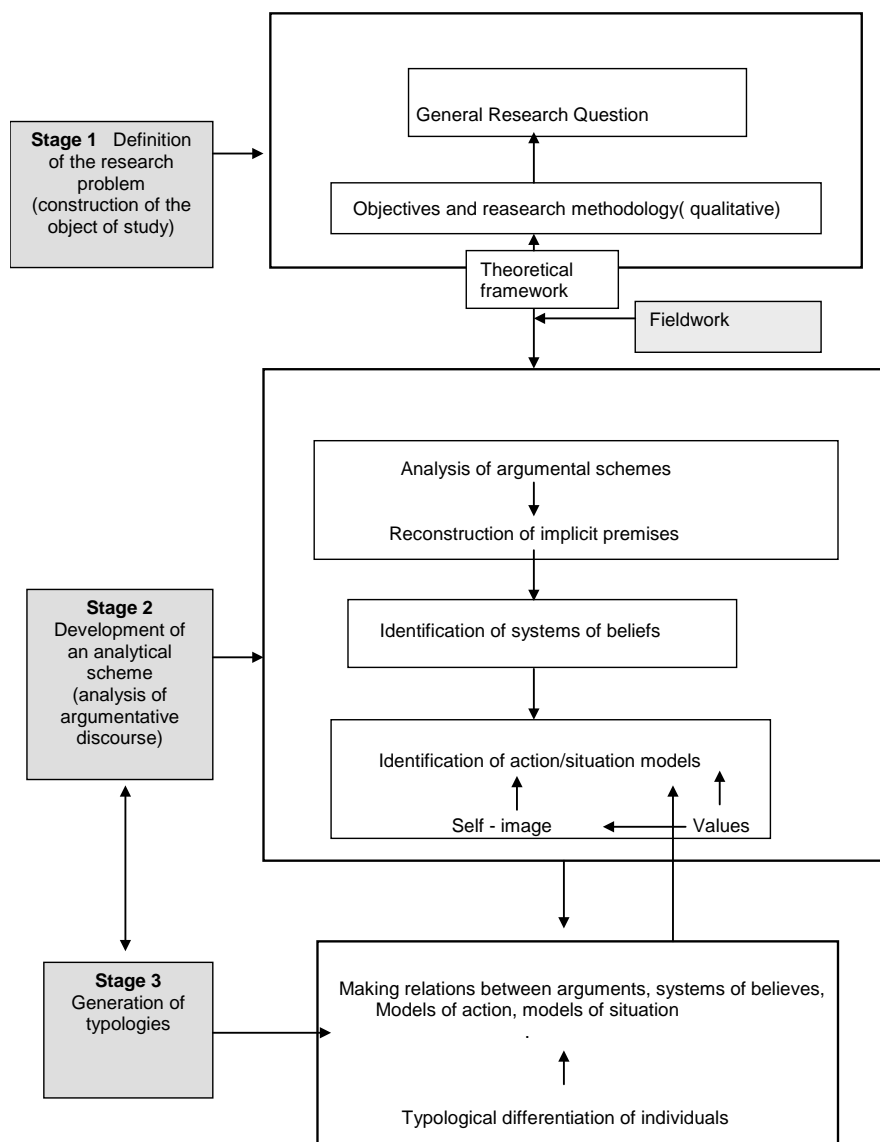


Fig 1: Model of qualitative data analysis

Finally, we work to answer the research questions in the third stage, necessitating an interpretive “leap” (Ruiz Ruiz, 2009)¹ through which we will generate a hypothesis about the individuals’ sense of social action and the reasons why they behave in the way they do. In this stage we analyze recurrences and differences in people’s discourse and combine their self-images, models, and systems of beliefs, in order to identify typologies.

Part 2: Developing the stages/moments of the work scheme in qualitative data analysis.

Following we develop each stage of the work scheme in detail around research in which we study the reasons why Argentinean motorists might obey or disobey traffic rules. It

¹ We take this concept from the work of Ruiz Ruiz who in his 2009 article about sociological discourse analysis suggests that all analysts must take a leap of interpretation, providing information about the hidden meaning of the speech of the people. However, we take the concept of interpretive leap because we believe that analysts must decode senses, but we aim for the specific idea of building typologies based on the analysis of an individual’s arguments, their system of beliefs and their mental models.

is common to observe Argentinean motorists disobey traffic rules, making Argentina one of the countries of South America² with the highest number of deaths due to traffic accidents.

Stage 1: building the object of study: The definition of the research problem

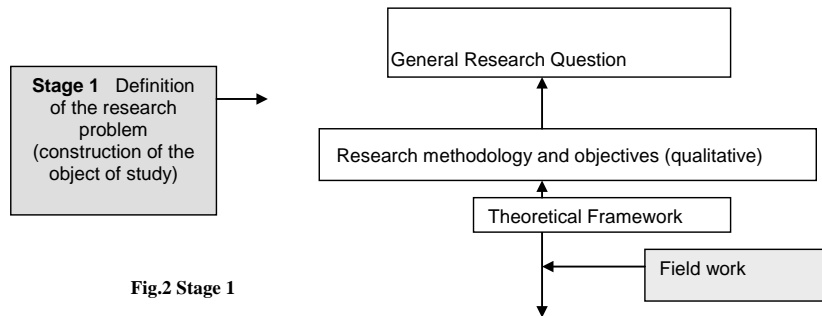


Fig.2 Stage 1

The study that we present focuses on analyzing the motorists' discourses on three issues:

- a) their way of behaving when driving a vehicle
- b) the meaning that driving has for them and
- c) their obedience or disobedience of traffic rules³

From these considerations, we have devised two research questions. The first is structured as a general question and is meant to guide the global sense of the research:

Why do motorists/motorcyclists behave in the way they do?(Regarding traffic rules)

This question required a derivative question to reach to a higher level of operationalization and, therefore, to be able to guide with more specificity the type of information that one looks for in this type of research. Thus, we formulated a more specific question that was constituted in the guiding question:

What type of argumentative schemes (characteristics and contents) do the social actors under study present when they justify their behavior or a third party's behavior, in relation to traffic transit and the rules that govern it?

Regarding the methodology, we chose the framework of a qualitative study to carry out the set objectives. In the first stage, we made observations of various types of subjects while they were driving a vehicle with the researcher in the passenger's seat. This stage served the function of getting the researchers closer to the object of study in order to prepare the following stages.

The second and third fieldwork stages consisted of in-depth interviews, which we considered appropriate for the discursive production that is analyzed in later stages (Merlino,

²See ISEV Argentina <http://en.calameo.com/read/000004809a6987ed9e2ec>

³ To this respect, see the works of Fernández Dolls and Oceja Fernández (1994); Oceja Fernández and Jiménez (2001); Goldestein et al. (2006); and Verkuyten et al. (1994)

2009, 2010). The interviews were conducted with male and female drivers between the ages of 18 and 65.

Stage 2, moment 1: a starting point for the analysis: the argumentative discourse.

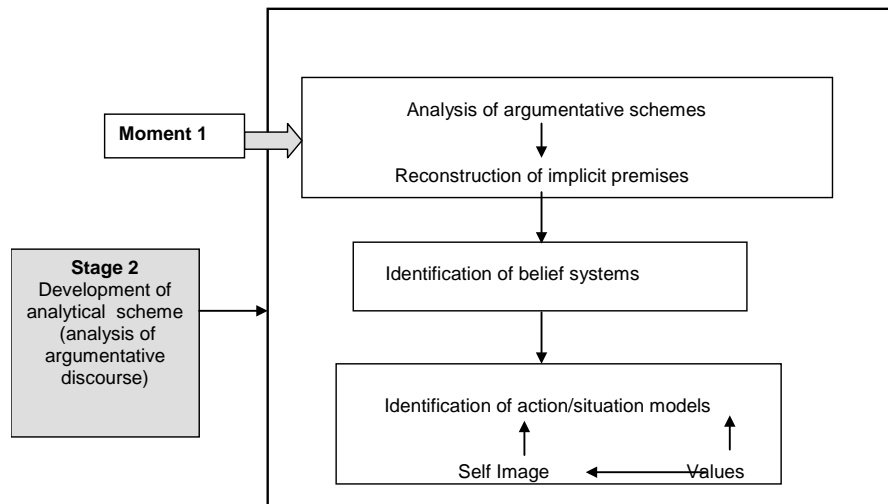


Fig.3 Stage 2 moment 1

From the approach that we suggest in this paper, argumentative discourse is central for understanding the sense of social action. This is due to the fact that when the subject argues, he/she states reasons and causes from which to justify his/her actions or points of view.

Identifying and analyzing argumentative schemes and reconstructing implicit premises in the discourse on vehicular traffic

When we talk about analyzing argumentation models (moment 1 in figure 3), we refer to the following procedure:

- 1) First, we must identify the statements that are argumentative. This step is fundamental because we will analyze each justification that the subjects mention concerning their behavior.
- 2) Second, once we have identified all argumentative statements (usually there are hundreds), we will analyze how many arguments are contained in each argumentative statement as well as how they relate to each other.
- 3) Third, we will reconstruct the implicit points of view and the implicit premises because although they are not mentioned by the subjects, they allow arguments to be effective when they are exposed.
- 4) Finally we will reconstruct the syllogisms that make the argument possible.

Next we provide an example of the above procedure.

- 1) Identification of argumentative statements

The first step in our work is to identify every argumentative statement⁴, which shows the reasons why each subject acts or thinks in a particular way. We will base this stage on Van Eemeren's work. Specifically, we will take into account the notion of the types of arguments (simple, composed, and complementary) and the notion of implicit premises and points of view (Van Eemeren, 2002).

We then provide an example of an argumentative statement from a case about obeying traffic rules

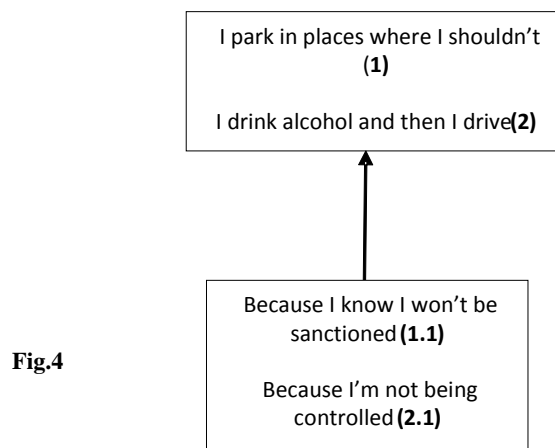
Interviewer: And why do you obey those (rules) and disobey the others? Is there any reason?

Interviewed: Yes, one... let's say the possibility of sanctions, which is important. If I knew that I would possibly be sanctioned, I wouldn't park in places where I shouldn't, the same with control, with the issue of alcohol, if I knew that in Carlos Paz (city of Córdoba) there is police control, I would ask for a coke (not alcohol) on Thursdays when I go to the pub with my friends.
(Esteban, 26, car)

Taking in account these argumentative sentences we can proceed to analyze their structure, the quantity of arguments and the relationship between them).

- 2) Identification of arguments (quantity) and their relationship between themselves. (types of argumentation)

We see then how the argumentative scheme is constituted as well as the quantity and type of arguments that organize it (Van Eemeren, 2002). See figure 4:



As is shown in figure 4, we observe that the argumentation is *simple* (Van Eemeren, 2002). The term *simple* here refers to an argumentative statement in which a point of view (1 and 2 in the figure) is supported only by one argument (1.1 and 1.2, in the figure, each one for their respective points of view).

⁴See the works of Marafioti (1998, 2002, 2003), Toulmin (1999), and Perelman et al. (2006)

Once we have identified the number of arguments and the relationship between them, we reconstruct the implicit points of view and premises. We agree with Van Dijk when he refers to an implicit meaning that is necessary to the comprehension of the discourse,

Discourses in that respect are like icebergs; most of their meanings are *implicit*. Implicit meanings are part of the mental models of the language users, but are not explicitly expressed in the text. They are *presupposed* by the speaker/writer to be inferable from explicit meanings in the text as well as from the personal and the socioculturally shared (world) knowledge of the hearer/reader. (2011,p. 615)

3) Identification of points of view and implicit premises

As we see below, the subjects' defense of their points of view consists of simple arguments (Van Eemeren, 2002) that are closely connected to each other in the chain of reasoning:

*I can park where I shouldn't
I can drink alcohol and then drive*

That is, the individual argues that there is no control and therefore no sanction. One event is a consequence of another. This is true as long as other arguments do not intervene, such as the control without the sanction, for ineffectiveness or corruption. If that was mentioned as another argument, then it would not be possible to establish the correlation between sanction and control.

The argumentative scheme above is possible because of the existence of a set of implicit premises which are not mentioned in the interviews, but, discursively, they are necessary for the logic of the argument. Without this implicit premise, the argument does not have logic and is not effective. The implicit premises that one can infer include:

- a) *Obeying rules makes sense if they punish me for not following them.*
- b) *If I know there is no control or sanction, I can infringe on the rules, as there is no probability that I will get punished.*

4) Reconstruction of the main argumentative syllogism as a means to make the suppositions and beliefs of the subjects explicit.

The implicit premises mentioned in point 3 are possible because of the following syllogism, which is the basis for the construction of the argumentation:

- a) *If there is no control or sanction, it is possible to disobey the rules.*
- b) *There is no control or sanction when I park where I shouldn't and when I drive after having drunk.*
- c) *The above rules can be disobeyed*

We should not consider the internal mistakes (of truth) in this syllogism, but as long as it keeps its logic of reasoning it is useful in supporting the individual's argumentation about why certain traffic rules are not obeyed.

This same analytical procedure must be done with each of the argumentative phrases from the interviewees. Such procedures will allow us to construct a panorama of system of beliefs that is behind the individual's behavior

Stage 2, moment 2: From the analysis of argumentation to the identification of the system of beliefs

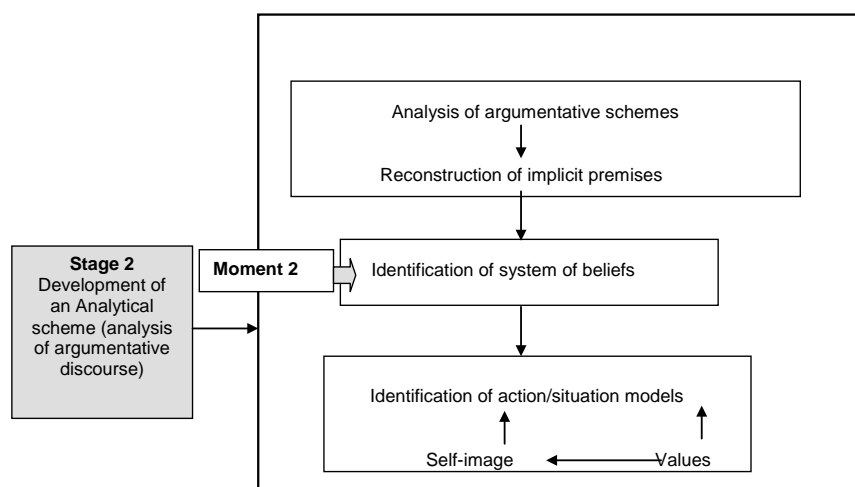


Fig. 5, Stage 2 moment 2

The scheme of the argumentation analysis that we have considered from Van Eemeren's theory would be a starting point, the road from which to start the analysis of a corpus made up of a set of discourses that come from the interviews. However, the analysis of the argumentative mechanisms is not an end in itself but rather a step to access the system of beliefs that support the argumentation and the identification of mental models (action and situation) that organize such systems of beliefs.

Beliefs cannot be identified and analyzed separately or decontextualized from the framework of other beliefs with which they form a system. We call it, therefore, a system of beliefs, that is to say a set of beliefs that are interrelated. The nature of such relationships could be varied and of different degrees of complexity. In our case, and about the topic we are looking at, it is possible to detect systems of beliefs that are organized around the traffic rules.

In the next sub-section we will describe and analyze the four systems of beliefs that we found.

Identifying and analyzing systems of beliefs in discourses on traffic rules

After analyzing the argumentative statements, identifying the implicit premises, and reconstructing the syllogisms that support them, it is possible to reconstruct the systems of beliefs that form semantic networks from which the arguments arise.

The reconstruction of the systems of beliefs is, by definition, partial and relative to the individual's life. This particular aspect refers to the obedience or disobedience of traffic rules in a specific country and city, which for us is Córdoba, Argentina.

According to the analysis of the arguments and the reconstruction of the syllogisms we detect four systems of beliefs, each of them grouped according to a central belief.

Below we show the four systems of beliefs that we found in the subjects' discourses. In each figure that represents each system of beliefs we present four statements about these systems of beliefs. The name of each of them were created in order to represent the core of each system.

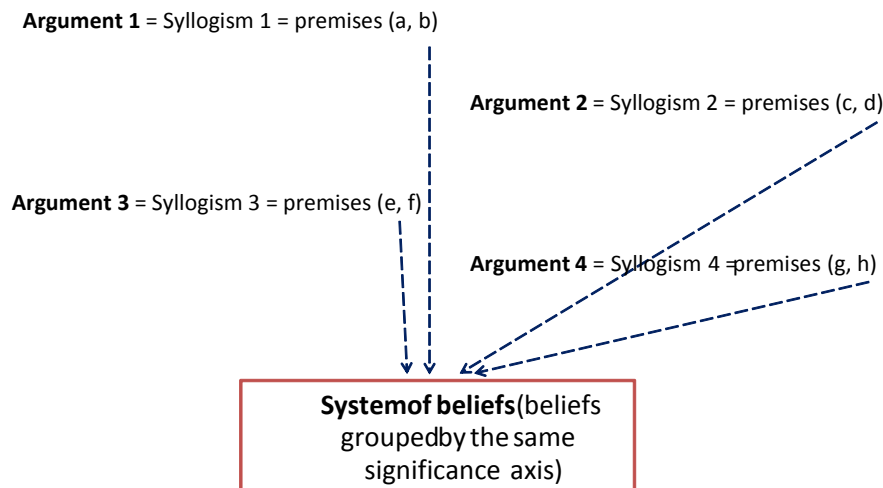


Figure 6: From the arguments to systems of beliefs

The four systems of beliefs include:

- 1) The rules as an obstacle.

In this system the traffic rules come between the driver and his personal objectives. The rules appear as an obstacle and not as a facilitator of road safety. Therefore, red lights and speed limits represent unbearable delays, and no parking signs restrict the driver's freedom.

In the next figure we display a scheme that shows the relationship between the central belief and the other beliefs related to it.

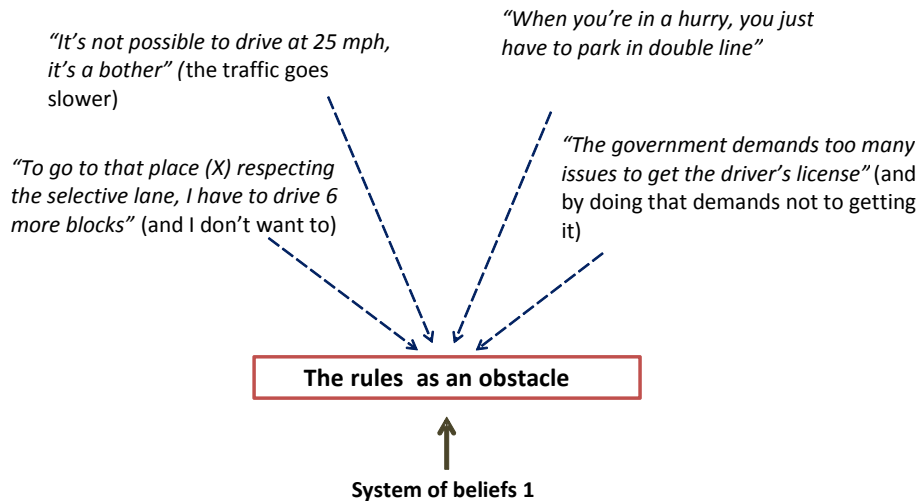


Figure 7: The rules as an obstacle

In these statements we can observe that people who hold this system of beliefs consider the rules to be something that interposes between them and their personal objectives. In figure 7, the four personal objectives would be: Going faster than 25 mph, parking on the

double line (because they are in a hurry), not driving more blocks than they would consider necessary, and obtaining a driver’s license without much effort.

2) The rules as aggression

This system of beliefs represents the minority, but it is present enough in a group of individuals to define a system. The central belief arises from the notion that rules are created to intentionally bother the citizens. This system of beliefs implies that rules are hostile to the individual because it forces people to “unfairly” do (or not do) something.

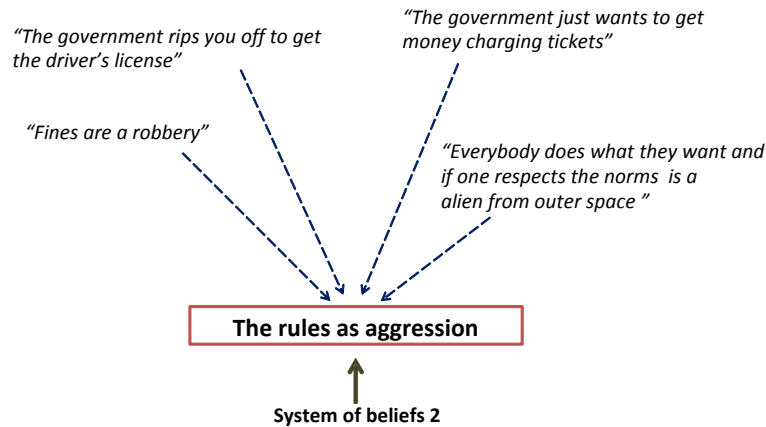


Figure 8: The rules as aggression

3) The rules as duty

We have observed that the third central belief, which associates rules with a duty, assigns a positive value to such duty. In this case it is about considering rules as something that *must be obeyed*, as the mere existence of it requires compliance. Here, the content of rules is what is considered valid.

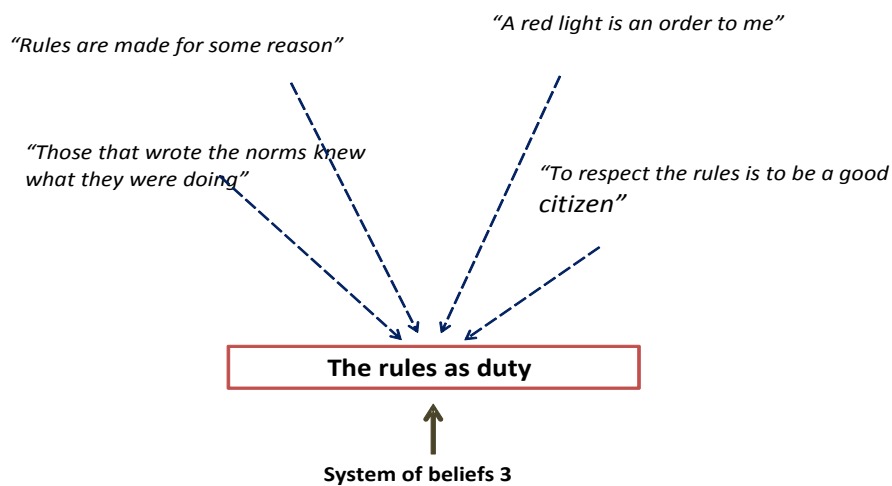


Fig 9: The rules as duty

4) The rules as prevention

Here is the considered preventive, in that compliance helps avoid harmful situations, such as accidents and, to a lesser extent, fines. According to the central belief, compliance with rules is not necessarily a value in itself, as in the previous system, but rather they are a way to prevent dangerous situations. The value of rules lies in their protection power.

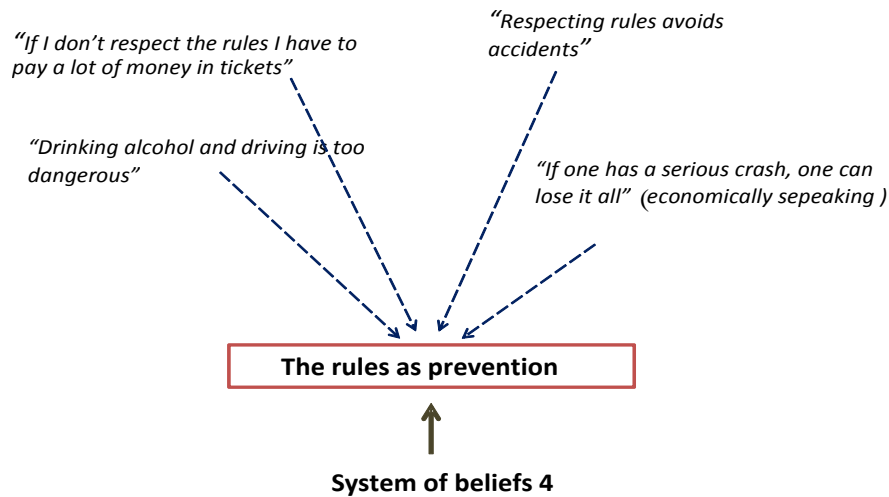


Fig.10: The rules as prevention

So far, we have described two of the three moments that are included in stage 2. In those two moments we identify each argumentative statement and the arguments that they imply. Then, we reconstruct all the points of view and implicit premises that hold the arguments as well as the syllogisms that are behind the arguments. Finally, we put together the systems of beliefs on which the arguments are based.

Stage 2, moment 3: From argumentation analysis and the systems of beliefs to the identification and analysis of the action/situation models

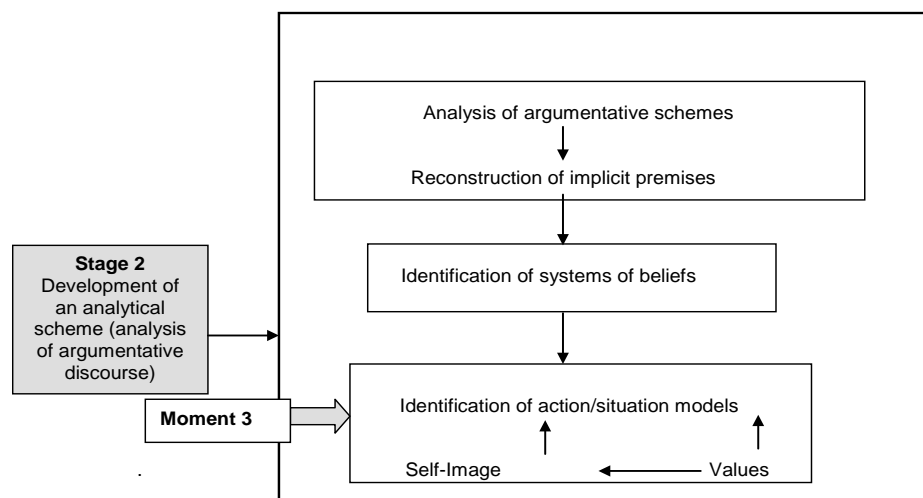


Fig 11: Stage 2 moment 3

Following this sequence we are able to obtain a detailed overview about how argumentative discourse is structured and how interviewees justify their driving behavior.

In the next section, we will explain the next step (moment three) which necessarily involves the development of two concepts that will be needed to advance to the argumentative discourse analysis. We refer to the concept of action models and situation models.

We come to a stage in the development of our model in which it is necessary to explain the concepts that are central to the proposal that we have developed here. The concepts *action model* and *situation model* are explained in order to analyze how the arguments and systems of beliefs are related to those models. This means that a specific set of arguments is related to a specific system of beliefs and, at the same time, this system of beliefs is supported by one or more models of actions and one or more models of situations.

Mental models

A key concept for our approach is the *mental model* (Van Dijk, 1998, 2000, 2008a, 2008b, 2009, 2011). Van Dijk defines mental models as "...representations in Episodic Memory of the situation (events, actions, persons, etc.) referred to by the speaker or writer" (2011, p. 614)

We agree with the author in his appreciation of mental models as an interface between the social and the personal discourse. He considers the concept of mental model to be necessary to provide an explanation for how the individuals represent their social conditions and influences and produce personal discourses from those representations.

Van Dijk (1998, 2000, 2008a, 2009) describes types of mental models, including:

- Models of events: the representation of the individuals' experiences and their biased beliefs about events.
- Models of situations: the representation of the situation (time, place, participants) in which the communication takes place
- Model of actions: models that feature participants who are actors in various roles (agents, patients, etc.).
- Context models: a representation of what is *relevant-for-discourse* in the current communicative situation. That is a special kind of everyday experience model, represented in the episodic memory of discourse participants. Such context models are assumed to control many aspects of the production and understanding of text and talk. This means that language users are not just involved in processing discourse; at the same time they are also engaged in dynamically constructing their subjective analysis and interpretation of the communicative situation on line. (2008, p. 56)

We agree with Van Dijk about the necessity of taking into account mental models, but we use this concept in another way. We consider mental models as people's representations of themselves being and behaving in a specific way. Our definition of these kinds of models is oriented to the explanation of behavior more than to the process of producing and interpreting discourses.

We define two mental models:

1) Models of action

The model of action is a type of mental representation that includes an individual in a dominant dimension. It is a *model of doing* and involves the actions of the individuals. Thus, the semantic axis *be - do* is appropriate to define the models of action vs. the models of situation.

The models of action represent the individual and the others in an implicit or explicit but always necessary relationship. This means that the individual cannot conceive of him/herself as doing something outside of a social context with its regulations and specific characteristics.

2) Models of situation

The models of situation are a type of mental representation that includes the individual in a dominant dimension of being (being a specific person or being in a specific situation).

As with the models of action, they are models in which the individual and the others are always included in an implicit or explicit relationship. We want to explain that the individual cannot conceive of him/herself outside of a social context with its regulations and particular characteristics.

They are models that, unlike the models of action, have a motivational character. That character comes from the association of models of situation with specific values and disvalues which are constituted in social aspirational objects or in social avoidance objects, respectively.

With respect to the models of situation, it is important to highlight that they are also associated with the degree of feasibility that the individual allots to the situation represented in the model, being of aspirational or avoidance character..

In order to illustrate the relationship between arguments and models of action and situation, we can analyze the following paragraph.

Interviewer: “and as you mentioned before...why do you run the red light sometimes...?”

Interviewee: “Well...because it is a bother for me to have to stop when I am in a hurry, which happens many times. If there aren't cars in sight I believe I can run the red light without hazard. I always try to drivewithout stopping”
(Rodolfo, 24 years, car).

In this quote we see that Rodolfo's main argument is that he is often in a hurry and it is bothersome for him to stop his car when the light is red.

This argument is related to a model of situation that could be represented in the next semantic axis composed by one fundamental meaning or sema (see Greimas, 1982):

Continuity ----- Discontinuity

The pole of continuity refers to an ideal situation in which the individual never stops. On the other hand, the pole of discontinuity refers to a situation where the individual must stop many times as necessary, such as for a red light.

In this case the interviewee values the continuity and represents himself doing certain actions (model of action), such as ignoring the red light in order to reach the situation that he values, being continuity.

Stage 3: interpretative leap. Elaborating typologies of individuals as drivers from the relationship between arguments, systems of beliefs, self-image and models of action/situation.

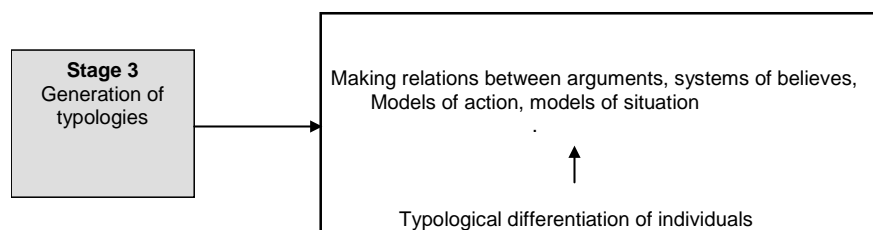


Fig 12: Stage 3

As we have proposed before, the models of situation that are settled in specific values present a motivational character which guides behaviors toward certain directions and aims. We explain the main models of situation, and their associated models of action, that the individuals present. But this will only be possible if we relate the systems of beliefs and the models of action/situation with subjects of discourse that present a certain self-image shown in social interaction.

We should make clear that it is the relationship with the context that triggers different self-images that, when put into play, imply different roles and, above all, different values linked to those roles. The individual holds a repertoire of self-images associated to specific values from which that image is indissoluble. Therefore, when the individual relates with others, an image of the self activates that is associated with a set of values from which the individual aspires to reach certain situations (models of situation).

If we advance towards detecting the differences and similarities in the individuals interviewed, we should analyze the different combinations that those individuals present with respect to:

- Self-images
- Values
- Systems of beliefs
- Models of situation
- Models of action
- Behavioral series (repertoire of chained behaviors)

The combinations between these factors allows us to elaborate a typology of individuals from which it is feasible to think about the different senses that driving a vehicle in the street has obeying traffic rules or not.

It is important to clarify that the typology we are proposing in this research is useful to explain “the world of driving in a vehicle” on the street in Argentina. Probably this typology should be adapted according to the culture and rules of other countries

We will expand, then, on the development of the typology of individuals we propose, highlighting that the types we identify present the following characteristics:

- a) They are ideal, in that they work on the extremes that each one implies.
- b) They are not connected with any socio-economic variable.
- c) They are based on the discourse of interviewees.

Scope and relativity of the analysis by typologies

The analytical exercise performed on the construction of a typology of individuals requires some reflection on the pertinence of its interpretive use in the field that we applied it to or any other.

First, any analytical effort that tries to explain the sense of social action for individuals will face two problems: recurrence and diversity. The analysis of field data – whatever the unit under study is – involves with a series of recurrences which should be analyzed. In our case, the field data consists of the interviewees' responses, in which we found a high frequency of recurring arguments. Therefore, we observed coinciding responses, including ways of describing an event, reasons for doing or not doing an action, and descriptions about how they drive.

We can also see a different set of arguments among other groups. How we should behave in an analytical way in front of evidence of recurrence and diversity? One of the ways we can proceed is by generating typologies of individuals, taking into account some of the aspects that characterize them.

We agree with Bailey (1994) that developing typologies of individuals has several advantages, and we list some below (1994, p. 2012).

- 1) *Description*. Classification is the premier descriptive tool. A good classification allows the researcher to provide an exhaustive and perhaps even definitive array of types or taxa.
- 2) *Reduction of Complexity*. We cannot focus on all persons and all of their characteristics at once but by classifying persons according to salient underlying dimensions we can simplify our complex reality enough to analyze it.
- 3) *Identification of Similarities*. Classification procedures allow us to recognize similarities among cases and group similar cases together for analysis.
- 4) *Identification of Differences*. Similarly, classification procedures allow us to differentiate between different cases, so that dissimilar cases can be separated for analysis, rather than remaining mixed together.
- 5) *Comparison of Types*. A good typology also allows the researcher to quickly and easily compare types. The researcher can select types in different areas of the typology and compare them. This gives a quick appraisal of the similarities and variation in the typology and of the general qualities inherent in the typology.

As it is not possible to simultaneously analyze all the features that the interviewees have, we propose to develop a typology taking into account the concepts on which we have focused in this article, namely:

- Systems of beliefs

- Models of action
- Models of situation (and the values related to them)
- Self-image (as part of the model of action and situation)
- Specific behaviors mentioned by the interviewees.

The typology is constructed analytically and responds to the modeling of “flesh and blood” individuals that speak in a certain way and describe and justify their behaviors in certain ways.

It is important to understand that these types are not “cages” that enclose a handful of specific qualities; rather they are scenarios where combinations of images, models, beliefs, and behaviors are shown. Therefore, the types are useful for understanding the sense of social action in a specific context.

Type 1: the rules as obstacle: the Self Oriented

The first type of individual we identified presents the arguments predominantly in opposition to the traffic rules. The specific quality of argumentation is presented as centripetal, in that it generates arguments based on the conditions or situations inherent to the individual and oriented to him/her.

We could say that it is an individual clearly “oriented towards his/her personal aims” while driving the vehicle, from which he/she receives the name. For this individual, the rules are interposed between him/her and the aims, transforming those rules into an obstacle.

Therefore, the prevailing system of beliefs sees *the rules as obstacle*. The rules, from this point of view, are something that can be assessed regarding the need for compliance. Therefore, the Self Oriented will analyze, in every step when it has sense to obey the rules or not.

With this kind of individual, we can discern their justifications for disobeying rules, among them:

- a) Knowledge about the “inappropriateness” of the rules.
- b) Specific qualities that make the observance of the rules unnecessary, for instance over-confident perception of his/her driving ability.
- c) Special situations (anger, hurry, idleness, etc.) that justify the transgression. In this case, the argumentation tends to come with a description of a non-permanent transgression.
- d) Absence of a quality, such as custom, habit, etc.

If we go deep into the interrelationships between the individuals’ self-image, values, system of beliefs, models of situation and models of action, we see that they relate with situations that do not practically include traffic rules.

We can exemplify those interrelationships as follows:

Self-image	Values	Models of situation	Models of action	Systems of beliefs	Specific behaviors
Worker	Compliance (punctuality)	Beign/arriving on time	Completing the journey quickly	The rules as obstacle	Running a red light
Friend	Sharing	Being in touch	Talking to a friend		Talking on the phone while driving

Figure 13: The Self Oriented

In figure 13 we provide an example of two Self Oriented individuals. In the first case, the self-image that predominates is *Worker*. In this case the individuals use the car to get to their job, and they believe they are always in a hurry. They say that it is important to be punctual. These two aspects put together results in breaking rules because these rules hinder their goals. The goals are represented in the model of situation: *being on time*. This model of situation is related to the representation of actions (models of action) that allow the person to achieve that situation. Then, the system of beliefs that the Self Oriented presents is: *The rules as an obstacle*. Hence the behavior that we observe in this type of individual is disobeying rules, such as running red lights.

The following quote that illustrates this case:

Interviewer:...as you told me before, you run the red light many times. Could you explain why?

Interviewee:...mmm, what happens is that I need to be on time to work, and usually the traffic is a mess and I'm in a hurry. For this reason, when I can run the red light, I do it because I believe that being on time is more important than obeying rules that sometimes are silly and bothers me. **(Gladys 35, car)**

In other words, the behavior of disobeying rules finds its support in the motivational force that the models of situation imprint on it; these models of situation are predominantly activated in these individuals and are related to aims clearly oriented to the individual.

The models of action of the Self Oriented focus, mainly, on granting continuity to the actions of the subject. This continuity is highly valued and implies that rules are an obstacle.

Finally, we could say that the Self Oriented is an individual for whom the base model of action is to disobey the rules and the associated behaviors, such as stopping at red lights, letting another car pass, decelerating, and waiting.

Based on this information we can hypothesize that the Self Oriented will not respond to any communication campaign which aims at raising drivers' awareness since it is almost impossible that those campaigns would activate, by themselves, the models of situation to obey rules.

Type 2: the rules as aggression: the Vindicator

Like the Self Oriented, this typology of individual is also characterized by presenting an argumentative structure aimed, mainly, at justifying the non-obedience of traffic rules. However, the main characteristic of the argumentation is that it is presented as *centrifugal*; that is, it generates arguments based on situations beyond the individual and oriented to other people or events that are imposed out of his/her will. Given that *the outside* threatens him/her, we will name *Vindicator* to this typology of individual who consistently argues for his/her right to disobey because other drivers do it constantly. Besides, this individual vindicates the right to defend him/herself from the abuses that – from the individual's point of view- he/she receives on the part of control organisms, being the government or police.

The self-image that activates in this individual, from the situation of traffic interaction, seems to be related to an *individual in competition*, that is, an individual who appears to be alert and confronting the other actors in the background.

The Vindicator seems to be unable to think self-referentially about the responsibility for transgressions; rather the centrifugal force of his/her argumentation expels any causality out of his/her scope as a person.

In the situation of driving a vehicle, this individual seems to be in an ongoing hostile relationship with the social and institutional context. A communal type of relationship with his/her context turns out to be indeed unfeasible due to the hostility with which this individual lives and experiences that context.

The Vindicator argues that he/she is not responsible for breaking rules and blames others for the decision to disobey.

Among the characteristics that this type perceives over the other actors are:

- Inability to drive
- Disobedience for traffic rules, which makes it unlikely for him/her to obey them.
- Hostility towards authority and the rules.

We can explain the interrelationship between self-image, system of beliefs, values, models of situation, and action as follows:

Self-image	Values	Models of situation	Models of action	Systems of beliefs	Specific behavior
Competitor	The triumph/imposition over the other	Win	Evade controls	The rules as an aggression	Drive without a license
Individual attacked	Self-defense	Avoidant : affected/damaged being	Not respecting the norm (fine)		Not paying the fine

Figure 14: The Vindicator

In figure 14 we provide an example of two Vindications. In the first case, one of the self-images that is activated when the Vindicator is driving is that of *Competitor*. This means that the Vindicator feels that others (e.g., the government) are aggressive and are in competition with him/her because the regulations seem abusive. In this case, the reaction of the Vindicator is to avoid the rules, and the dominant model of situation is to win. Thus, the values that are related to that model of situation are triumph and imposition over the other (the government, the police).

Below is a representative response from a motorcyclist:

Interviewer: ...and did you pay the fine for driving without a license?

Interviewee: No... and I will not pay it

Interviewer: Why?

Interviewee: Because they [the transit office] charge me a lot of money for a little piece of paper [He indicates with his hand how small the driver's license is]. And it is not fair. I feel that they are against us rather than for us. I won't pay either for the driver's license or the fine for not having it. As you can see I win, they lose. **(Juan, 38, motorcycle)**

The interaction with the context in which traffic occurs activates in this individual the models of situation mentioned in figure 14. Thus, compliance with those models of situation

implies the activation of specific models of action which do not promote obeying rules instead they vindicate the individual with respect to other drivers and to traffic authorities. Therefore, the models of situation, such as *winning* produce a set of behaviors such as accelerating past other cars, yelling to other drivers and driving without the proper authorizations.

The Vindicator presents the system of beliefs we call *the rules as aggression*, since the position of this individual in the system of interactions produces discord with the rules.

The Vindicator maintains a hostile approach to his traffic environment, and he/she is not receptive to arguments that reinforce the importance of obeying rules. This proclivity to disobey is due to the fact that rules represent an imposition coming from the authorities, which are seen as a hostile competitor rather than a beneficial actor. Thus, the focal points of his/her argumentation are oriented to disobeying rules, every time the individual perceives it to be unfair.

Type 3: the rules as duty: The Obedient

This type of individual differs from the two above in that his/her arguments point, mainly, to the justification for obeying the traffic rules and not to breaking them.

The Obedient receives its name because he/she is compliant. This individual accepts the *duty* and does not question it. We are not referring to the lack of critical powers in this individual at all but to the tendency to adjust to the social organization in which he/she lives.

The Obedient does not need more reasons than the very existence of the rules to obey it. This is why his/her attitude appears unchanging. Beyond any contingency the Obedient will comply with the rules above his/her interests.

The case of remission to third parties refers to taking into account a *social other* as a starting point for obeying rules. The case of the entity of rules refers to the single fact that they exist, which acquires sense in itself.

With this type of individual we do not see a discussion of complying with the rules.

The Obedient finds in the rules a parameter of order in front of the chaos that destabilizes him/her. Rules works as a regulating framework that the individual needs and values.

In the social interaction of driving a vehicle, a certain self-image is put into play with models of situation and action that we see in figure 15.

Self-image	Values	Models of situation	Models of action	System of beliefs	Specific behaviors
Citizen (exemplary)	Obedience	Being respectful Compliance	Respecting the rules	The rules as duty	Stopping at a red light at any moment, time and place.

Figure 15: The Respectful

In this chart the contact with the activity of driving and the interaction with other traffic actors (other drivers, pedestrians, and control organisms) activates a self-image that we call an *exemplary citizen*, which refers to an individual absolutely framed within his/her duties and rights. The act of driving is a scenario for the Obedient to connect with a set of rules that regulate that activity and that act as a creed for him/her.

The value of obedience is the one that relates with the self-image of this type of individual. The models of situation to be achieved has to do with complying and responding to the expectations of another social actor who has instituted rules and who observes it. Thus, this is a type of individual for whom obeying rules acquires a model of action status (which does not occur in the other two types when the obedience for the rules is never fulfilled as such). This model suggests a development of behaviors which is almost impossible to observe in the other types described. Among these concrete behaviors we can highlight those that imply respect for the content of the rules beyond its functional value. This is why this individual can even risk his/her personal safety by stopping at a red light very late at night in an area of high criminal concentration.

The system of beliefs that revolves around rules is the one we have called *the rules as duty* that suggests a series of beliefs in which rules provide important regulations in a community and not as an obstacle or aggression, as in the two previous cases. The following quote illustrates beliefs of the Obedient:

The rules a duty for me. People that create rules do so for a good reason, and they know what they are doing If every citizen obeyed rules, the traffic would be much better. (Tomás, 57, car)

Type 4: the rules as prevention: The Avoider

Similar to the previous type, the *Avoider* defends obeying rules. As we anticipated when we described the Obedient, the difference between this individual and the Avoidant is that the latter argues for what is avoided by obeying the rules. The argumentation centers around *convenience* rather than duty.

The label Avoider receives its name for showing a high sensitivity in the detection and assessment of risky situations, which he/she tries to prevent by obeying traffic rules. The Avoider's compliant attitude is constant in the responses and tends not to disobey rules.

In the case of respect for risk perception, we refer to the strong tendency of the Avoider to anticipate the possibility of suffering an accident and the negative consequences that this brings. In the case of Avoider, the fear for punishment appears when an accident carries the possibility of trials and economic loss. The Avoider also fears being fined/sanctioned for any transgression behavior.

The self-image that activates in the case of the Avoider is one of an *Individual at Risk*, which activates values such as *precaution*, related with models of situation like *being protected*. This activation can operate through the aspirational mechanism or through the avoidant, which is the most frequent in this type of subject. In this case, the self-image activated is related to disvalues such as the *risk/hazard* that activate avoidant models of situation such as *being damaged or losing everything*. As long as those avoidant models of situation activate, a series of models of action related to the observance of the rules will be activated. Figure 16 puts the concepts together:

Self-image	Values/ disvalues	Models of Situation	Models of action	System of beliefs	Specific behaviors
Individual at risk	Precaution (value) The risk (disvalue)	Being protected (aspirational) Suffering damage / Losing all (avoidant)	Respecting rules	The rules as prevention	Respecting the permitted speed limit, using seatbelts, having an insurance policy, etc.

Figure 16: The Avoider

As we observed with the Obedient, the Avoider’s obedience for the rules reaches the status of model of action; that is, it is presented as a model that generates specific behaviors oriented to safeguard the integrity of the former. The self-image that prevails during the interaction when driving a vehicle is the one of *Individual at Risk*, which is connected with a model of aspirational situation: *being protected* or, depending on the force of interaction that risk perception generates, with an avoidant one, which is the one of *suffering damage*.

The system of beliefs that prevails in the Avoider is the one we have called *the rules as prevention*, which suggests that its beliefs revolve around the possibility that situations that carry some type of damage of longer or shorter permanence occur.

The Avoider is then an individual who fears and, therefore, who avoids the circumstances invested with fear. Thus, the models of situation can be aspirational, as in the example in the chart (*being protected*), or avoidant, as *suffering damage or losing all*. It is the type of interaction with the context that detonates the quality of these models of situation. In a setting like the traffic in Argentina, with mass media that informs the public about fatal accidents on a daily basis, it is highly likely that models of situation of an avoidant type activate, linked to the self-image that characterizes the individual while driving.

Finally, we can illustrate the Avoider, with the next dialogue:

Interviewer: Why you are so concerned about obeying rules?

Interviewee: Because I have been able to see the consequences of not obeying the rules.

Interviewer: And which are those consequences?

Interviewee: Well, my uncle lost it all [she refers to money and property] because he crashed when he was driving the wrong direction at a high velocity. The injured person went to a trial, and my uncle had to pay him a fortune for damages. He lost it all. If I went on to the same situation I would be devastated. I prefer to obey rules. **(Claudia 31, car)**

Final reflections: towards a synthesis of the analytical model proposed.

In our model, we understand that the qualitative research proved to be ideal for the conception and implementation of techniques in which the generation of discourse is the axis of the research. We believe that for the comprehension of the senses of social action, the generation and analysis of argumentative discourse is of utmost importance. It is through this type of discourse that we would have access to explanations, justifications, and persuasion

attempts, including the conception that the individuals have about their own actions and the reasons that generate them.

We believe that the problem we have presented with respect to obeying traffic rules, as well as other problems, can be analyzed by using our approach, in which we depart from the argumentation to get to the models of action/situation that guide behaviors.

Many authors and researchers are reluctant to utilize the explicitness of a methodological scheme for analyzing an object of study. We believe that it is possible to think in the following analytical scheme, without being too restrictive:

- 1) In the first place, we speak about a moment 1, in which the object of study is constructed. We must remember that an analysis is only possible from the selection of a set of social interactions from which the sense of social actions will be analyzed for the individuals. We focus on the understanding of the meaning that driving a vehicle and the obedience of traffic rules has for the individuals. At this stage, the objectives are narrowed and the methodology is determined. We used the in-depth interview technique, which was useful to produce the argumentative discourse.
- 2) In the second stage after performing the fieldwork, we proceed to the analysis of the generated discourse, which implies certain procedures that we mention as follows:
 - a. If the interest of the analysts is focused on the understanding of the sense of the social action, they will find possible relationships between the individual's saying and doing (discourse and behavior) and will find a means of comprehension of such relationships in argumentative discourse.
 - b. The emergence of causes at the discourse level in saying and/or doing reveals implicit premises that could be identified from the reconstruction of syllogisms that support the presented arguments.
 - c. The reconstruction of syllogisms and the explanation of implicit premises included in them allow us to identify beliefs that construct systems. As a result, we identify a set of systems of beliefs that support the argumentative schemes presented by the individuals.
 - d. The identification of these systems of beliefs allows us to start analyzing which self-image emerges predominantly in the scheme of interactions we are analyzing.
 - e. We must reconstruct (incorporate the analysis) the set of social senses that predominate in a social context (and that the individual reflects in the discourse) at all times.
- 3) In an almost unperceivable step, we continue to move to the third moment, in which we identify the values associated with the predominant self-image that arises in the individuals in the environment of interactions that we are analyzing. This takes us, inevitably, to put self-image with the values, and thus, with the models of situation that have aspirational value, and in some cases, avoidant. Next, we relate the situation models with the action models and specific set of behaviors

This analysis is only possible as long as we resolve the set of recurrences and divergences given when we relate all these concepts as not all people present the same self-images before the same situations, and thus, values, systems of beliefs, action models and behavior. It is at this stage when it is necessary to typologize the individuals in order to "embody" each possible combination in types of people who are only valid for the situation and the interaction coordinates of space-time that we are analyzing.

Finally, we are in a position to generate hypotheses about the sense that the social action has for each of the subjects (types) of study.

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