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The Dark Side of Human Sociality

*The Evolutionary Roots of Contemporary
Prejudice and Bias Motivated Behaviors*

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*This study is dedicated to
My late father & Sir Karl Popper
Both giants, standing on whose shoulders
Allowed me to see further*

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Summary

Background. Prejudice and bias motivated behaviors remain salient in our modern world. In every society, all over the world prejudice and bias motivated aggression occur, to differing degrees. Contemporary scholarship on prejudice centers around integrated threat theory (e.g. Stephan & Stephan, 2000) and the dual process model (e.g. Duckitt, 2001). In integrated threat theory, both realistic and symbolic threats are considered potent predictors of prejudice, whereas in the dual process model, two ideological attitudes, right wing authoritarianism and social dominance orientation, are considered to be the main predictors of prejudice. Whilst the former theory focuses on the context, the latter theory focuses on the individual level, *i.e.* attitudes. However, as right wing authoritarianism focuses on threats, and social dominance orientation on competition, both approaches can be considered to be complementary. In literature, it has been suggested that right wing authoritarianism is in fact the result of the evolution of human sociality (Kessler & Cohrs, 2008). In a similar vein, it has been argued that social dominance orientation has its roots in the evolution of human psychology. However, both of these links with evolutionary theory have not been the subject of thorough empirical research.

Goals. In the current study, the evolutionary roots of contemporary prejudice and bias motivated aggression are investigated. The overall goal of the study is to investigate in what sense prejudice and bias motivated behaviors could have been functionally adaptive in our ancestral past. More precisely, it is argued that contemporary prejudice and bias motivated aggression are the result of the evolution of human sociality, which relies heavily on the detection of allied groups and hostile groups, a cognitive module referred to as coalitional exploitation (Kurzban & Leary, 2001). Subsequently, social dominance orientation and right wing authoritarianism are integrated in this evolutionary framework, as they (i) constitute the most salient predictors of prejudice and (ii) because theoretical links with evolutionary theory have been pointed out for both of these ideological attitudes.

Main hypotheses. In order to empirically test this conjecture, two measurement scales have been developed. One scale probes genuine signaling of commitment to the in-group and the other probes deceptive signaling of commitment to the in-group. It is hypothesized that genuine signaling of commitment of the in-group has (i) a positive direct effect on right wing authoritarianism, consistent with the conjecture of Kessler & Cohrs (2008), and (ii) an indirect effect on bias motivated aggression, mediated by right wing authoritarianism and prejudice. Second, it is hypothesized that deceptive signaling of pro-sociality has (i) a positive and direct

effect on social dominance orientation and (ii) an indirect effect on prejudice, mediated by social dominance orientation and prejudice.

Methods. Data have been gathered with two large student samples in Belgium (n = 1300) and Spain (n = 1360). Data were gathered using an online questionnaire, implemented through Limesurvey. Structural equation models have been constructed for both samples using Amos, in order to test the direct paths and total indirect effects of the exogenous variables on the endogenous variables. In order to test specific mediation paths, a regression based approach as proposed by Preacher and Hayes (2008) has been used.

Results. The results of the study corroborate the hypotheses set out in this study. Genuine signaling of sociality had a positive and direct effect on RWA, and a significant specific mediated effect on bias motivated behaviors, mediated by RWA and prejudice. Deceptive signaling of sociality had a positive and direct effect on SDO, and a significant specific indirect effect on bias motivated behaviors, mediated by SDO and prejudice. Furthermore, no differences in the direction of the results could be found between sexes and countries, a finding that bolsters the evolutionary nature of mechanism under investigation.

Conclusion. This is the first study to empirically investigate the evolutionary roots of RWA, SDO, prejudice and bias motivated behaviors, and one of the few studies connecting the ideological attitudes right wing authoritarianism and social dominance orientation to bias motivated behaviors. The finding that prejudice and bias motivated behaviors may have pro-social roots can change the way we look at these modes of behaviors, and the ways in which we deal with them in society. It is proposed that punitive responses may not always be warranted and even result in an adversary effect. Rather, it is proposed that restoratively inspired approaches and holistic prevention strategies are to be preferred over punitive responses to prejudice and bias motivated behaviors.

Samenvatting

Achtergrond. Vooroordeel en de gedragingen die er uit volgen blijven hardnekkig bestaan in de huidige wereld. In elke samenleving, waar ook ter wereld kunnen vooroordeel en de gedragingen die er uit voortvloeien, vastgesteld worden. Hedendaags onderzoek naar vooroordeel focust zich vooral op *integrated threat theory* (e.g. Stephan & Stephan, 2000) en het *dual process model* (e.g. Duckitt, 2001). In *integrated threat theory* worden zowel realistische als symbolische dreigingen beschouwd als sterke predictoren voor vooroordeel. In het *dual process model* worden twee ideologische attitudes, rechts extremisme en sociale dominantie, gezien als de sterkste voorspellers van vooroordeel. Daar waar de eerste theorie zich focust op de context waarbinnen gedrag tot stand komt, focust de tweede theorie zich op het individuele niveau, i.e. attitudes. Aangezien beide theorieën als kernelementen dreiging en competitie naar voor schuiven, kunnen ze echter als complementair worden beschouwd. In de literatuur wordt verder gesuggereerd dat rechts autoritarisme een gevolg is van de evolutie van menselijk sociaal gedrag (Kessler & Cohrs, 2008), en, op gelijkaardige manier, wordt het evenzeer gesuggereerd dat sociale dominantie zijn wortels heeft in evolutionaire psychologie. Deze connecties met evolutie zijn echter in hoofdzaak theoretisch; ze zijn nog niet onderworpen aan systematisch empirisch onderzoek.

Doel. Het doel van voorliggende studie is de evolutionaire grondslag van hedendaags vooroordeel en de gedragingen die daar uit volgen, empirisch te onderzoeken. In dit opzicht wordt onderzocht welke functioneel adaptieve rol voor dergelijke gedragingen kon weggelegd zijn in ons evolutionaire verleden. In voorliggende studie wordt beargumenteerd dat vooroordeel en de daaruit volgende gedragingen een gevolg zijn van de evolutie naar socialiteit, waar het detecteren van vijandige en/of geallieerde groepen van uitermate groot belang is. Dit laatste wordt verzorgd door een specifieke cognitieve module, *coalitionele uitbuiting* (Kurzban & Leary, 2001). Verder worden rechts autoritarisme en sociale dominantie in dit theoretisch kader geïntegreerd, aangezien ze (i) de meest saliente predictoren voor vooroordeel zijn en (ii) er in de literatuur reeds theoretische verbanden tussen deze ideologische attitudes en evolutie werden gesuggereerd.

Kernhypothesen. Om dit doel te bereiken, werden twee meetschalen ontwikkeld, waarvan een peilt naar de geneigdheid van mensen om op een oprechte manier hun betrokkenheid op de in-groep te uiten, en de andere naar de geneigdheid van mensen om op bedrieglijke wijze hun betrokkenheid op de in-groep te uiten. De eerste hypothese stelt dat het oprecht uiten van

betrokkenheid op de in-groep (i) een positief en direct effect heeft op rechts autoritarisme en (ii) een significant en positief indirect effect heeft op bevooroordeelde gedragingen, gemedieerd door rechts autoritarisme en vooroordeel. De tweede hoofdhypothese stelt dat het bedrieglijk uiten van betrokkenheid op de in-groep (i) een direct en positief effect heeft op sociale dominantie en (ii) een significant positief indirect effect heeft op bevooroordeelde gedragingen, gemedieerd door sociale dominantie en vooroordeel.

Methoden. Data werden verzameld bij twee grote steekproeven bestaande uit studenten, waarvan een steekproef in België werd genomen (n= 1300) en een in Spanje (n = 1360). Data werden verzameld door middel van een online survey die werd geïmplementeerd via Limesurvey. Structurele equatie modellen werden opgesteld om de directe effecten en de totale indirecte effecten van de exogene variabelen op de afhankelijke variabele in te schatten. Om de significantie van specifieke gemedieerde paden te onderzoeken, werd gebruik gemaakt van de op regressie gebaseerde procedure voorgesteld door Preacher en Hayes (2008).

Resultaten. De resultaten bevestigen de theoretische verwachtingen. Oprecht uiten van betrokkenheid op de in-groep had een positief en rechtstreeks effect op rechts autoritarisme, en een significant specifiek indirect effect op bevooroordeelde gedragingen, gemedieerd door rechts autoritarisme en vooroordeel. Bedrieglijk uiten van betrokkenheid op de in-groep had een positief en direct effect op sociale dominantie, en een significant specifiek indirect effect op bevooroordeeld gedrag, gemedieerd door sociale dominantie en vooroordeel. Daarenboven kon er geen verschil in de richting van de resultaten vastgesteld worden voor mannen en vrouwen, of tussen de twee betrokken landen, wat de evolutionaire oorsprong van het mechanisme dat werd onderzocht, ondersteunt.

Conclusie. Dit is de eerste studie die de evolutionaire grondslag van RWA, SDO, vooroordeel en bevooroordeelde gedragingen empirisch onderzocht, en een van de weinige studies waar de attitudes sociale dominantie en rechts autoritarisme worden verbonden met bevooroordeelde gedragingen. De bevindingen hebben interessante gevolgen voor de praktijk en de manier waarop we met vooroordeel omgaan. Zo wordt voorgesteld dat een punitief antwoord niet altijd de beste optie is, en vaak zelfs in een tegengesteld effect kan resulteren. Een herstelrechtelijke aanpak en een geïntegreerde preventieve aanpak worden naar voor geschoven als alternatieven.

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Of course, there is life outside of the university as well. But a PhD tends to project itself onto that life as well. For this reason, I would like to thank my parents, my late father Bert Heylen, and my mother Chris Daelemans, for supporting me throughout the trajectory, for assisting me wherever they could, for the interesting discussions, and...for putting up with me when I was having a difficult time.

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Ben Heylen

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Introduction

Among the many evils that have always been present in the evolution of mankind, prejudice and intergroup hostility are two of the most visible and notable ones. Not only have they fueled the great variety of wars waged throughout our turbulent history, have they given shape to what our society has looked like architecturally (e.g. the grand walls and gates that surround historical cities), fueled veritable genocides and massacres, served as the foundation of many ferocious ideologies of various natures (humanitarian and genocidal alike), they still persist in our contemporary societies, from east to west, north to south, and on all levels of society, from politics to soccer. And this in spite of the vast body of laws and socio-legal initiatives that have been brought into existence to combat this very phenomenon. This all the more striking, as we all remember the atrocities committed on the basis of prejudiced doctrines, such as the atrocities committed by the Nazi's, the horrible massacre of Hutu's on Tutsi's, the Armenian Genocide, to mention but a few. Even worse, we are witnessing a veritable resurgence of prejudice and bias motivated behaviors in the 21st century, accompanied by an increasing tolerance for xenophobic speech and ideology on a political level. Even though this very brief survey can only be regarded as the very small tip of the iceberg, it does immediately raise the question: *how can this be?* How can it be that we witness and denounce such atrocities, whilst they reoccur periodically in one place or the other? How can it be that mainstream ideology is more tolerant, yet right-wing political movements gain support and xenophobic everyday speech is becoming more and more commonplace? How can it be that the problem of prejudice persists, despite the massive campaigns that have been designed to combat it, both legally and extra-legally, that have been brought to life in the last century? How can it be, that someone who is generally considered to be altruistic and caring, ostensibly goes rogue and aggresses someone from a different group, without any apparent reason? This is the type of questions that inspired me to initiate the current study, in the course of which I will lift a humble tip of the veil to the answer these questions.

So is it a lack of research that might account for this problem? This is dubious, for a wide plethora of research exists with regard to prejudice, especially since World War II. In fact, up until the early 20th century, mainly psychological research conducted with regard to race did not investigate prejudice as such, but was conducted to justify prejudice as a normal response to inferior races (see Rooster, 1930 for an overview). From about the 1950's onwards, this approach clearly began to fade, in part inspired by the atrocities committed by the Nazi's.

Theodor Adorno and his colleagues published their seminal work, *The Authoritarian Personality* (Adorno et. al., 1950), in which they attributed prejudice to a specific personality type, focused on strict rules and their enforcement. This idea is still present in contemporary thinking, be it in a more nuanced form, i.e. *Right Wing Authoritarianism*. This will be a central element in the current research, and elaborated in depth at a later stage.

Another notable historical approach is the seminal work of Gordon Allport, who saw prejudice as an instance of categorical thinking, the latter being one of the basic ways in which people process the magnitude of information they are confronted with on a daily basis (Allport, 1979). At about the same time, Sherif and Sherif conducted their infamous *Robber's Cave Experiment*, showing the arbitrary nature of prejudice, which showed clearly that the mechanism underlying prejudice is triggered even when people are arbitrarily divided into two (or more) groups that were brought in competition or conflict with one another in one way or the other (e.g. Sherif, 1988). This approach differs fundamentally from the Adorno approach, insofar as prejudice is seen as part of our basic psychological wiring, and not some distortion therein or a specific personality. The current research is to be situated in this approach, too.

Current research approaches to prejudice in social psychology are based on these “historical” approaches – which are therefore not “wrong”; they merely got elaborated. One prominent research tradition is research on *right wing authoritarianism* (e.g. Altemeyer, 1981, 1988), based on the authoritarian personality, with the one difference that the former is regarded as an ideological orientation rather than a personality (trait). Of a more recent date is *social dominance orientation* (e.g. Sidanius & Pratto, 1999), which centers around an individual's preference for a hierarchically organized social world. Both modeled together in a single model are referred to as the *dual process model* (Duckitt, 2001). Next to this approach, *integrated threat theory* (e.g. Stephan & Stephan, 2000) is another main player in the explanation of prejudice. In this theory, realistic threats, symbolic threats as well as some more specific types of threat such as status threat, identity threat, and negative stereotypes, are deemed to influence prejudice.

It is surprising to see that within Criminology, not a lot of attention has been awarded to the study of prejudice until recently – especially compared to the domain of social psychology – but advances are being made. Whilst the focus of criminology used to be on race as a predisposing factor to crime as a result of, primarily, structural inequalities (e.g. Gabbidon & Greene, 2005), attention of researchers is shifting to the general phenomenon of prejudice (e.g.

Perry, 2001) and more precise domains, such as political violence and extremist violence (e.g. Bjørgo & Horgan, 2009; Horgan, 2009). There, often the "usual suspects" of general criminological theories are found (for example, self-control, social bonds, and exposure), but from time to time, albeit not enough in my opinion, also elements from other domains, such as authoritarianism.¹

This way-to-brief overview clearly indicates that there certainly is no lack of research dealing with prejudice and bias motivated aggression. Then why, in spite of all existing programs and initiatives designed to deal with prejudice, does the problem persist? One possible reason is a lack of communication between science and policy. For, prejudice has received a lot of scientific attention in the last decades, especially in social psychology. Even though the output of these studies is utterly relevant and has clear implications for practice, it may be that they are not picked up sufficiently by policy makers, or, conversely, that researchers do not sufficiently report on the policy and practice implications of their studies. A second possible reason can be the fact that prejudice is not yet *understood* sufficiently in order to successfully deal with it. Notwithstanding great advances in the study of prejudice, it may be possible that some important elements are missing, or that additional sources of prejudice may be present that shed another light on the ways it is best dealt with. That is, one cannot possibly say if the mechanisms leading to prejudice are understood sufficiently well in order to successfully combat it.

In very general terms, this study tries to contribute to the existing body of literature on prejudice by addressing the issues above. The main aim of the study is to contribute to our understanding of prejudice by expanding current theorization on the topic, as this is the basis of any suggestion as to policy changes or suggestions for dealing with prejudice, which will be presented in a discussion chapter of the study. This way, the study is not so much occupied with an empirical problem (it is clear enough prejudice exists), but rather with a conceptual or *theoretical problem*². For this reason, the initial problem formulation will be phrased in terms of theory rather than in terms of facts. However, in order to do so properly, it needs, of course, to be clear what is to be understood as a theory in this context, how theories operate, what they do, and how they change. If this is not clear, it will prove to be impossible to give clear description of

¹ That is to say, authoritarianism is used in criminological research, but not to explain prejudice or hate crime. Rather, it is invoked to explain violent extremism (e.g. De Waele & Pauwels, 2014) and vigilantism (e.g. Van Damme & Pauwels, 2012).

² See Laudan (1977) for more information on the difference between both.

the problem or the goals of the study. For this reason, the **first chapter** will introduce the reader to the philosophy of science that underlies the study at hand, thus elucidating the problem formulation, goals of the study, and their relevance in a clear and transparent way. By doing so, I hope to provide the reader with a clear insight in the assumptions of the study at hand, which should equally facilitate debate and the critical evaluation of the claims made in the study.

This part of the study is important in my opinion, as the meta-theoretical assumptions on which research is founded are not often made explicit in the realm of the social sciences, with the exception of constructivist scientists who usually open up their scientific discourse with a positioning in the field of constructivism, and a discussion on how this approach differs meta-theoretically from those approaches founded on the natural scientific approach. The reasons why the philosophical rooting of research is largely absent in the social sciences, are probably manifold (*inter alia* a lack of education thereon in regular social scientific curricula), but I sincerely think this is problematic. For, a clear comprehension of the meta-theoretical assumptions, probably even more than theory, can provide a very clear idea of how to pursue the goals set out by a researcher, not in the least by providing clear indications of the nature of the object one wishes to investigate, which can be, *inter alia*, a social regularity, a social construction, a singular instance, or a combination thereof. Every such object is of a different kind, and requires a different logical approach. Lack thereof, can result in an unclear set of inferences made by the researcher, some of which inductive, some of which deductive, some of which unidentifiable. Obscurity in this matter, however, makes it difficult to give a proper interpretation to research findings.

For this reason, I have always borne in mind a secondary goal when conducting this study: the application of Karl Popper's philosophy of science on a social scientific research. I have chosen Popper's work, because I am convinced that he has been one of the most enlightened philosophers of science that have ever walked the face of the planet, yet is oftentimes poorly understood or even blatantly not understood at all. Even though his work applied foremost to the natural sciences, I myself was amazed at the (logical) simplicity of the argument presented in *The Logic of Scientific Discovery* (Popper, 2002 [1959]), and really saw no reason why this way of reasoning about science could or should not be applied to the social sciences. Therefore, I will try to explicitly make reference to his "way of doing science" throughout the text, wherever appropriate. This does not mean that I have found a watertight, failsafe system of falsification in the social sciences – Popper himself would and often has also reject(ed) such a naïve notion of falsification, yet this is the notion usually ascribed to him in social scientific

circles – but rather an attitude; the *attitude to challenge*, to formulate unexpected, *bold hypotheses*, as opposed to the *attitude to confirm*, over and over again, *ad infinitum*.³ To bolster the utility of Popper’s work in the social sciences, I have stuck to the oeuvre of Karl Popper *only*, and will only consider more contemporary interpretations, discussions, or elaborations thereof such as analytical sociology, in the sideline. What Popper said, suffices to be useful in the social sciences in my opinion. As said, this is a secondary goal that stems from my own appreciation of Popper’s work, but I hope you can appreciate the import of his philosophy of science on this study.

In the **second chapter**, the theoretical backbone of the study will be discussed at length. The general theoretical framework chosen to conduct this study is evolutionary theory. This approach is foremost inspired by the fact that (i) prejudice and bias motivated aggression are of all times, (ii) of all places, and (iii) do not respond easily to judicial interventions or other initiatives designed to combat them. From the vantage point of evolution, this gives rather strong indications that, at least at some point in human evolution, this kind of behavior was adaptive, i.e. functional to our survival as a species. Otherwise it would neither have existed on such a large scale, nor would it be so predominantly present. Especially if it were to be dysfunctional, it ought to have been selected out a long time ago.

Apart from these theoretical reasons, it seems to me that criminology has difficulties embracing evolutionary theory or sociobiological approaches altogether in explanatory models of crime. It seems the dominant sociological model is still omnipresent in criminology, and sociobiological approaches are looked at skeptically as they tend to challenge this dominant model (Barkow, Cosmides, & Tooby, 1992; Walsh & Beaver, 2009a)⁴. Therefore, I hope this introduction to evolutionary theory as a *heuristic tool* in the social sciences grasps the attention of the reader in terms of applicability in their own research domains. In this chapter, a brief introduction to the principles of evolutionary theory will be given, followed by an overview of theorizing on the evolution of human sociality. At the end of this chapter, the general aim of this research will be concretized into a general research question: “can contemporary prejudice and bias motivated aggression be regarded as a specific instance of human sociality?”. Given the contra-intuitive nature of this question, it can be regarded as exactly the kind of “bold” research question social scientists should try to come up with in the Popperian approach, at least

³ Even though such attitude would be more practical, and probably more fruitful career-wise, in these publication-obsessed times.

⁴ Even though not nearly as fundamentally as many allege it to.

in my opinion. It also indicates that evolutionary theory can indeed be a good source of inspiration to deduce unexpected, contra-intuitive research questions (and let's be fair, these are the fun ones to investigate), which makes it the perfect accomplice of a Popperian approach to social science.

In the **third chapter**, an overview of current social psychological theorizing on prejudice and bias motivated aggression will be presented. The focus there is on social psychological theories, as they have the most longstanding research tradition in the study of prejudice. However, in the sideline I will make reference to some classical criminological theories as well, to indicate briefly the extent to which they are compatible with the evolutionary framework that is developed in this study.

The **fourth chapter** is the place where the transition is made to a testable model. In this chapter, the selection of the variables to be used in the study will be motivated. By making reference to philosophy of science, the main hypotheses of the study will be deduced, and their rationale explicated, in order to ensure that no steps in the reasoning in this study are left unclear to the reader. This way, a critical and profound debate can be held with regards to the study and its results.

The methodology will be presented in **chapter five**. There, the choice for the respondent groups and possible weaknesses thereof will be discussed. All methodological choices will be motivated from a philosophical point of view, and the way in which falsification will be put to practice outlined. In short, the design is quantitative, using structural equation modeling.

The results are presented in **chapter six**. Two studies have been conducted, one in Spain and one in Belgium. The theoretical model as well as additional hypotheses that serve as additional critical tests for the theoretical model as such, will be tested there. In order to challenge the theory even further, a group comparison based on sex is conducted in both countries, as well as a group comparison based on country. In all tests, the theoretical model developed holds, i.e. the main hypotheses could not be falsified.

In the general discussion, presented in **chapter 7**, the potential threats or weaknesses of the study are discussed. Second, the theory is logically evaluated using the criteria degree of universality, degree of precision, and simplicity, as envisioned in Popper's *Logic of Scientific Discovery* (2002 [1959]). These prove to be useful tools, and the theory is able to achieve a higher degree of universality as well as a higher degree of precision. In that respect, it can be

considered to be a fruitful theory, notwithstanding its relatively low degree of corroboration. Third, the theory is linked to other research areas in which it may apply. In this context, it is linked to the study of violent extremism, victimology, restorative justice, the enforcement of legislation designed to combat discrimination and crime prevention. The theory can make fruitful contributions to any of those fields. This discussion is followed by a general conclusion, in which the main findings of the study are summarized.

Chapter I. Scientific philosophical background and problem formulation

In this chapter, some considerations from the point of view of philosophy of science will be presented. They constitute the general background of the study, and have specific implications for some of the choices made in the remainder of the study. Furthermore, the problem formulation of this study is of a conceptual/theoretical nature, and the meta-theoretic assumptions that underlie the study have an important bearing on the concrete specification of the problem. Therefore, it seems but a good practice making these assumptions crisp clear to the reader. In two words, the philosophical view underlying the study is *critical rationalism* as initially developed by Karl Popper.

1. Ontology and epistemology: the nature of reality and our knowledge

The main ontological view or assumptions regarding the nature of reality underlying this study is *realism*. In line with Popper's own three world ontology, this realism extends to three different kinds of entities, or "worlds" in Popper's own terminology (Popper, 1978b). First, there is the world of all physical objects, processes and events. Second, there is the world of all mental events, processes and dispositions. Third, there is the world of the products of the human mind, such as ideals, scientific studies, and various types of art. This is not the place for an in depth discussion on this specific ontology of Popper's, but it is important to note that it explicitly acknowledges the presence of a physical world without denying the existence of emergent properties such as mental representations, culture, logic and art, which are considered to be no less real than the objects of the physical world. They are considered to be emergent because they cannot simply emerge out of physical objects or be selected for by natural selection.⁵

As Agnew (2011) discusses in his *Toward A Unified Criminology*, one of the main breaking points between mainstream criminology and critical criminology is their respective view on reality. Whereas mainstream criminology assumes an objective reality that can be accurately measured, critical criminologists tend to reject this view, and replace it with one existing out of multiple realities. The ontology adopted in this study in principle takes up a mid-position in this debate: there is an objective reality but it is difficult to accurately measure it, if possible at all.

⁵ What can be selected for by natural selection, is the *potential* to create culture. How this is given concrete shape is, however not a matter of natural selection. Furthermore, they are not "inheritable" in the sense of natural selection, and need to be learned by each newly born individual.

The reason is simple: people are themselves part of that reality, and so are their predispositions that have evolved over time. These predispositions inevitably obscure observations of reality, and they do not allow for an accurate – in the sense of objective – measurement thereof. This, however, brings me to the subject of epistemology.

1.1. Epistemology – the nature of truth

Popper's epistemology is a fundamental breach with the up to then popular view of the Vienna Circle, generally referred to as empiricism. Popper referred to this as the "bucket theory of mind" (for the most clear discussion on the subject, see Popper, 1979, pp. 341-361), referring to the mind as an empty bucket, which is filled with ideas and knowledge by neutral observation. This is, according to Popper, a false belief. According to him, all observation is driven by *expectations*; neutral observation does not exist. This implies it is quite impossible to uncover an objective, fundamental truth; the question is not if such a truth exists, but rather if we are capable of uncovering it with our flawed and selective perceptual apparatus. If our observations are flawed – by expectations, predispositions, physical limitations of our senses, etcetera – then our truth can never be absolute, and it follows that no theory as such can be regarded as being the one ultimately "true" theory⁶ (Popper, 1979, pp. 32-106; Popper & Bartley, 1993, esp. sect. 9-13).

Opposed to this idea, Popper proposed that truth can only be *approximated*, and that one theory may be a better approximation to the truth than another one. The classic example given by Popper is the succession in time of the theories of Galileo, Kepler, Newton, and Einstein. None of these theories are considered to be "the true" one, but neither is either one of them "false": in their own time and place, they did perform the function they were intended to perform – that is, they could resolve the problems they were designed to resolve. Thus, truth is never absolute (Popper, 1979, pp. 32-103). One inevitably flawed theory can only be replaced by a theory that is flawed to a lesser degree. But how does one evaluate the degree to which a theory is flawed if our senses are flawed themselves? The answer given by Popper, and various other philosophers of science, is that the extent to which a theory is flawed can only be evaluated in light of the problems one theory can resolve in comparison to its competitors. As Popper would say, "*all life is problem solving*" (Popper, 1999), but so is all science. It is simply a more organized or methodologically founded mode of problem solving, taking into account the flaws

⁶ A good exercise, explained by Popper, is to ask someone the following simple question: "observe". Usually, the answer you will get is "observe what?".

of human perception and reasoning (Popper, 1979, esp. sect. 3 and 4). This way, it can be argued that the view on science this study adopts is a *pragmatic* view, insofar as it is occupied with solving problems, be it intellectual ones or practical ones.⁷

Thus, compared to the classical two “camps” in criminology, I will take up a mid-position in the current study. Whilst I do not accept the empiricism of many classical schools of criminology, neither do I accept the (hyper)relativism and subjectivism present in other, mainly constructivist and critical, traditions. Thus, whilst I do recognize some kind of social reality (and regularities – see *infra*), I also recognize the existence of emergent subjective thought contents that are rooted in more general dispositions⁸, similar to the three world ontology of Popper’s.

1.2. Deduction and the problem of induction

The study at hands aims at being explicitly deductive or *theory driven*. The reason for this is an old problem that has been identified a very long time ago, especially with respect to the natural sciences, i.e. the *problem of induction*.⁹

The starting point of Popper’s critique on the logical empiricism of the Vienna Circle was the problem of induction, or, as he often called it, “Hume’s problem”. In this context, Hume discerned two different types of problem, *viz.* the psychological and the logical problem of induction (Popper, 1979, pp. 1-32; 2002, pp. 78-87). The psychological problem of induction identified by Hume and discarded as a myth by Popper, refers to the fact that we tend to see regularities in events that periodically repeat themselves, whilst the logical problem of induction refers to the practice of inferring universal statements from a set of singular statements or, to put it differently, to posit regularities or laws (it really does not matter how you call it) on the basis of individual observations, how numerous they may be. This problem clearly is of more relevance to science, as it was the basis of the empiricist philosophy of science which Popper opposed. The emblematic example of Popper’s critique is the regularity “all

⁷ Which should in no sense be confused with the “pragmatism” associated with logical positivism, where science merely is an instrument to predict future events on the basis of present observations, i.e. induction. The sense in which I use “pragmatic” refers to what is to be regarded in the sense of a demarcation of what makes truths significant, or worth pursuing.

⁸ More on this particular point will follow in the chapter on evolutionary theory.

⁹ Even though Popper was foremost concerned with the physical sciences and not so much with the social sciences (Popper, 2002 [1959]), there are some instances in which Poppers makes reference to the logic of the social sciences – be it that this remains an unfinished project. In the current author’s opinion, however, these few ideas can be tied to the original formulation of the problem of induction.

swans are white”, which is formulated on the basis of numerous observations of white swans. In order to maintain this claim, one would in principle need to look for all white swans in the entire world, otherwise one can never be sure of this universal statement. This is the infinite regress that accompanies induction: there really is no end to the process of verification, it can go on forever. In sharp contrast to this, however, the identification of one single black swan suffices to reject the universal statement.

Let us rephrase this problem in formal logical terms, in a slightly different format. What empiricist science does, relates to the mode of inference referred to as *modus ponens*:

P1	Everyone who passes their PhD-defense, is happy
P2	I am happy
<hr/>	
C	I passed my PhD defense

Table 1: modus ponens fallacy

In the table, P refers to premise, C to conclusion, with P1 being a universal statement and P2 and C being singular statements. Basically what happens is a logical fallacy called the *affirmation of the consequent*. As a general rule, any inference is only valid when the conclusion can never be false, if both premises are true. In the example above, the conclusion can be false when the premises are true. What it basically says is that because I am happy, it *must* be so that I pass my PhD defense. That is, passing my PhD defense is a necessary condition for me to be happy. Now while it is undoubtedly true that I will be happy if I pass my PhD defense (and let us hope I do), there are several other reasons why I can be happy as well. So passing my PhD defense is a sufficient, but non-necessary condition for me to be happy. For example, I haven't finished my PhD yet, but I won the lottery. This also would make me happy, whilst it does not deny the truth of the premises in the example. It does, however, render the conclusion false. The only valid inference that can be produced from the inference above is the following:

In falsification, this logical fallacy is acknowledged, and remedied by turning to the *modus tollens*, or the inferential scheme denying the consequent:

P1	Everyone who passes their PhD-defense, is happy
P2	I am not happy
<hr/>	
C	I did not pass my PhD defense

Table 2: modus tollens or denial of the consequent

Here, the conclusion cannot be false if the premises are true. If we, again, regard passing the PhD-defense as a sufficient cause for me to be happy, the fact that I did not pass it *must* also imply the fact that I am not happy. For, my passing my PhD defense is part of the class of events that would make me happy *sine qua non*. This also sheds more light on the fact that a singular statement can in fact reject a universal one, whilst it can never fully confirm a universal statement. For this reason, Popper defended falsification: it is a far better practice to look for a black swan, rather than looking for all of the white swans in the world.¹⁰ However, I think that, next to these two problems, the social sciences are confronted with a third problem of induction: a *substantive* problem of induction. This problem intensifies the difficulties of doing inductive research in the social sciences compared to the natural sciences.

The root of this problem can be traced back to the distinction Popper made with regard to objective and subjective knowledge, and more importantly objective problem *situations* and subjective *perceptions thereof* (Popper, 1979, pp. 112-119). Rather than a physical entity, the objects of the social sciences can be regarded as subjective thought contents, which give rise to behavior in a certain situation, more precisely when someone is confronted with a certain *problem situation* (if there is no perceived problem¹¹ of some kind, how small it may be, it is questionable that either something will be observed or that behavior will be elicited). In line with Popper's situational analysis¹² (e.g. Gorton, 2006), the person acts according to the logic of the situation, in a process of trial and error elimination:

$$P1 \rightarrow TS \rightarrow EE \rightarrow P2$$

When an individual is confronted with a certain problem situation (P1), a tentative solution will be put forth to overcome the problem (TS). This is, however, subject to error elimination (EE). As no one ever disposes of complete knowledge of the situation nor the possible alternative solutions to it, inevitably this will give rise to new problem situations (P2) (Popper 1979, 241-248). However, an important distinction must be made here. The problem to which an individual acts, is a subjective perception of an objective problem situation, and, as Popper indicates (1979, 206-56) "*objective problems in this sense need not have their conscious*

¹⁰ This really is a simplified version of the principle of falsification in a nutshell. Popper acknowledged that it ought not to be applied naively, and that in reality the falsification of entire theories is more difficult as it is difficult to say where the theory fails when not standing up to a test (sophisticated falsification).

¹¹ A "problem" needs to be interpreted in the very broad sense here, it may also refer to a simple desire to satisfy a need, for example. So if I am thirsty, I will go to my fridge and get a glass of water.

¹² Situational analysis is the only philosophical account of the social sciences to be found with Popper. He was foremost concerned with the natural sciences, not the social sciences.

counterpart; and where they have their conscious counterpart, the conscious problem need not coincide with the objective problem”.

From the above discussion, it follows that additional problems with regard to, let’s say “pure” induction follow. If one is interested in explaining behavior, and one simply asks respondents why they did something, it is very likely that the outcome will be flawed given the discrepancies that exist between objective problems and the subjective perception thereof. It furthermore does not make any difference at all if one works quantitatively or qualitatively, the problem is not of a purely methodological nature. In “pure” induction, the only thing that one can do is explain singular actions by singular agents from the singular point of view of those agents (“singular” is mentioned three times intentionally to stress that these explanations need not relate to regularities if one proceeds on the basis of pure induction).

This is not to say that both methods are “wrong” or are “bad”.¹³ They aren’t. They just are in need of a searchlight, which can be provided by knowledge in the objective sense; by theory. Only then can the social sciences aspire to a goal similar to that of the natural sciences: the growth of knowledge. I agree with Popper that the aim of the social sciences is to discover “*new worlds behind the world of ordinary experience* .” (Popper & Notturmo, 1994, p. 105), with a view to “*explain how the unintended consequences of our intentions and actions arise, and what kind of consequences arise if people do this that or the other in a certain social situation*” (Popper 1974, 125). Alternatively put, this comes down to a search for *social regularities* (Popper, 2007, p. 61 ff.). Even if the goal of a scientist would be to understand the actions of an individual, then still objective knowledge is of the utmost importance, *inter alia* to discover where certain subjective perceptions stem from, and why people are susceptible to them.

This, however, does not seem to be the case in most social scientific practice. For the body of knowledge in the social sciences is increasingly diverse, whilst in a mature science it tends to converge into simpler and more universal laws (e.g. string theory in physics). To use the imagery of Popper (1979, 262 ff.), science is like a tree growing in the opposite direction: it starts from a vast variety of roots, and grows up to one trunk.¹⁴ That is to say, as science progresses, we find increasingly universal laws. As opposed to this, the tree of knowledge seems to be growing as a regular tree in the social sciences: with ever more branches. Because of the inductive fallacy, a situation of (theoretical) *overspecialization* presents itself in the social

¹³ More on qualitative versus quantitative methods will follow.

¹⁴ In contrast, to this, applications of science grow as a “regular” tree: towards ever more diverse applications.

sciences. I concede with Popper that the only way for the social sciences is to embrace objectivity, because “*an objectivist epistemology which studies the third world [to be understood as theories] can help to throw an immense amount of light upon the second world of subjective consciousness...; but the converse is not true*” (1979, 112).

The above exposition immediately begs the – very sensitive – question as to what a social law or, put more softly, social regularity may look like. This question in itself has been subject to quite a lot of debate, and has caused a lot of controversy among social scientists, and thus merits attention in the present study as well. In my opinion, these universal statements do not necessarily stem from what is generally labeled as “the social” as such, but rather from biology. What I refer to in this context is the “wiring” of our brain according to long standing survival strategies that have come into existence through evolution (more on what these dispositions are and how they come into existence will be discussed in the next chapter). I will dub these *evolutionary predispositions to act* (for short: EPA) for the purpose of the present study.

It is not my intention to dwell on the precise content of such EPA’s, but the literature in the field is expanding (e.g. Buckman, 2000; Darwin & Zimmer, 2007; Dawkins, 2006; Dawkins, 2006 [1975]; Hauser, 2006; Hinde, 2002; Shermer, 2004). That is to say, there is an established evolutionary benefit in certain forms of behavior (good and bad, from whatever point of view), which have, through evolution, become a predisposition to act which we are not always consciously aware of. Popper was also aware of this, and formulated it in the sense that abstract selection pressures can have a downward causal effect on a concrete organism, by natural selection. These effects may subsequently be amplified by genetic inheritance (Popper, 1978a). A very good example of this which relates to a core debate in both the social sciences and contemporary philosophy is the research of Hauser (2006), who showed that a sense of morality is invariant to culture and to the fact whether or not one is religious. However interesting this may be from a substantive point of view, my aim is to elucidate the meta-theoretical importance such evolutionary predispositions to act may have in light of the social sciences: The evolutionary predispositions may be good candidates to qualify as universal statements, given their relative independence of a particular location in time and space.

Should such dispositions be regarded as universal laws of nature, as in physics? I do not think this is necessary. As argued by Sober (Sober, 1997; Sober & Wilson, 1998) and Brandon (Brandon, 1997), in the wake of Beatty’s notion of Evolutionary Contingency Thesis (Beatty, 1995), evolutionary processes are to be regarded as contingent outcomes rather than laws as

such. However, Mitchell (1997) responds to this by indicating that this line of reasoning implies a normative notion of law, which is not the only possible notion of laws that may be useful to science. I contend with Mitchell that these predispositions in the social sciences can best be regarded as *pragmatic laws*. The main difference with laws is that pragmatic laws are to be defined in terms of degrees of contingency rather than necessary consequences. As indicated above, evolutionary theory does provide pragmatic laws with very high degrees of contingency, i.e. applying to all people over a vast span of time and space (however defined). Especially in the social sciences this notion may prove to be useful as it may enable a treatment of theories by the same or very similar criteria as those applied in the natural sciences. In agreement with Leuridan (2010), I would argue for the usage of pragmatic laws, rather than mechanistic explanations of the social, given that the latter need to be grounded on the former, but not necessarily the other way around. Through this lens, I consider it possible to loosen the deterministic character of situational analysis while not giving up the covering-law model explanation, as does Neves (2004).

Of course, the argument as it stands now fails to provide a satisfactory account of social scientific explanation. Similar to the natural sciences, pragmatic laws only yield an advantage in combination with certain *initial conditions*, and certain *auxiliary hypotheses*. For any social situation is not solely dependent on the physical environment, but equally on the social environment which includes, *inter alia*, social institutions. Now, these institutions are equally independent of individual people, and can be regarded as objective (Popper 1979, 158-159). In this sense, entities such as economy and law can be regarded as man-made products (social constructions), yet existing independently of any particular person. We can look at them as open systems of propositions, more or less axiomatized; in short, as theoretical systems.

This way, the link between the individual, social institutions and universal (as having a high degree of contingency) statements in the form of pragmatic laws may be elucidated. For, it is not likely that people will engage in behavior that may harm themselves or that does not result in any adaptive advantage given a certain situation. Systems such as the economical one appeal (or can appeal) to people as they do because they are engrafted more or less directly on certain evolutionary predispositions to act (more on this will follow in the next chapter, but specifically geared towards prejudice). One need not look too far to see this link, for example the appeal to physical attraction in many commercials, the fact that (group or individual) identity is often accompanied by certain commodities, and so on. So, this system does not operate in complete independence of the pragmatic laws of evolutionary biology, but is based on them. In terms of

the previously set out conception of a theory, one might say that the auxiliary hypotheses which constitute the social environment of an individual in turn “select” the initial conditions in which a pragmatic universal evolutionary law may instantiate in a certain form. And it most likely instantiates in quite a similar form given the same or very similar initial conditions.

This may also clarify why mechanisms require pragmatic laws, but not necessarily the other way around. If we take a mechanism to be “*entities and activities organized such that they are productive of regular changes from start or set-up to finish or termination of conditions*” (Machamer, Darden, & Craver, 2000, p. 2), the particular object of study of the social sciences seems to suggest a necessity for pragmatic evolutionary laws. For, I can think of a vast amount of such mechanisms, which would not in the least appeal to anyone. Any mechanistic explanation in the social sciences which uses elements from such systems as economy, seems to be bound to refer to an underlying pragmatic law (not necessarily explicitly). For example, stating that someone commits a crime because he cannot attain middle class values falls short of being a full explanation: the next question which should be asked is why someone is susceptible to these values, why they are so tantamount in society, and why this is the case here but not necessarily somewhere else. Undoubtedly, many interesting questions can be raised – and hopefully answered – by using pragmatic laws which are situated on a higher level of universality (or, more precisely, contingency) than any mechanism can be, due to its basic dependency on these pragmatic laws.

Thus, on the one hand, we can be confronted with a pragmatic law which is valid for all human beings on, yet people in reality seem to be responsive to very different sets of stimuli (e.g. economy in the west, tribal values in central Africa), and act accordingly. The end result, however, is contingent. To me, this suggests that, in the subjective perception of people, different forms of “rationality”¹⁵ exist which are spread out through a given society by social learning and mere exposure to different kinds of “problem situations”. In this sense, behavior is shaped by pragmatic laws, in combination with a rather specific local context, in which behaviors occur. Whilst the pragmatic laws have high degrees of contingency, the context may vary significantly across time and space. This way, societies may seem completely different, yet based on the same underlying principles. In my opinion, then, I agree with critical rationalism that the primary target of social sciences is neither the individual nor the context/situation, but the constant interplay between them. So, in theoretical terms, pragmatic

¹⁵ In the sense of locally endorsed modes of behavior or reactions to given problem situations.

law as well as the concrete situation may help elucidate how subjective perceptions of objective problem situations arise. Rather than explaining behavior by making reference to certain norms, customs, beliefs, values, and so on (which essentially are part of the context), this approach may encompass possibilities to answer the more fundamental question, i.e. where those norms and beliefs stem from, and how and why they are maintained.

From a practical point of view this implicates that in order to test a theory, a mechanism animated by pragmatic laws may well be used. For, a universal statement as such is not observable. Using auxiliary hypotheses, the particular initial conditions that may shape the universal statement need to be deduced. From this theoretical system, then, a concrete instance (or class thereof) can be predicted, to enable corroboration or falsification of the universal statement (see infra: 1.4. Causation and explanation).

1.3. Structural components of a theory

By means of summary, now the structural components a theory should consist of can be elucidated. These can, considering the above discussion, be regarded as the very same as the components of a theory described in the natural sciences by Popper. In *The Logic of Scientific Discovery*, Popper presents the basic structure of a theory (Popper, 2002 [1959], 37-57). Even though this structure is quite common in the natural sciences, it often is absent from the social sciences. According to Popper, a theory consists of:

- One or more universal statements (conjectures);
- One or more auxiliary hypothesis (if needed);
- One or more initial conditions.

The general idea behind Popper's conception of a theory is that one predicts a certain event on the basis of one or more universal statements in combination with initial conditions, and then subjects this to empirical tests. In the critical rationalist tradition, the idea is to subject the theory to the most severe tests or to try to *refute* it. On a meta-theoretical level, the aim of the natural sciences is to formulate theories that are more universal, in the sense that they entail more, and thus have a higher degree of testability. It must be borne in mind that a universal statement in itself is not observable and therefore not testable. What is observable, however, is its instantiation. This instantiation is only possible within certain initial conditions, which are bound to a specific place and time. The conjunction of a universal statement with certain initial conditions allows it to instantiate, which in turn allows for prediction and the formulation of

observation statements that can be used to critically test the theory and either corroborate or falsify it.

This view on theory allows for a more precise specification of the situation the social sciences are confronted with. As universal laws are a part of world three and can therefore be regarded as objective, the problem of induction in the social sciences can be rephrased in terms of a lack of universal statements in the social sciences. Let us take a look at the interpretative sciences, in terms of the structural components of a theory. Theories formulated on the basis of interpretative methods only make use of *individual concepts* (Popper 2002, 41-7). This is due to the fact that they limit themselves to what people perceive to be the problem situation to which they react (in terms of situational analysis); the concepts derived from such practice are limited to a particular person, in a concrete place and time. The statements that may be constructed by means of such concepts, are *existential* (Ibid., 47-50). This means that they can only say something about this concrete time and place (i.e. particular statements), or even only this specific person (i.e. singular statements).

Pretty much the same, however, holds for the positivist social sciences. Apart from the well-known criticisms on induction, it may be added that the concept of universality (and therewith objectivity) the positivist social sciences pursue is only *numerical universality* (Popper, 2002 [1959], p. 40 f.). This means that, by relying on observation statements without specifying the relevant universal law, the positivist universalizes his propositions by means of a conjunction of singular statements. That is, it is still bound by a specific place and time. In this sense, it would be, in principle, possible to enumerate all the individual singular statements the numerically universal statement refers to. This stands in contradistinction to *strict universality*, which is invariant to particular locations in time and space (or, by comparison to its predecessor theories, less variant to time and space). It follows that the concepts used in the propositions in principle are singular in nature as well. This logic is prone to the logic of frequentist probability, which is still unable to dispel the classical problems associated with inductive logic (Popper 2002 [1959], 263), viz. an *infinite regress*.

1.4. Causation and explanation

In current philosophy of science, subjects such as “cause”, “causality” and “causation” take up a central place. The question that poses itself, then, is how do these concepts tie in with the structural components of a theory set out above, and – equally important – how are they translated to practice? Let us first consider the *principle of causation* defined as the rule that

everything must have a cause. This principle in itself would be untestable, in the sense that it is either a *logical tautology*, as one can always find a cause for any given event, or an untestable statement about reality, as *no potential falsifiers* can be identified to challenge such a principle. For this reason, Popper did not accept (nor reject) a principle of causation. It simply does not fall within the scope of science as such – demarcated by the criterion of testability – but rather it is to be placed in the field of metaphysics (Popper, 2002 [1959], esp. sect. 12). Other notable thinkers on the subject are usually in agreement with this. In this sense, for example, Bunge – which can be regarded as an authority when it comes to causality – clearly indicated that not every event is caused, and that certain events exist *per se* (see Bunge, 1959, esp. sect. IV). Thus, I will neither adopt a principle of causality in this study, first of all because it is untestable and therefore metaphysical, but, secondly, because it is not a necessary yet ontologically very important assumption to make.

The fact that I do not assume an ontological principle of causality, does not preclude a discussion on what can logically be seen as “cause” and “effect”. In this sense, the above exposition on the structural components of a theory offers the answer. What is usually called “cause” are the initial conditions, and what is usually referred to as the “effect” is the prediction that is derived from the conjunction of a universal statement with these initial conditions (Popper, 2002 [1959], 39-40). Also note that reference is often made to “proximate” and “distal” causes in contemporary social science, in line with the vocabulary used by certain philosophers in other spheres, analogous to Dretske’s distinction between “structuring” and “triggering” causes (Dretske, 1988; Sandis, 2008). Even though one could argue that, in the sense of cause adopted here, the universal statement is the structuring or distal cause, and the initial conditions the triggering or proximate cause, I will not adopt this language here. For *both* are needed in order to constitute a causal explanation, and both are present at the same time, constituting the instance in a parallel way (making them equally “proximate” or “distal”).

In contemporary criminology, another, similar, terminology has emerged recently, i.e. *causes of the causes* (e.g. Wikström & Sampson, 2006). This terminology might be better suited to describe causation as adopted in this study, in the sense that the universal law in principle constitutes the underlying cause which is given shape by the initial conditions, resulting in a particular instance thereof. However, recall that a universal statement in itself is unobservable – therefore unmeasurable and untestable. From this it follows that the only way social scientists can proceed to testing a universal statement is through initial conditions, for example by relating two distinct instances of the same universal statement with each other, as will be done in this

study. Given that the one instance is not the cause of the other, causes being defined as initial conditions, the terminology causes of the causes may be misleading, for which reason I will not adopt it in this study. This cannot, however, be regarded as a critique on scholars using this particular terminology. They usually adopt it in more general theories of crime. In such theories it does make sense to utilize this terminology, as both general and domain specific variables are used in explanation. In the current study, however, the focus only is on domain-specific variables, *viz.* variables that are specifically relevant to the cognitive module deemed responsible for prejudice, whilst general domain variables, that relate to a wide array of behaviors, such as self-control, are not included.

What it means, then, to explain something also relates to a core aspect of the structural components of a theory. For, an event or class of events can be regarded to be explained, if it is derived as a prediction from a universal statement and one or more initial condition(s). Thus, an event can be regarded as explained if it is unified under a more general, universal statement. This account of explanation is inherently present in the critical rationalism as elaborated by Popper, but can also be found as one of the main approaches to explanation in contemporary philosophy of science, as elaborated by, for example, Kitcher (Kitcher, 1981, 1989). To evaluate the “level” of unification, two aspects are of great importance: *level of universality* (as per Popper) or alternatively *generality* (as per Kitcher), and *simplicity*. Both of these terms will be elaborated on *infra* (chapter 7, section 1). Thus, for the purpose of this study, a causal explanation will be an explanation that (i) unifies a phenomenon with other phenomena under a more universal statement/law and (ii) utilizes one or more initial conditions as “causes” of the phenomenon to be explained, which is the prediction deduced from the universal statement in conjunction with one or more initial conditions.

Given that the focus of the current study is on the phenomenon prejudice on a population level (see *infra*, sect. 1.5.: The object of study and prediction), and not on any particular incident of prejudice, the notion of *causal chain* is less of importance. Rather, the notion of *difference making* is applied here. Difference making refers to the case where a certain presumed cause (initial condition) contributes to the production of a certain effect in a meaningful way (see Strevens (2004) for a more detailed discussion on the role of difference making in a unificationist account of explanation). Given the complexity of social phenomena, where causation is usually not simple, *viz.* one cause and one effect, but multiple, *viz.* multiple causes and one effect or a single cause and multiple effects (see Bunge, 1959, esp. sect. III for a more

detailed account), is the main concern. A strict counterfactual model would therefore not be suited.

A better approach to the value of a cause in this sense would be Mackie's operationalization thereof in terms of INUS conditions, or to regard a cause as insufficient but non-redundant part of an unnecessary but sufficient condition for the explanandum to occur (Mackie, 1965). This renders the question of causation a question of degree rather than a "yes or no" question often assumed in counterfactual models (especially in simple causation). This makes the question one of *causal relevance* or the question whether or not a certain cause *contributes* to the effect or not (see Strevens, 2004). In research, often (and implicitly), a probabilistic criterion is maintained in order to indicate causal relevance. I will adopt such a criterion, too.

Thus, in summary, a causal explanation is an explanation that unifies a certain phenomenon under a more universal law, and that predicts the phenomenon by deducing it from that universal law by restricting it by specific initial conditions. In practice, the causal relevance of a presumed cause is estimated in a probabilistic way. If the presumed cause increases the probability of the phenomenon to occur (or is influenced by the cause in a statistically significant way), it will be presumed to be a nonredundant cause in terms of Mackie's INUS conditions. The object of study and prediction

1.5. The object of study and prediction

As argued, *inter alia*, by Heylen and Nachtegael (Heylen & Nachtegael, 2013), a distinction can be made between the study of social *phenomena* and the study of *individual cases*. This idea is congruent with the above analysis of both theory and causality. For the probabilistic criterion of causal relevance focuses on social phenomena, ultimately to be found at the highest levels of universality (population level). Such an explanation only provides an account of the "usual suspects" that make a causally relevant contribution to a given phenomenon, amongst other possible causes. It follows, then, that such a cause is not applicable to individual cases, which are of a singular nature, and thus located on a much lower level of universality. The distinction is not trivial; for one individual case, for example an individual person, may be part of many social phenomena (or regularities) at the very same time, which foreground and background according to the situation the person finds him- or herself in (*ibid.*).

For example, John may display empathy, a general phenomenon, but this empathy does not necessarily always manifest itself in the same way. This is bound to the situation in which John finds himself, or the initial conditions to put it in terms of the structural components of a theory.

That is, in interaction with other elements, such as specific persons, his empathy may be triggered or not. For example, it is more likely that John will show empathy towards his children (which is a very well-studied and cross culturally prevalent regularity, both in man and animal), whilst he may not show this empathy to the man who just robbed him. Thus, in this example the manifestation of empathy is dependent on the situation John is confronted with, or the initial condition of who is at the receiving end of the empathy. Next to these conditions, John also has varying degrees of membership in other “regularities”. Next to empathy, he may also dispose of vengeful tendencies. These are the ones more likely to emerge in the case of the robber, instead of the empathic tendency he disposes of. Thus, this regularity is also dependent on the specific situation, *viz.* initial conditions, John finds himself in.

This way, one can study phenomena at the population level, but that is all they are: phenomena, animated by regularities with a relatively high degree of contingency over time and space. These phenomena are, however, to varying degrees present in individual people, and a great many of those, often contradictory ones, are operating at the same time. Further, they are foregrounded and backgrounded depending on the situation the person is facing. This implies that prediction in the social sciences is a matter of population level phenomena, and not of individual people. Due to the complexity and adaptability of people, it would be unrealistic to predict individual behavior, only abstract phenomena are susceptible to this. Explanation of individual behaviors (retrospectively, so not prediction), is a matter of in-depth, qualitative research, in which the entire causal chain leading up to a certain behaviors is unveiled.¹⁶

1.6. Substantive assumptions with regard to crime and criminology

As may already have appeared from the above, a lot in this study is based on the views on human behavior adopted in the field of evolutionary biology. In order to finish this section on the assumptions underlying the study, the assumptions underlying various theoretical strands as discussed by Agnew in his *Unified Criminology* (Agnew, 2011) will be presented, but filled in from the point of view of evolutionary theory (more on this theoretical strand from a substantive point of view will follow in the next chapter).

¹⁶ It is, however, advisable to utilize universal laws to guide such an explanation; to see how these laws have instantiated and influence each other. On the one hand this may provide a safeguard against the notorious problem of induction, on the other, it may shed more light on how different universal laws relate to each other.

The nature of crime. In evolutionary theory, behavior is behavior, if this is labeled as deviant or criminalized or not. The only thing that is taken into account is whether or not the behavior is or has been adaptive at a certain point in time in the evolution of humanity.

Determinism versus agency. In evolutionary theory, with regard to human behavior, mankind is endowed with certain “modules” or psychological information-processing mechanisms that were formed by selection pressures, and thus are functional to the survival of various sets of genes (Kurzban, 2010). An example which will be of central importance to this study is “coalitional computation”. These modules provide a kind of blueprint of behavior, and thus the human mind is not regarded as a blank slate. However, these modules do not dictate concrete behaviors, they only represent propensities in my view, and nothing more than that. How these are given substance is a spatiotemporally contingent matter. Thus, whilst people do have of a great amount of agency, they are also prone to certain predispositions (e.g. the aforementioned EPA’s). Constant interaction between both, and between different modules, makes human behavior a ultimately complex matter, which cannot be labeled as “deterministic” in the strict sense of the word. The modularity of the human mind does, however, allow for prediction and testing on an aggregate level (see also supra – the object of study and prediction).

The nature of human nature. This question is often treated as if the nature of human nature is an all-or-nothing question in social sciences: i.e. either people are fully selfish or fully altruistic.¹⁷ Evolutionary research, however, clearly points out that people have *both* selfish and other regarding interests, and thus once again the current study finds itself in between of both existing alternatives (e.g. Pinker, 2002; Walsh & Beaver, 2009b). These notions will furthermore be of central importance in the remainder of the text, where selfish and other-regarding tendencies – to be understood in the biological sense – will be modeled in interaction with each other.

The nature of society. This is probably the most tricky assumption following from evolutionary theory, and is a topic on which entire libraries have been written. To keep it short – as this is a very complex and intricate discussion that will in part be reproduced throughout the text in this study – culture (and all its institutions) is viewed as a product of (evolved) psychology. Building further on the previous assumptions, and on evidence derived from different disciplines,

¹⁷ Both the terms are to be understood in the biological sense: altruism, in this sense, means conferring a benefit on someone else without benefitting therefrom directly, whilst selfish means reaping the benefits of others without reciprocation. Both terms will be further explained in the next chapter.

including evolutionary biology, cognitive science, behavioral ecology, psychology, hunter-gatherer studies, social anthropology, biological anthropology, primatology, and neurobiology, Barkow, Tooby and Cosmides posit the following overview in *The Psychological Foundations of Culture*, the first chapter of their groundbreaking book *The Adapted Mind* (Barkow et al., 1992, pp. 23-24):

- The human mind consists of set of evolved information-processing mechanisms instantiated in the human nervous system;
- These mechanisms, and the developmental programs that produce them, are adaptations, produced by natural selection over evolutionary time in ancestral environments;
- Many of these mechanisms are functionally specialized to produce behavior that solves particular adaptive problems, such as mate selection, language acquisition, family relations and cooperation;
- To be functionally specialized, many of these mechanisms must be richly structured in a content-specific way;
- Content-specific information-processing mechanisms generate some of the particular content of human culture, including certain behaviors, artifacts, and linguistically transmitted representations;
- The cultural content generated by these and other mechanisms is then present to be adopted or modified by psychological mechanisms situated in other members of the population;
- This sets up epidemiological and historical population-level processes; and
- These processes are located in particular ecological, economic, demographic, and intergroup social context or environments.

This way, what society ultimately looks like is a result of the evolution of the human mind, in combination with interactions with the environment. From this, the integrative approach that biosocial criminology represents is apprehended: it seeks to explain why similar environments produce different outcomes for different people (hence the focus is on the person), and how different environments may produce similar outcomes for different people (where the focus is on the environment) (e.g. Walsh & Beaver, 2009a). Hence, even though the *ultimate foundation* of culture and society is the human mind, a synergy exists between individual people and the environment.

2. Problem formulation

As indicated earlier, the problem formulation underlying this study is of a conceptual nature, insofar as it is concerned with the theoretical dimensions of prejudice and bias motivated aggression. More precisely, it is about “*when theory fails to utilize concepts from other, more general theories to which it should be logically subordinate*” (Laudan, 1977). Even though this formulation is quite strong, the implications of such a failure, in principle a failure of integration¹⁸, are discussed below. This will be followed by a brief exposition of the main goal and questions of the study.

Various disciplines have been involved in explaining prejudice and its most obvious manifestations such as bias motivated behaviors.¹⁹ Contrary to sociology, in psychology, an interest in prejudice (and its like manifestations), more precisely the origins of prejudice, has existed presumably since the early 1930s. This is probably due to the fact that the sociologically dominated field of criminology mostly gains an interest in a topic starting from its criminalization or its being labeled as deviant, which was not necessarily the case in the 1930 when overt expressions of prejudice were quite common. Further, whilst psychology has mostly been occupied with the explanation of prejudice itself, criminology has been mostly occupied with explaining offending *by* minorities, less so with explaining prejudice and the commission of hate crimes themselves (e.g. Gabbidon & Greene, 2005; Higgins, 2010). Another notable difference between both strands of research is that criminology has equally been occupied with the criminalization of hate crimes and the criminalization of minorities in penal law (thus referring to a form of institutional discrimination), the latter of which is foremost done in critical criminology.²⁰ Insofar as these different strands seem to exist side by side, with no or little cross-fertilization, it might be an interesting endeavor to integrate both in order to connect micro and macro processes, as well as bridging the gap between different etiological approaches and different types of responses to reduce prejudice and bias motivated aggression, of which criminalization is but one. This connection in itself might provide vital information on how to

¹⁸ It can, at least in my opinion, be equated with a failure of integration looking at social scientific practice. For, both by utilizing a more general theory to incorporate the “subordinate” (in terms of generality) theory, and by integrating two theories, thus constructing a more general theory, the aim Laudan seems to refer to is addressed.

¹⁹ Throughout the text, I will use the term bias motivated aggression in order to avoid confusion with those instances of bias motivated aggression that are criminalized, as an aetiology thereof in terms of evolutionary theory is not concerned with the legal status of a category of behaviors.

²⁰ Which is not within the scope of this study, as it is only occupied with the etiology of prejudice and bias motivated aggression.

overcome the persistence of prejudice and bias motivated behaviors notwithstanding the various legal and social initiatives that have been developed in order to combat it. Thus, one problem with regard to the explanation of hate crime and prejudice more in general can be labeled *overspecialization*.

A second problem in the explanation of prejudice and hate crime that follows from overspecialization, is the *conceptual obscurity* surrounding the theme. An overview of the literature at hand learns that a wide variety of terms, which are all related and often used interchangeably, can be found to label the object of study. For the purpose of illustration, a grab out of the offer: blatant prejudice (e.g. Pettigrew), overt racism, old-fashioned racism or prejudice, subtle prejudice / racism (Pettigrew & Meertens, 1995), modern prejudice (Pedersen & Walker, 1997), modern racism (Akrami, Ekehammar, & Araya, 2000), implicit prejudice (Sears, 2004), unconscious racism (Duster, 2008; Quillian, 2008), internalized racism (Pyke, 2010), scientific racism (Carter, 2007), systemic racism (Feagin, 2004), new racism (Vala, 2009), xeno-racism (Sivanandan, 2001), two-faced racism (Watkins-Hayes, 2009), implicit racism (Yoo, Steger, & Lee, 2010), horizontal racism (NGO websites), institutional racism (Pilkington, 2008), state racism (Rasmussen, 2011), historical racism (Birbir, 2007), contemporary racism (Dirlik, 2008), color-blind racism (Bonilla-Silva, 2002), latent racism (Staurowsky, 2007), and of course not to forget the related general terms such as xenophobia, colorism, white supremacy, redlining, racial purity, black/white supremacy, racial discrimination, ethnic nationalism, fascism, radicalization, ethnocentrism, and so on. By writing down all of these different terms in one paragraph, I certainly do not want to critique the authors that employ them as they undoubtedly have good reasons to use a specific term for the purpose of their own research and for the purpose of clarity. What I do want to stress, however, is that none of these names is “better” or “worse” than any other.

One threat to scientific progress (and, by extension, in the applications thereof – see section on the philosophy of science) that is indicated by this is that in many cases the focus is on very specific cases of prejudice, or on a specific context in which it emerges. In other words, this indicates that one finds a lot of literature dealing with specific *instances* of prejudice. This problem may be referred to as *superprecision* (own terminology). In itself this is not a problem, but it can become a problem if the more universal statements are omitted from the explanation. The problem this may lead to is the fragmentation of a field of study; a loss of coherence in theoretical explanations. This lowers the explanatory power of a field of science and its predictive power and puts limits on its practical utility.

What was just labeled as superprecision in principle is a variant of overspecialization discussed in the previous section. Even though the names are arbitrary, with overspecialization I refer to the fact that no or little communication exists between different fields of study that share a research object, and with superprecision I refer to the situation in which the research focus within one domain is heavily skewed towards either a specific context or specific instance of an otherwise more universal mechanism, without taking into account this more universal mechanism.

3. Goals of the study and their relevance

The problem formulation from the previous section may be briefly summarized as (i) the persisting problem of prejudice notwithstanding various legal and social initiatives that have been developed to combat it and a strengthened international interest in the topic, (ii) theoretical overspecialization or a lack of interdisciplinary efforts in studying the problem in all of its facets, and (iii) superprecision within disciplines which may entail a barrier to the unification of science and thus the growth thereof. On this basis, the following general goals of the study can be formulated.

3.1. Theoretical goals: integration and unification

The first goal of the study is to integrate the insights of different disciplines into one coherent framework. This goal can be done in two distinct ways. First, one can integrate the findings with regard to the etiology of prejudice and its various manifestations across disciplines. This is an obvious goal of the current study, in which the literature of primarily social psychology and evolutionary theory will be brought together in one coherent theoretical framework. The overall goal of theoretical integration, then is “the act of combining two or more sets of logically interrelated propositions into one larger set of interrelated propositions, in order to provide a more comprehensive explanation of a particular phenomenon” (Thornberry, 1989, p. 75).

Integration can be done in various ways. A distinction can be made between conceptual integration on the one hand, and the integration of propositions on the other hand. Given the fact that the current study is of an interdisciplinary nature, first conceptual integration will be attempted. The reason for this is to see if a common ground, or common vocabulary, can be found in order to connect the various disciplines occupied with the study of prejudice and bias motivated aggression. Once this common ground is found, integration of propositions will be done, in the form of a model in which various propositions of the different disciplines are connected “end-to-end” style (Pauwels, Ponsaers, & Svensson, 2009).

The second theoretical goal of the study is unification of the theories on prejudice and bias motivated aggression, and this goal is strongly related to the former goals of integration. Unification implies to bring the theory to a higher level of universality, i.e. to give a common theoretical basis to existing theories that are located on a lower level of universality. If at least the same degree of precision, defined as the number of predictions that can be derived from it, is retained by the theory, it can be evaluated as “superior” to the other theory, at least from a logical point of view. From a pragmatic point of view, a theory can be considered “better” if it is able to resolve issues that former theories did not resolve, or did not acknowledge. In the current study, both the practical and the logical criteria to evaluate theories will be adopted (Popper, 2002 [1959], esp. sect. 36). In the discussion section of this study, the theory will be thoroughly logically evaluated. There, both universality and precision will be examined in detail and applied to the theory developed in this study.

To concretize this goal, the theory that will be used in order to achieve both forms of integration is *evolutionary theory*. The reason for this is, as Beaver and Walsh (2009) state, that this theory allows to ask for “ultimate” causes of behavior, thus causes that are basically at the highest possible level of universality, as they have helped to shape mankind into what it is today. For this reason, it is presumably at the limits of universality as well, which implies that it is a very good candidate to achieve the goal of unification.

Content-wise, the study will focus on the evolution of human sociality, which - as will appear in the next chapter – relates strongly to intergroup conflict, exclusion, informal punishment, and like concepts. The main hypothesis that will be put forth there, is that prejudice and bias motivated behaviors can be viewed as the flipside of human sociality. That is as much as saying that they are very specific, *conditional* instances of human sociality. This may sound strange at first sight, but will be explained more in depth in the next chapter. In any case, this gives rise to the first main question that lies at the basis of this study:

Can prejudice and bias motivated behaviors be viewed as instances of human sociality?

This general question will subsequently be reformulated and refined into specific sub-questions, to finally result in a theoretical model on prejudice. Given the distance between the distant evolutionary past and our current society, the evolutionary cause will be conceived of as a macro-level framework for the contemporary explanations social dominance orientation, right wing authoritarianism, and intergroup threat. Throughout the chapters that will follow, this

general main question will be refined into subquestions and concrete hypotheses to be tested empirically.

3.2. Practical goal: implications for practice

Next to this theoretical goal, however, the study tries to be pragmatic as well (all life is problem solving, right?). Given the persistence of the problem, in a discussion part of the study, the focus will shift to the implications for practice of the empirical study. The focus will be on the utility or desirability of dealing with prejudice and bias motivated aggression in a punitive way, and possible alternatives will be explored. This part will serve as a source for inspiration for further research and policy recommendations. The general question underlying this part of the study is:

What are the implications of the theory for policy and practice?

This question is of great importance in dealing with prejudice and bias motivated aggression, as the currently adopted evolutionary approach seems to suggest that a punitive response may result in undesired effects that stand in stark opposition to the goal of remedying prejudice and bias motivated aggression, insofar as there is a rather important *signaling* function attributed to prejudice, which, in evolutionary terms, may be seen as *moralistic aggression*. Insofar as the success of signaling is fully dependent on the cost of that signal, and given that a punitive response significantly increases the cost of the signal, any deterrent effect is not to be expected. Quite on the contrary, it might even be so that this may even incite the behaviors it seeks to erase from society. More on signaling will follow in the third chapter, whilst an in-depth discussion on the possible unintended consequences of enforcement of anti-discriminatory legislation follows in chapter 7, section 3.3.

3.3. Criminological relevance

Even though the above mentioned goals may be relevant from a variety of points of view (such as theoretical relevance and policy relevance), it may be useful to indicate how the study is relevant to the field of criminology. In the end, this is a PhD in criminology, so it is not a redundancy to indicate where it ties in to the main body of criminological research, or at least to clarify the potential the current study has for the field of criminology. In this sense, criminology can be regarded as a very wide field of study, incorporating a wide variety of approaches, which often complement each other but equally so often stand in stark contrast to each other, and in which a wide variety of topics are covered. Indeed, quite recently an entire

book entitled *What Is Criminology* (Bosworth & Hoyle, 2011) was published, which gives a clear indication of the fact that criminology is at least a diverse discipline, still trying to define itself (if this is needed anyway; in my opinion such diversity can prevent a discipline from stranding in its own practices through constant dialogue, discussion, critical reflection and innovation).

This question may be especially relevant to the current study, as the focus will be on evolutionary theory and social psychology, rather than the theories that are usually applied in what may be called mainstream criminology. This choice, however, is inspired by a variety of reasons. First, psychology is an integral part of criminology's interdisciplinary mix of approaches, and evolutionary psychology can be regarded as the meta-theoretical framework of social psychology (Barkow et al., 1992; Buss, 1995), or even the social sciences as a whole (Ploeger, 2010). Therefore, the integration of current social psychology and evolutionary psychology seems but a logical starting point. Second, the social psychological study of prejudice is usually limited to the *ideology* of prejudice, and not so much related to *behaviors*. In the current study, the dependent variable will be bias motivated behaviors, which automatically extends the scope of current psychological approaches. Third, the current study can be placed in the broader field of *biosocial criminology*. Even though this field is booming, studies explicitly grounded in evolution and especially evolutionary psychology remain rather rare (some examples include (some examples include Armit, 2011; Blokland, 2005; Boehm, 2011; Eisner, 2011; Ellis & Walsh, 1997; Roth, 2011; Wood, 2011). And, last but not least, the usually used criminological theories will not be discussed as they are not used in the empirical study conducted for the purpose of this study. This is done in order to maintain a strict and very clear scope of research, in line with the critical rationalist view on science. There, a test ought to be as clear and strict as possible, otherwise it may be (i) more difficult to point out exactly where the test went wrong if it does go wrong and (ii) it is way easier to come up with *ad hoc* protective hypotheses in complex models incorporating a great many variables.

This does not mean, however, that this study is not relevant to the most widely used approaches in contemporary criminology. Quite on the contrary, it may be an ideal candidate to unify these theories into one coherent, complementary framework, whilst it may be at stakes with other theories – or at least provide insights to further refine specific ideas. For example, social disorganization theory (Shaw & McKay, 1942) would be compatible with the evolutionary view that will be discussed in the next chapter, where horizontal transmission may be translated to the presence of subcultures approving of crime. This also holds for social learning theory

(Akers, 1998), as horizontal transmission basically means that people pick up the habits of the majority of people in their environment, and especially the habits of those they deem to be successful. Furthermore, a lot of attention will go to a perception of conflict or competition, which makes the theory at least compatible with strain theory (Agnew, 1992), another big theory which is very salient in contemporary criminology. The theory to be developed in this study is at stakes, however, with social control theory (Hirschi, 1969). Whereas social control theory posits that social bonds, of any kind, are protective of crime, the evolutionary approach to prejudice and bias motivated aggression will posit exactly the opposite: social bonds or sociality will *contribute* to the instantiation of prejudice and bias motivated aggression rather than prevent it, *if the conditions are right*. Even though this study is not the place for an in-depth discussion on integration of criminological theories (which would require another PhD in my opinion if it is to be done properly), I will make brief reference to points of overlap and points of contradiction with the evolutionary framework, in order to show the unification potential of the latter.

4. Design and Methodology in a nutshell

The focus of the study is on a specific social phenomenon and tries to uncover a regularity on a higher degree of universality which may be considered to be a structural cause of it. Given this focus, a quantitative research based on the causal relevance interpretation of causality seems to be the most appropriate, taking into account the discussion on theory and causality above. That is, the aim consists of uncovering a regularity, which cannot be done by means of the process theory of causality (or its usually accompanying qualitative methods).

The general design opted for is a *quantitative survey research*. Given the fact that the aim of the study is to uncover a rather new approach to the study of prejudice and bias motivated behaviors, a survey design seems to be very well suited. The primary aim is to uncover a robust regularity, and therefore it is warranted to reach a rather large group of people. Surveys are an excellent way to do so in a timely and comprehensive manner.

As the research is inspired by evolutionary theory, the results should go into the same direction in different countries, as functional adaptations are presumed to have evolved for all of mankind in our ancestral past. For this reason, a comparative research has been executed in two countries, i.e. Belgium and Spain. The aim of this is to provide for an additional test of the robustness of the results across countries. Apart from differences in effect sizes due to cultural variation, no substantial differences are expected between both samples.

The *target population* of the survey are university and college students. This is foremost inspired by practical considerations. This way, it is possible to generate an international comparison with the means and time available. Further, it has been noted in meta-analytic reviews that there is no difference in the direction of the results using a student sample compared to a general population sample, there are only differences in the strength of these relations with regard to the well-validated measures used (Sibley & Duckitt, 2008, pp. 254-268). Student samples usually yield stronger results than adult populations.²¹ All of this will be clarified and elaborated in chapter 5, where the methodology of the study will be thoroughly dealt with

The *measurement scales* used in the survey are mainly existing and validated scales used in social psychological and criminological research on the topic. This has been done in order to make the study comparable to existing scholarly work on prejudice and bias motivated behaviors. It is important that the theoretical import of the study is not an “island” in the extensive body of research that exists with regard to the topic, as it can only be evaluated in light of existing research on the topic. Further, it is a study into the evolutionary underpinnings of current explanations, and therefore some contemporary salient approaches in the explanation of prejudice are also incorporated in the survey. From a practical point of view, one does not have to invent the wheel again either. However, given that the aim is to study a rather specific process, two scales have been developed for the purpose of this study: *genuine* signaling of sociality and *deceptive* signaling of sociality. These concepts are directly derived from the evolutionary theory, and the operationalization thereof based on existing research into popularity, peer pressure, and conformity. The scale construction process is discussed elaborately in the methodology section.

5. Concepts and quarrels over words: practical agreement on terms used in the study

Before moving on to the structure of the dissertation, a short note on the use of concepts seems to be warranted, as this seems to cause a lot of confusion and seems to lead to many discussions on “which concept should be used”. And, as indicated earlier, a lot of different terms exist in

²¹ Which does NOT automatically imply that they are more “prejudiced”, it may equally refer to higher social desirability among adults.

the study of prejudice, both within and between the various disciplines it is concerned with. In short, I agree with Popper on this matter:

...problems of definition, or of 'analysis', or 'explication' are, by themselves, without any significance; they can be significant only relative to other and more serious problems. It can never be a rational enterprise to replace a term by a more 'exact' one – this really is not a serious problem; but it may become a serious task in connection with some serious problem whose solution might be made easier if we had a definition, or if we cleared up some terminological ambiguities first [...]
Incidentally, there is a whole category of problems that looks as if their solution might be furthered by a definition while in fact definitions would merely rob them of their empirical character, by turning a factual problem into a verbal one.
(Popper, 1979, pp. 275-276)

To avoid confusion over terms and quarrels over words, I will use the terms “prejudice” and “bias motivated behaviors/aggression” in order to refer to the subject matter at hand, whenever I am speaking of the theory developed in this study. In this context prejudice refers to the attitude in which negative traits and qualities are ascribed to entire groups of people, so defined on the basis of a – in principle arbitrary – specific marker. Bias motivated behaviors, then, refer to the plethora of actions one can take inspired by such an attitude, ranging from being uncomfortable being around people of certain out-groups, to outright racist violence. Given the evolutionary nature of this research, it is not concerned with criminalization processes nor the fact whether or not certain behaviors are criminalized or not.²² Wherever appropriate, I will use the original terms used by researchers when discussing their work. Let us agree on this as a practical matter, a lot of which will become more clear throughout the text. In order to give the legal/punitive aspect a place in this study – I am a criminologist after all – an entire section of the discussion is devoted to the socio-legal implications of the study, how it relates to punishment and its alternatives, and how it relates to current policy regarding prejudice and bias motivated behaviors.

The reason why so many quarrels over words exist over these terms especially in criminology can probably be traced back to the fact that criminology usually is carried out either in faculties

²² Even though this institutional context can – and does – impact on the manifestations of certain behaviors. Those include criminalized but also non-criminalized behaviors, so there is no need to be concerned with criminalization of acts; I will only look into the etiological aspects of such behaviors.

of law, and that many criminologists in fact are sociologists of law or lawyers as such. This is not a problem as such, but may generate a Babylonian confusion of tongues, for the following reason. As Brigandt (2010) elucidates, a concept consists of (i) an empirical referent, (ii) inferential role, and (iii) epistemic goal. In short, the empirical referent is the object the concept refers to in reality. The inferential role of a concept is the place it takes up in a body of propositions, and the connections between this body of propositions and the concept. It is basically where the concept fits into the wider theoretical approaches that exist with regard to the area of study the concept is part of. The inferential role of a concept is the purpose of the concept, the reason why it is invoked. Let us briefly consider the differences between the concept “racism” for example, as viewed by a social scientist and a lawyer (and again, there is no “better” or “worse” approach, there are only two *different* approaches with different goals.

Admittedly, the comparison is a rather basic and short one, but I hope it displays the vast differences that exist between a legal approach and a behavioral approach to the subject matter at hand. Even though the two are commensurable at some point, often discussions are held with very different background assumptions, necessarily leading to nowhere.

	<i>Social science</i>	<i>Law</i>
<i>Empirical referent</i>	The entire range of prejudiced behaviors, ranging from negative emotions over micro-aggressions to severe “hate crimes”	Only criminalized forms of bias motivated behaviors
<i>Inferential role</i>	Placed in a web of behavioral propositions	Placed in a web of normative propositions
<i>Epistemic goal</i>	Explaining a particular form of behavior in all its manifestations	Symbolic signaling of values and constraining a particular (criminalized) range of behaviors, given certain conditions (e.g. when intent can be shown) / explaining evolutions in normativity and/or criminalization

Table 3: Brigandt's analysis of concepts briefly applied to prejudice and bias motivated behaviors.

Thus, for all clarity, this study is a social scientific study into the etiology of prejudice and bias motivated behaviors, comprising those behaviors given a different name for either (i) normative reasons, which are of no concern to the study at hand at this point or (ii) because a niche manifestation of the wider phenomenon is studied (as indicated supra). Furthermore, as

discussed in the assumptions with regard to the nature of culture, of which institutions such as the law are part, are in themselves considered to be a product of the human mind in evolutionary psychology, the starting point of explanation should logically be that mind, and not the institutions themselves. To put it colloquially, institutions are made by people, and if institutions or structures “are prejudiced”, it is because they are either made by prejudiced people or that prejudiced people manage them.²³

6. To conclude

In summary, the aim of this study is to give an ultimate explanation to prejudice and bias motivated behaviors, and to explore the implications thereof for policy and practice. The focus of the empirical study will be on the first goal, i.e. the etiology of prejudice and bias motivated behaviors. There, the evolutionary roots of prejudice and bias motivated behaviors will be explored.

A large stress will be on the evolution of human sociality, rather than selfishness, and it will be argued that prejudice and its manifestations can be considered to be the result of human sociality. That is, they result from processes that have evolved in order to maintain social groups in society. Central elements there are *parochial altruism*, *coalitional exploitation*, *moralistic aggression* and *costly signaling*. In short, parochial altruism refers to the context in which group living would have proved to be adaptive, i.e. a hostile environment with low availability of resources, and the presence of other mobile groups competing over these resources. The second central element, coalitional psychology, refers to the psychological module that evolved due to intergroup conflict and competition. The key there is that humans are equipped with a cognitive module that allows to discern group membership on the basis of – otherwise arbitrary – markers. The third element, costly signaling, comes in two varieties. The one refers to signaling quality – or a genuine concern with norm compliance, whilst the other refers to compliance with norms in the form of subtle cheating, in which people tend to behave socially to secure self-interested goals such as not being exposed as a cheater. This is important, given the fact that group living cannot be maintained without the emergence of norms, as will be discussed. The fourth element, moralistic aggression, is equally important, as it is the prime mechanism through which these norms are maintained. The overall conclusion of this chapter is that prejudice, or at least some

²³ As will appear in the next chapter, prejudice in this sense need not always be consciously present.

forms thereof, can be regarded as very specific manifestations of specific forms of pro-social behavior (pro-social in the evolutionary sense, with no moral connotation).

Of course, what happened in the evolutionary past can constitute an “ultimate explanation” as Walsh and Beaver (2009) put it, but it can hardly be directly transposed to contemporary society. Even though the mechanisms find their origin there, they need to be translated to the present. For, a lot of time and history are between then and now, and it needs to be clarified how these mechanisms can relate to contemporary society. For this reason, in the third chapter, an overview of the currently most widely accepted explanations of prejudice will be presented, in order to see how they relate (or not) to the evolutionary framework presented. The theories will be drawn from social psychology. More precisely, social dominance orientation, right wing authoritarianism, and integrated threat theory will take center stage, as these represent the most widely established traditions in explaining prejudice. Thus, the first goal of the study comes down to embedding the current social psychological explanations of prejudice in the evolutionary framework as a meta-theoretical framework. Even though reference is sometimes made to evolution in social dominance and right wing authoritarianism, this is only done to a limited extent. In this study, I intend to make the evolutionary underpinnings not only more explicit, but also to test them empirically by introducing two new measurement scales, and connecting both the concepts of right wing authoritarianism and social dominance orientation to bias motivated behaviors, which is very rare if not absent in social psychology.

Chapter II. The dark side of human sociality: towards an evolutionary theory on prejudice

As societies evolved from bands through tribes into chiefdoms and states, some of the modes of bonding were extended beyond kinship networks to include other kinds of alliances and economic agreements. Because the networks were then larger, the lines of communication longer, and the interactions more diverse, the total systems became vastly more complex. But the moralistic rules underlying these arrangements appear not to have been altered a great deal. The average individual still operates under a formalized code no more elaborate than that governing the members of hunter-gatherer societies.

E. O. Wilson (1975: 554)

In this chapter, the evolutionary roots of contemporary prejudice and bias motivated behaviors will be explored. As the quote suggests, the evolutionary approach assumes that the mechanisms that have evolved thousands of years ago still have a bearing on the behavior of people in contemporary societies, be it that these societies have become immensely more complex than those in which the cognitive mechanisms under discussion have evolved initially. The goal of this chapter is to uncover the evolution of cognitive mechanisms that may, at least in part, give rise to – inter alia – contemporary prejudice and bias motivated behaviors. In the next chapters, these mechanisms will be brought into connection with current theorizing on prejudice and bias motivated behaviors.²⁴ Thus, the task ahead is a search for the evolutionary roots of prejudice, or, as biosocial criminologists would call it, the *ultimate causes* of contemporary prejudice (Jensen, 2010; Walsh & Beaver, 2009a). This way, the goal is to indicate “*where violence comes from, how it is embedded in human history, how social institutions shape levels and manifestations of violence*” (Eisner, 2011, p. 473) in the specific case of prejudice and bias motivated behaviors.

With regard to what is currently called prejudice, one specific narrowing of the scope of the study is in order. For, as Kurzban and Leary explain, there are three sources of stigmatization and subsequent social exclusion to be found in evolutionary theory. The first one is called

²⁴ That is to say, in this section the “naked” module or mechanism is discussed, whilst in the next chapter it will be explored more in depth how these mechanisms are given substance in our contemporary and vastly more complex Western world.

dyadic cooperation, and is described as “*a suite of adaptations designed to cause one to avoid interactions with individuals who are poor partners for social exchange, pose a social cost greater than their potential social benefit, or, perhaps, simply fail to meet any of the criteria for being a potentially valuable social interaction partner*”. The second is labeled “parasite aversion” and refers to “*a suite of adaptations designed to prevent prolonged contact with those who are differentially likely to carry communicable pathogen*”. Thus, this specific module only relates to the exclusion of the ill. The third is called “coalitional computation” and refers to “*a suite of adaptations designed to cause one to exclude individuals from reaping the benefits of membership in one's group, particularly if it is a locally dominant one, and to exploit excluded individuals*” (Kurzban & Leary, 2001, p. 192). This particular module or mechanism is explicitly inter-group oriented, and is the most salient in order to explain most forms of contemporary prejudice, as will be explained below. For this reason, the focus of the current chapter will be on this specific mechanism, as it provides the core of most instances of prejudice (next to other things). Next to this, dyadic cooperation will also be explained, as this module presumably produces prejudice and bias motivated behaviors in conjunction with coalitional computation. The chapter will not elaborate on parasite aversion, as this is an entirely different mechanism.²⁵

As the title suggests, prejudice can be regarded as the “dark side” of human sociality. By this, it is meant that at the time when the psychological modules that may still shape prejudice today evolved, group living (or sociality) were adaptive, but could not have been maintained without the exclusion of others, be it individuals of the in-group, or entire out-groups for that matter. In a way, sociality and a-sociality co-evolved in this way. As it is impossible to clearly isolate the evolutionary process that eventually leads to prejudice *alone*, as evolved psychological modules are not that specific, the broader evolutionary history of sociality and a-sociality will be presented in this chapter, of course, with due stress on the elements that are of importance to the explanation of prejudice.

However, before doing so, a concise introduction to evolutionary theory will be presented for the interested reader. The purpose of this section is to provide the reader with the nuts and bolts of evolutionary theory. In the second section, the evolution of human sociality will be discussed. In the third section, its counterpart, human a-sociality, will be discussed. In each of these

²⁵ This particular mechanism can, however, be used in order to do a quasi-experimental study. For, if it is true that the modules are distinct, any theory that is able to explain prejudice on the basis of coalitional computation in conjunction with dyadic cooperation, should not be able to explain the social exclusion of the ill.

sections, the elements that pertain to prejudice and bias motivated behaviors will be explicitly highlighted. In a fourth section, two other general-purpose mechanisms or psychological modules that have a bearing on the etiology of prejudice and bias motivated behaviors will be discussed in order to make the transition to the next chapter, where contemporary theories of prejudice will be discussed. In the concluding section, after summarizing the main findings with regard to prejudice, the general problem formulation of the study will be reformulated in terms of evolutionary theory.

1. Nuts and bolts of evolutionary theory

Given the fact that the social sciences have been quite reluctant to accept evolutionary theory in their theoretical models (e.g. Wright & Miller, 1998)²⁶, a few basic principles that underlie the evolutionary approach but may be “landmines” if not properly explained, will be discussed. In addition, some of the main misconceptions about evolutionary theory will be reviewed and evaluated in light of these core principles.

The key logic in evolutionary theory is the principle that the evolution of species occurs through *random variation and functional selection*. Mutations occur over generations through the recombination of genes, thus resulting in random mutations with regard to an organism’s genotype.²⁷ However, not all random mutations will eventually “survive”, or prove adaptive to the environment. This is due to the limited availability of resources, in combination with the fact that a population expands until the carrying capacity thereof is exceeded in its natural environment. This means that at least not all members of that particular species will survive, but that only those who are “best” adapted will do so. The term “best” in this context is to be understood without any normative connotation. That is, what we morally define as “good” or “bad” has no bearing on the theory of evolution: an adaptation or mutation is only evaluated in

²⁶ The reason for this disproportionate absence of evolutionary thought in criminology most likely is of a moral nature; as aberrant misconceptions of evolutionary theory, such as the widespread racism based on beliefs of inferiority of races, Lombroso’s atavism, social Darwinism, and eugenics have waded through our recent history with the memory of, among others, the Nazi and apartheid regimes still quite vividly present, this should not come as a surprise, just as the Hobbesian conception of human nature has been generally rejected in favor of that of Rousseau in a specific historic context of humanitarianism. However, even though the moral goal pursued by this is to be applauded by all means, the atrocities thus rightfully rejected rest on false premises with regard to evolutionary theory. Hence, any rejection of evolutionary theory as such on this basis would amount to a false dismissal thereof. In this chapter, the often violent nature of man will not be ignored, but attention will equally be paid to the behavioral aspects of man, equally adaptive as the more violent dispositions, that in current times are considered the highest moral good. There often is a thin line between “good” and “bad” in this sense, and often the context will play a crucial role in this sense. For, in evolution there is only adaptive or maladaptive, not “good” or “bad”, and behavior is adaptive to a context or environment, which may elicit a variety of behavioral responses.

²⁷ This is the genetic makeup of an organism. This makeup, in combination with developmental and environmental factors will eventually determine the organism’s phenotype, or how the genetic makeup of the organism is displayed in characteristics, behavior, and various “artifacts” such as a bird’s nest or human cultural traditions.

light of the *environmental pressures* an organism faces. That is, the organisms equipped with the (random) mutations that happen to be best suited to deal with the specific, spatiotemporally restricted environmental conditions it is confronted with will be the ones that eventually survive in the “struggle for life”. In this sense, selection is *functional in relation to the environment*.

Further, the main goal of natural selection is passing on *genes*, not individuals, an approach exemplified in Dawkins’ *The Selfish Gene* (Dawkins, 2006 [1975]). In this widely accepted view, the unit of selection at the most basic level in evolutionary theory is not an individual organism, but the gene and the information it contains. Strategies ensuring the survival of genes over many generations are, in this context, to be seen as successful from an evolutionary point of view. The term selfish in this context does not refer to the way we apply this term to humans – as genes do not consciously think and act – but indicates that “*the units that survive in the world will be the ones that succeed at surviving at the expense of their rivals at their own level in the hierarchy*” (Dawkins, 2006, p. 246).²⁸ However, the “selfishness” of genes does not imply – nor does it preclude – the selfishness of the organism in which they reside. Of all

Ernst Mayr’s summary of Darwinian evolution (Mayr, 2001, p. 186)

Fact 1. Every population has such high fertility that its size would increase exponentially if not constrained.

Fact 2. The size of populations, except for temporally annual fluctuations, remains stable over time (observed steady-state stability).

Fact 3. The resources available to every species are limited.

Inference 1. There is intense competition (struggle for existence) among the members of a species.

Fact 4. No two individuals of a population are exactly the same (population thinking).

Inference 2. Individuals of a population differ from each other in the probability of survival (i.e. natural selection).

Fact 5. Many of the differences among the individuals of a population are, at least in part, heritable.

Inference 3. Natural selection, continued over many generations, results in evolution.

thinkable random mutations, then, only a few (relatively speaking) succeed in transmitting genetic material to other generations. Among these few, still wide variety exists. Some of them will be undoubtedly selfish, but, as will appear, the role of biological altruism and cooperation have traditionally been severely underestimated in this process.

The notion that the environmental pressures facing an organism are spatiotemporally restricted is of great importance in evolution, indicating that this environment itself is subject to change as well. In this sense, a random mutation that is functional now, may

Table 4: summary of evolutionary theory by Mayr.

²⁸ The term “hierarchy” here does not refer to the idea of a qualified hierarchy as in the well-known *Scala Naturalis* idea (the idea of a hierarchy between forms of life, with a deity at the top, mankind right under that deity, and all other fauna and flora hierarchically ordered below humans). It does refer to the level of selection, i.e. here it is about competition between genes and genes alone. Multi-level selection theories incorporate multiple levels (e.g. the organism and the group) in them.

well be nonfunctional or maladaptive in the future, and, vice versa, a random mutation that is not functional now, may well be functional in the future. This finding stands in sharp contrast with teleological reasoning where everything evolves directionally towards some form of “ultimate goal”, which is entirely absent in evolutionary thinking. Through repetitions of this process over generations, certain genes will be copied whilst others perish, and evolution of species occurs. The logic in Darwinian evolution has been summarized in a clear and concise way by Ernst Mayr, one of the most notable evolutionary biologists, in five steps (Mayr, 2001, p. 186) (see box).

An important remark with regard to the environment is in order here: selection pressures are not limited to the natural environment, but may also relate to the *cultural environment*. This is exemplified in the “gene-culture” co-evolution thesis, and related viewpoints such as multilevel selection theory (e.g. Richerson & Boyd, 2005) and “the extended phenotype” (Dawkins & Dennett, 1999)²⁹. In this sense, *culture is an evolutionary force in itself, and co-evolves with genes in an interactive manner*. It is, however, important to note that culture is not reducible to genetics; rather, it is generally considered to be an evolutionary force in its own right. Moreover, culture and genes *co-evolve*, meaning that genetic changes may result in cultural changes, but also the other way around: cultural changes may entail genetic changes as well, given that they may be induced through functional selection in the cultural environment of organisms.³⁰ T

his latter phenomenon is often referred to as “niche construction” or the ability of humans to alter the niche they live in. To the extent that genetic change is largely selected for functionally on the basis of niches, this may exert important influences on the genetic development of the organism inhabiting it. Given the fact that humans are by far the most potent niche constructors around, the importance of culture ought not to be underestimated. (see Dawkins, 2004, pp. 28-34 for a more detailed exposition on this complex process and similar examples).

²⁹ Multilevel selection theory states that it is not only genes and their replication that steers evolutionary processes, but that cultural entities are subject to similar variation and selection processes. A related but more contested idea is “meme theory” (Blackmore, 1999). The idea of the extended phenotype goes against this point of view by maintaining that the gene does remain the central driving force in evolution, and that culture can be seen as a phenotypical extensions of the genetic makeup of a specific gene pool. Both, however, ascribe culture a powerful evolutionary role in human development. This debate will not be further considered in the current study, however, as the main idea to withhold is that culture does play an important part in human evolution. The point of view taken up in the current study, however, is the gene-centered view (inter alia because of technical and theoretical problems associated with multilevel and group selection theories – apart from cultural group selection theories). Also, some theorists to be cited in the current chapter do adhere to the group selection paradigm. This is, however, no problem. The elements discussed from these theorists are phenomena that are also endorsed by gene-centered theorists. The specific group-selection mechanisms of the theorists will not be considered. In the gene-centered view, population level dynamics equally are possible.

³⁰ I use the term “organism” to stress the existence of artifacts impacting genetic evolution in other life forms as well, the typical example being beaver dams. Of course, the extent to which humans are cultural is unparalleled in other species around the world.

Thus, assuming selection occurs functionally in relation to the environment, an adaptation can also *lose* its adaptive value when the environmental pressure changes. By asking the question whether behavior is (a) an adaptation and (b) whether or not this behavior is adaptive here and now, four types of results of evolution can be discerned. In case of a *current adaptation*, behavior still is adaptive in light of the environment. In case of a *past adaptation*, the behavior once was adaptive, but the environment has changed to such an extent that the adaptation has lost its adaptiveness. In case of an *exaptation*³¹, behavior is currently adaptive, but was not selected for as such. Finally, a *dysfunctional side-product* is behavior that just is what it is, without increasing fitness, and without being selected for (Blokland, 2005; Blokland, Thienpont, & Donker, 2005). In general, in this chapter I will argue that the evolutionarily inherited psychology underlying contemporary negative prejudice and the behaviors resulting therefrom are *past adaptations* even though one can claim current adaptiveness for the general mechanism in other contexts than prejudice. However, an investigation into the evolutionary roots of this behavior might elucidate the cognitive mechanisms that evolved to resolve issues essential to our species' survival, and may hence increase our understanding of that particular mode of behavior a lot.

This indicates the main role of evolutionary theory in the study: it has a *heuristic value*. As Eisner puts it, "*the issues raised by evolutionary theory strike at the very heart of the criminology of violence: they are aspects of the question of where violence comes from, how it is embedded in human history, how social institutions shape levels and manifestations of violence, and how state order relates to violence*" (Eisner, 2011a, p. 473). The main value thereof lies in the fact that evolutionary theory may provide for a rich source of inspiration to "channel" the vast diversity and accompanying yet sometimes dangerous fragmentation and overspecialization of the field; that is, it may prove to be fertile ground for *unification* and, consequently, theoretical interdisciplinary *integration* (see also the introductory chapter on scientific philosophical considerations underlying the present study). In a second, yet in no way less important sense, it may also provide criminologists and social scientists alike with hints as to the underlying *structuring causes* of behavior which are not always straightforward or intuitively expected. As indicated in the introductory part describing the philosophical framework of this study, this may have certain benefits as the problem of induction is amplified in the social sciences, and, as a result, inductive reasoning may well lead to spurious concepts

³¹ For example, our sense of balance allows us to ride a bicycle, but it certainly is not selected for in order to ride bicycles.

constructed around various sets of initial conditions. This can be avoided by taking research to a higher level of universality – a deeper level of robustness if you wish.³²

Finally, I would like to address a very common misconception about evolutionary theory applied to human behavior. It is not about a reinvention of Lombroso as is often claimed, usually by those criminologists that brand themselves as “critical” (Carrier & Walby, 2014). Put differently, the myth of born criminals is not in any way a necessary consequence of an evolutionary analysis of crime and deviance, nor is this notion of any interest to the present study. It has to be noted from the onset that an evolutionary analysis of crime does not classify people in a binary fashion as either “criminal” or “normal”. Rather, it has an eye for the adaptability of people – and other organisms for that matter – to the situation or niche an individual is in. In this vein, no person can be regarded as “criminal” or “normal”, rather the question of criminals and crime becomes a question which is essentially concerned with context. The Lombrosian concept of “atavism” is equally rejected in this logic, given that – in Darwin’s words – *natura non facit saltum*. Not forward, not backward. Even though no individual is the same, the idea of a “setback” in evolution is not in line with evolutionary thinking, as the mere idea presupposes a direction in which evolution would be moving.

This brings me to the question of *determination*. In the wake of the fear of revival of Lombroso, it is often assumed that evolutionary theory will result in deterministic explanations. This is false, and contradicts the core principle of evolution: random mutation and functional selection. Mutations are as random as this term can possibly refer to; there are no limits to the type of mutation that may occur. In itself, this would make determination quite difficult. But selection itself neither can provide for grounds of determination, as it is functional in light of the environment. Given that the environment is constantly changing, in non-predictable ways, this is no fertile ground for determination either, especially taking into account the complex socio-cultural environment mankind has been able to create. Both arguments in combination with each other, then, make determination quite unlikely or practically impossible when applying evolutionary theory.

2. Human sociality

In this section, a potential evolutionary source of contemporary prejudice and bias motivated aggression will be explored that meets the criteria of a higher degree of universality and an at

³² Again, I do not imply by this statement that all current research is “wrong” or “bad”, I only mean that it may be a valuable exercise to add this type of analysis to it.

least similar degree of precision. In other words, a search into a possible structural cause of prejudice and bias motivated aggression will be undertaken in the current section. More concretely, I will try to show that prejudice and bias motivated behaviors are at least in part instances of pro-social behavior. The study of mankind's cooperative or social nature is in large part to be accredited to the field of economics, where theoreticians have been puzzled by the fact that people did not act selfishly in a variety of laboratory and natural settings, even though it was a common assumption that all of mankind is selfish in the sense that they will tend to maximize their own profit, if need be at the expense of the greater good. Especially considering that natural selection would favor "defectors" (the name usually given to individuals who do not cooperate but act selfishly) over cooperators, as the former maximize their gains whilst the latter are basically leached upon in order to do so. Given the fact that people have been cooperating for a long time, mainly economists undertook a search into the possible evolutionary roots of cooperation, for if there is no mechanism and purpose sustaining it, it should not have existed – at the very least not on the scale it currently exists in humans; the trait is too predominantly present in all cultures for it to be a random dysfunctional mutation / byproduct of evolution.

In what follows, the term "pro-social", refers to *behaviors that benefit others, while not necessarily being beneficial to the person or organism performing the act of helping*. Sometimes this also called (biological) altruism, a term which has no moral connotation in evolutionary theory (it simply means that the cost³³ to the one performing the act is greater than that of the one receiving the act, which might be zero). In the remainder of the text the concepts altruism, cooperation and pro-sociality can be used interchangeably in the sense of pro-social behaviors.

2.1. "Classical" explanations of human sociality

Traditionally, four forms of social behaviors (biologically altruistic behaviors) can be discerned. One of the most well-known is called *kin selection*, and was already referred to by Charles Darwin himself in his studies on domestication of animals. However, even though the term was probably coined by J.M. Smith (1964), the logic behind it was first formally (mathematically) treated by J.B.S. Haldane (1932) and R.A. Fischer (1930) before. Explicit links with social behavior and altruism more precisely have been formulated at an early stage

³³ In evolutionary terms, "cost" is to be understood in terms of success of transmission of genes. This may imply risks to the own well-being, death being the most obvious one involved.

by Hamilton (1963). The principle behind kin selection is that organisms that dispose of characteristics that lead them to protect and help genetically related organisms, will have higher chances in passing on their genetic material. From the “selfish gene” point of view this is logical: if an organism would be purely selfish and only concentrate on generating more offspring, but not care for this offspring, its chances of survival are reduced considerably. If, on the other hand, it does care about their offspring and make sure they survive into adulthood to procreate themselves, the chances of passing on genetic material to future generations is greatly enhanced. Especially in an environment where both types of organism are in competition to maximize their share in the gene-pool, those that are pro-social toward their kin can be expected to see their “profits”, in terms of the relative share in the gene-pool, grow disproportionately compared to the latter. Further, as exemplified in “Hamilton’s rule”, this type of inclusive fitness is not limited to offspring, but may also include more distant relatives. In this respect, Hamilton’s rule states that the altruistic tendencies towards another is directly related to the degree of kinship the altruist shares therewith (Hamilton, 1963).

Even though the process of kin selection is widely observed in nature (including humans), it does have the main limitation of being restricted to kins it is not capable of explaining the existence of altruism between non-related people (for example). This type of pro-social behavior has been explained mainly by Trivers’ reciprocal altruism. As he explains, “certain classes of behavior conveniently denoted as ‘altruistic’ can be selected for even when the recipient is so distantly related to the organism performing the altruistic act that kin selection can be ruled out” (Trivers, 1971, p. 35) This type of behavior may take place between members of different species, and only benefit the organism performing them in the long run. It is “referred to as symbiosis and forms the basis of all forms of barter and trade” (Dawkins, 2006, p. 248). The main principle is that altruistic acts may be reciprocated in the future, thus enhancing the fitness (in terms of the propagation of genetic material) of those involved over those that are not altruistic, should they ever be in need of such behavior themselves – which occurs often in natural settings. It is based on the following limiting assumptions, without which it cannot emerge:

- the cost to the giver is smaller than the benefit to the receiver
- long lifespan of the organisms involved;
- low dispersal rate (that is, quite small groups);
- life in small, mutually dependent social groups;
- long period of parental care.

Even though this model of altruism goes further than kin selection models, its main limitations are the above listed assumptions. For, if we look at modern society, people do not live in small, mutually dependent groups (anymore), and are consequently not likely to meet each other again in the future. The type of “direct” reciprocity described above thus may fall short of providing an explanation why people do cooperate with people they are not likely to encounter again in the future, a very real scenario in the contemporary world. In order to explain this, the term *indirect reciprocity* has emerged. Instead of the principle “I’ll scratch your back if you’ll scratch mine”, the principle in indirect reciprocity is “I’ll scratch your back and someone else will scratch mine” or “I’ll scratch someone else’s back and you’ll scratch mine”. Even though this seems a plausible expansion of the original concept “reciprocal altruism”, some problems may easily emerge with regard to the stability of the cooperative strategies involved. The reason for this is that reputation plays an important role in indirect reciprocity. By helping someone who cannot directly help us in a future encounter (as is the case in direct reciprocity), one builds a *reputation of being a good reciprocator*. In turn, this reputation of being a “helper” will elicit help from others when needed. The reason is that a good reputation signals the individual’s willingness to help others, thus also potentially the helper (Nowak, 2006).

Nowak and Sigmund (2005, p. 1292 in particular) convincingly show that problems may arise if no “rules of engagement” are spelled out in order to assess other individuals. If no such rules are available, a stable cooperative strategy cannot emerge. If people would act purely on the basis of self-interest by giving help to anyone, including defectors, in order to gain a positive reputation (unconditional strategy), defection would soon become the dominant strategy. The reason for this simply is that people are not inclined to help others if there is not a clear indication that they will receive any help in the future. That way, they will soon decide to defect themselves as well, given that their pro-social efforts remain unrewarded. In this process, cooperation is destabilized over time for which reason discrimination of defectors (in the sense of exclusion, non-interaction with them) is required. That is, a *conditional* strategy is warranted in order to reach a stable solution. In this sense, indirect reciprocity requires advanced cognitive abilities, allowing people to assess the norm-conformity of the people involved in the interaction. This, as Nowak and Sigmund argue (*ibid.*), is most likely the basis for the exceptional cognitive abilities found among humans.

2.2. Parochial altruism and coalitional computation

Even though the “classic” explanations of human cooperation or altruism are well tested and very acceptable from an evolutionary point of view, they are still pestered by difficulties in explaining two theoretically relevant phenomena (Bowles & Gintis, 2011, p. 3). First, *they cannot account for situations in which people do not interact repeatedly*. This is a problem foremost applicable to reciprocal altruism (or “enlightened self-interest”). If reciprocity is the basis of our cooperative nature, it seems difficult to theoretically expand this model to one shot interactions – even though the above mentioned game theoretic designs did report cooperation in single shot studies (game theoretic designs in which partners change continuously, or when there is no chance at even meeting them in person). One simple example would be one shot trade exchanges with people across the ocean, made easy these days by means of internet. It would seem difficult to sustain cooperation in “groups” of global proportions, in which one shot interactions are tantamount, on the mere basis of reciprocity, direct or indirect.

A second, related reason is that *it is not always possible to build reputations*, for basically the very same reason of group size. Gossip and other common channels used to spread reputational information are not as effective in this context as they are in small (e.g. tribal) groups. Why then, do we maintain cooperation, even in a scenario where selfishness would result in better overall payoffs, often even without a chance of being excluded or penalized for it? In light of the tantamount number of chances to defect or cheat, it is remarkable how people, people all across the world alike, do not engage in a kind of large scale selfish defection, which remains – in light of the classic accounts – an evolutionary puzzle.

This is especially puzzling, taking into account the violent group interactions of mankind, commonly observed both in large scale warfare and everyday conflicts both past and present. In dealing with this ostensible evolutionary conundrum, Bowles and colleagues propose the rather counterintuitive yet evolutionary acceptable and well tested hypothesis that altruism and parochialism could have evolved in synergy with one another (Bowles, 2008, p. 326). He bases this hypothesis on the finding that neither altruism, defined as an act conferring a benefit on another at a personal cost, nor parochialism, defined as favoring insiders over outsiders, alone would be favored by selection. In this context, altruism alone would include bearing costs at the expense of others, possibly non-altruistic, which would thus gain an evolutionary advantage in terms of fitness (be it reproductive or material). Hence, “pure” altruists would not be favored by natural selection. For parochialism, it is argued that explicit hostility toward outsiders may

equally prove to be a setback from an evolutionary point of view, given that others might benefit from cooperative strategies or alliances with others. However, one need not look very far to see that both behavioral dispositions seem to coexist in humanity (its history is riddled with bloodshed but equally so with alliances and morally inspiring acts of courage and generosity).

How parochialism and altruism co-evolved or act in synergy, has a lot to do with the environments in which our ancestors lived. In this context, Late Pleistocene environments were quite hostile environments, due to – inter alia – climatological instability, the presence of multiple predators, and often scarcity of resources. As a result, often long-ranging migrations would take place, in the course of which encounters with other migrating groups, in search of the same scarce resources, were likely events. This likelihood is also reflected in the abundant archeological and statistical evidence testifying to a history of conflict. In principle, two elements emerge here: (i) hostile environments and (ii) the presence of other groups competing over scarce resources. The term “hostile” is to be understood in the sense that environmental shifts may have induced scarcity of resources and fueled mobility of a wide variety of organisms (e.g. hostile animals) competing over these resources. “Hostile” in this sense may also refer to the fact that hunting large game, rather the rule than the exception at the time, might be impossible for one single individual. However, in the explanation of parochial altruism, especially *intergroup competition over scarce resources* is focused on. As Choi and Bowles indicate (2007, p. 636), parochial altruists, defined as those who are willing to bear costs in the form of taking part in conflict (possibly perishing in the conflict), in order to confer benefits on the other group members, were favored by selection over individuals who are either solely altruistic or solely parochial³⁴ in the Late Pleistocene environment.

In their experimental design, Choi and Bowles indicate four possible combinations between the altruist and parochial dispositions; tolerant or non-parochial altruists, parochial altruists, parochial non-altruists, and tolerant non-altruists (Choi & Bowles, 2007, p. 637). Neither altruism nor parochialism emerge alone as the main strategy in their computer simulations, and the (however fictive) societies that do emerge after thousands of (however fictive) generations are either tolerant or selfish, with little warfare or conflict between groups, or they are parochial *and* altruistic, with frequent hostile interactions with other groups (Bowles, 2008, p. 326). However, in real life scenarios as opposed to necessarily simplified computer simulations, it

³⁴ It must be remembered at this instance that in the gene-centered approach, expressions such as the one presented may be confusing. For, it is not so much a conscious effort of the person doing the act; he is usually motivated to do so by the proximal mechanisms such as emotions. What counts, is the relative proportion of a certain gene in the overall gene pool of a certain population. In this sense, “conferring a benefit” simply means increasing this relative proportion.

plausible that all of the four types of people described above are present. How interactions with other groups occur, then, depends on the fractions of either of the types mentioned in the overall population. If a group with a large fraction of parochial altruists fights over scarce resources with a group consisting of a large fraction of non-altruistic parochialists, for example, the former would be favored by selection over the latter, thus contributing to the spread of parochial altruists over the world.

It remains, however, more complex than an all-or-nothing game; for, if both groups consist of high fractions of parochial altruists (groups are thus *evenly matched*), conflict will be avoided, as is the case, for example, with primates (Choi & Bowles, 2007, p. 637; Wilson, Hauser, & Wrangham, 2001).³⁵ Also, shifts occur in the balance of the population, due to these dynamics (over generations that is). Hypothetically, when the vast majority of individuals in a population is non-parochial, intergroup conflict is not likely. However, when the vast majority of the population consists of parochial altruists, neither is violent intergroup conflict likely, as most groups in the population would be evenly matched. The incidence of violent conflict is most likely highest when a large part, but not a vast majority, of the population consists of parochial altruists (theoretically 40%-70% based on computer simulations), given that under these circumstances groups are most unevenly matched. Finally, in the absence of violent intergroup conflict, parochial altruism is not favored, but rather non-parochial altruism is. Again, it needs to be stressed that this is not an all-or-nothing logic, all types are probably present in any population. However, due to micro-changes in populations over generations shifts from “peace” to “war” may occur, due to gradual shifts in the composition of the population.³⁶

From the above it already appears that human sociality is not always an unconditional phenomenon, but it is often limited to a specific group of people whilst the same courtesy is not extended to other groups of people, especially so in situations of *conflict* and *competition*. The important element to remember for the purpose of the present study, is that the above environmental pressures may have selected for a specific type of cognitive module, that still persists today. An obvious mechanism that would be needed in order to confer benefits to the in-group in competition with other groups is a psychological module allowing to differentiate

³⁵ An interesting finding by Wilson et al in this context is that the willingness to engage in conflict also depends on the density of the population. The lesser the density of the population, the less, in this case, individual chimpanzees are inclined to engage in intergroup conflict (Wilson et al., 2001, p. 1213). Various other contextual factors are noted by them.

³⁶ Even though Gintis et al. apply the reasoning to a genetic group-selection model (which are very contested), this presumption is not necessary. Other scholars, such as Kurzban et al. (personal communication) who do not embrace genetic group-selection models do accept the role of the environment and intergroup conflict in the evolution of sociality.

between the various groups involved in the conflict. A module that may perform this function is discussed by Kurzban and Leary (2001) as one of three mechanisms responsible for social exclusion: coalitional computation or exploitation. Kurzban and Leary describe it as: “*A suite of adaptations designed to cause one to exclude individuals from reaping the benefits of membership in one's group, particularly if it is a locally dominant³⁷ one, and to exploit excluded individuals*” (p. 192). This mechanism can be considered to be explicitly group-oriented and finds its basis in the very same Late Pleistocene living conditions as discussed by Bowles and Gintis in their “parochial altruism”.

Thus, what the evolutionary history of parochial altruism (or at least the conditions leading thereto) resulted in from a psychological point of view, is a *coalitional computation* module or the ability to pick up signals that represent coalitional group membership, be it of competing or collaborating groups. Even though the environmental pressures today are very distinct from those faced by people in the late Pleistocene (or in current ancestral societies), this does not mean that this cognitive module therefore does not exist anymore. In this sense it can be seen as mainly a *past adaptation*.

It is important to stress that there hardly is any “automatic” coding of cues that may be associated with coalitional group membership. In this sense, the cognitive module is rather neutral: it allows for the registration of coalitional belonging as such, but is indifferent to the concrete content of the cues used (such as, for example, skin color). Only two such cues are cross-culturally automatically coded: *gender* and *age*, as encoding thereof results in a variety of evolutionarily beneficial inferences about an individual. As Kurzban, Toobey and Cosmides (2003) argue however, automatic coding is very unlikely in the case of skin color. The reason is simple: ancestral societies most likely did not travel far enough to actually encounter individuals of another skin color, which makes the automatic encoding of race doubtful. The reason why skin color often is encoded then (at least in the contemporary world), is the same as any other cue may possibly be encoded: it has gained *coalitional meaning*. That is, it serves as a *proxy to determine the coalitional membership of someone*. Importantly, these cues can basically be anything, as long as they are proxies of coalitional belonging. Thus, any cue can be encoded through the machinery of coalitional computation, but they will *only do so if the cue in question has meaning in terms of coalitional belonging*, the latter often being locally/culturally defined.

³⁷ Or, put differently, not evenly matched to the competing group in the positive sense.

This reasoning was also put to the test in an experimental design by Kurzban et. al. (Kurzban, Tooby, & Cosmides, 2001) and the findings are quite astonishing. In two experiments using a memory confusion protocol, the registration of coalitional alliances was tested for. In a nutshell, the first experiment tested for the encoding of coalitional alliance on the basis of verbal cues rather than visual clues, whereas the second experiment used shirts of different color to visually indicate coalition. In both experiments, both Euro-American and Afro-American subjects were presented to the participants. Importantly, skin color did not match the verbal cues of coalition in either experiment, whereas the color of the t-shirt in the second experiment did match the verbal cues. In experiment two, it is important to note that the verbal and visual markers of coalition did not match skin color (both groups consisted of both Afro- and Euro-Americans). In the first experiment, coalitional alliance on the basis of both verbal cues and skin color occurred, with the effect of skin color being twice as strong as the verbal cues. In experiment two, coalition was coded substantially stronger on the basis of both verbal and visual clues. Even though subjects did continue to encode for skin color, the effect of skin color was substantially lower compared to experiment one. Furthermore, in experiment two, encoding of coalitional alliance was far stronger than encoding for race. As the title of their article suggests, these results imply that “race can be erased” by replacing it with different visual markers of shared belonging.

2.3. Intermediary conclusion

Thus, whilst there are many mechanisms that explain human sociality, the concept of “parochial altruism” is one which enables to explain sociality under far less stringent conditions compared to the mechanisms of kin selection, direct reciprocity and indirect reciprocity. It appears that a very plausible reason why large scale cooperation and sociality evolved among humans, is the hostile environment in which people lived in the late Pleistocene. It was hostile in two senses. First, the presence of both large predators and an instable environment would be a selection pressure for group living. Second, it was an instable environment with scarce resources. Whilst groups travel around, competition arises over those resources when groups meet, which also provides a selection pressure for group living and cooperation. This history of humanity may have led to the evolution of a cognitive mechanism that allows for the identification of different groups, both for the purpose of identifying those with which one can cooperate, and those who are competitors.

These processes cannot be seen entirely distinctly from each other. For, “parochial altruism” or in-group cooperation as proposed by Bowles et al. may easily be extended or adapted to strong reciprocity. In any case, nature is “economical” and often different processes co-evolve. As has already been suggested in the margin of the discussion on reciprocity models, sociality does often co-evolve with bias and even outright hostility towards certain people or groups of people. It is at the heart of the “parochial altruism” hypothesis, where sociality evolved out of violent conflict as such. In fact, violence and social exclusion both on an intra- and inter-group level are often needed in order to maintain sociality. This will be the subject matter of the next section.

3. Co-evolution of social exclusion and hostility

In this section, the darker side of human sociality will be subject of discussion. I will argue that morally denounced behaviors, ranging from gossiping over exclusion to extermination, have been a *necessary* condition for human sociality to evolve in our ancestral history. More precisely, punishment of bad reciprocators, the intensification of punishment of out-group members, and costly signaling will be discussed. Whilst these are all important features in the maintenance of human sociality, they are also presumed to have a direct import on prejudice and bias motivated behaviors, if they are combined with coalitional thinking. Whilst punishment of bad reciprocators has been indicated as an intra-group process, the cognitive mechanism of coalitional computation may, conditional upon the circumstances, take it to the inter-group level. That very same mechanism may, conditionally upon the circumstances, provide for opportunities to send costly signals of one’s overall quality as a group member. Let us now turn to the beginning of this story: moralistic aggression.

3.1. Punishment of bad reciprocators

Without regulating mechanisms, natural selection – essentially based on competition – favors defectors. As was shown by (Fischbacher & Gächter, 2010), in a game theoretic design, people can either be inclined to free riding (selfish motive), or to cooperate (social motive), or can find themselves in between. Voluntary contributions to the public good, however, are not unconditional but modeled on the contributions of others. Therefore, they state that cooperation is *conditional* on the contributions of others (Fischbacher & Gächter, 2010, p. 541). Also, *perfect conditional cooperators* – whose contributions match those given by others – are very rare, most people being classified as imperfect conditional cooperators. As a result, contributions to the public good decline over time: “*after some time, all types behave like*

income-maximizing free riders, even though only a minority is motivated by pure income-maximization alone” (Fehr & Fischbacher, 2002, p. C17; Fischbacher & Gächter, 2010, p. 554). In the same vein, people prefer (see *infra*: the role of emotions) to interact with likeminded people (Page, Putterman, & Unel, 2005, p. 1033)³⁸: if someone is a conditional cooperator, he or she will tend to cooperate if he or she knows that other people will do the same.

In this sense, one way of dealing with cheating is to not interact when they are present, *discriminating* against them, or to even *banish* them from the group (e.g. Cinyabuguma, Page, & Putterman, 2005). This type of discrimination is a powerful tool to maintain in-group cooperation when interactions with outsiders are regular, especially if those outsider groups are non-altruistic (e.g. García & van den Bergh, 2011, pp. 286-287). This finding is in line with the above discussion on parochial altruism, in which cooperative tendencies are forged in the midst of conflict and competition. However, no group consists of cooperators exclusively, so discrimination against in-group members who refuse to cooperate, either in the form of refusals to cooperate with them or in the form of banishment, occur as well. Further, the threat of expulsion may provide strong incentives for free-riders to cooperate notwithstanding their non-cooperative tendencies. The reason is simple: if one looks at the situation from the point of view of a selfish individual, his or her payoff (in terms of fitness or personal incentives) will by no means be served if they are excluded from the group (Cinyabuguma et al., 2005).

Further, it has been widely established in game theoretic research designs that punishment of defectors leads to increases in the contributions of people to the common good or their willingness to cooperate with others. As Jensen (2010) describes, the ability to punish in direct reciprocal relationships has quite clear advantages, insofar as it is capable of deterring potential cheaters into reciprocating on their own. The incentive here can be labeled “self-serving”, “self-interested” or “selfish”, insofar as the only incentive to cooperate (i.e. reciprocate) on behalf of the reciprocating party, is the avoidance of punishment. Basically the same holds for second party punishment, where the punishment is executed by a party not involved in the reciprocal relationship. There too, deterrence may be the factor that explains the wide occurrence of behavior. Apart from that, however, it can also be viewed as a “self-serving behavior at the disposal of dominant individuals who can coerce others into behaving cooperatively” (Jensen,

³⁸ In this sense it has been repeatedly investigated and corroborated that people have social preferences, and that these play an important role in the modeling of interactions between various types of people. Social preferences include reciprocity, inequity aversion, pure altruism, and envious preferences.

2010, p. 2635). As we will see further, indeed other motives can be invoked for this type of behavior, i.e. costly signaling of reputation and strength.

However, this explanation of the sustainment of cooperation in principle has the same problems as did reciprocity when used as an explanation for altruism. For, the mechanism described above presumably is most efficient in groups that fit the same criteria as the groups in which reciprocity is most likely to emerge. Even in the case of indirect reciprocity, the explanation fails to address the issue why altruism and cooperation is sustained in mankind to such high degrees. In order to explain this, the concept of *strong reciprocity* has been invoked.

A wide variety of game theoretic experimental designs have supported the claim that people punish those who cheat, also apart from the particular case of indirect reciprocity (e.g. Fehr & Fischbacher, 2002; Fischbacher & Gächter, 2010; Page et al., 2005). The key finding in this type of study is that the punishment of norm transgressors *occurs apart from any kind of reciprocity*; that is, strong reciprocity is common among humanity. Just as the “classical” explanations of cooperation fail to explain why people have developed a sense of strong reciprocity and the accompanying pro-social norms next to more selfish tendencies, the explanations of punishment in the reciprocity model do not allow to explain the existence of “purely” altruistic punishment – punishment in which the punisher only incurs a cost to the benefit of the larger group, without this ever being reciprocated. This is a scenario quite common in the ever more globalized world we live in. Again, the large fractions of strong reciprocators among mankind have been a puzzle for economists and evolutionary biologists alike for a long time.

The authors ascribe the way this strong reciprocity – the combination of unconditional reciprocation with altruistic punishment – came about relates to the exceptional cognitive skills mankind is equipped with. As elaborated earlier, it is likely that one of the earliest forms of altruism found in humans is kin altruism. An adaptation thereof, resulting in reciprocity, may have proven to be favored by selection given its obvious fitness advantage. Reciprocity already requires more mental gymnastics to occur. Especially another adaptation thereof, indirect reciprocity, would require even more intellect. But the phenomenon of strong reciprocity requires even more, as it is strongly related to the ability for abstract reasoning, language, and the ability to define social norms and to reach some kind of consensus on them (Bowles & Gintis, 2004). This is the only plausible sense in which it can escape the trap of earlier theories on reciprocity in the explanation of a wide variety of pro-social behaviors. In principle, or so I

argue, the evolution of strong reciprocity is dependent on the evolution of a *sense of morality*.³⁹ What does remain clear, however, is that social norms are of great importance in the evolution of humanity, and they do serve evolutionary purposes as well, i.e; they do enhance fitness over norm-less groups. Otherwise, quite frankly, they would not have made it this far in human evolution.

3.2. Dynamics in punishment

Even though the goals of punishment of controlling cheating and thus modifying behavior is rather straightforward Bowles and Gintis describe some interesting dynamics regarding punishment that cannot be explained on the basis of the self-interest hypothesis (Bowles & Gintis, 2011, pp. 19-42). One rather puzzling finding in this respect is that punishment need *not* entail any “real” disadvantage for the defector, that is, it need not result in any monetary or material repercussions. Put differently, often punishment is *purely symbolic*, and, symbolic punishment is effective. In game theoretic research designs, this has been tested in various ways, such as the usage of disapproval points (Masclot, Noussair, Tucker, & Villeval, 2003), where the base rate of contributions in the punishment condition was higher than in the baseline condition. Furthermore, it seems that the mere opinion of people matters a lot even to defectors, and this alone can be reason enough not to defect in most cases. As Bochet et al have shown in a study where the effects of communication preceding the voluntary contributor game were compared to the effects of punishment, the effect of communication was stronger than that of punishment. They compared the effect of face-to-face communication and communication via chatboxes on voluntary contributions to that of punishment, and concluded that people are susceptible to what others think of them in terms of being reliable allies (Bochet, Page, & Putterman, 2006). Given that there were opportunities to defect, as promises did not need to be kept during the game, this finding once again stands in stark contrast to the self-interest hypothesis. Thus, in addition to the fact that symbolic punishment is effective, it seems that the mere threat of symbolic punishment, for example in the form of “name calling”, is equally so effective. As we will see further, signaling of reputation may be one important explanation of this phenomenon.

Anthropological research also points into the direction of the wide usage of symbolic punishment. In this context, Wiessner analyzed 308 conversations among members of an

³⁹ Morality as such, however, is not the subject matter of this study; therefore, this otherwise very interesting and intricate debate will not be reproduced here. An interesting book-length exposition on the matter can, however, be found with Greene (2013)

African forager society (Ju'/hoansi Bushmen), and found that four types of punishment were present in their society: (1) put-downs through pantomime and joking, (2) mild criticism and complaint, (3) harsh criticism and complaint, and (4) harsh criticism and violent acts. Of these four, the most common was outright mild criticism (41%), followed by harsh criticism (35%) and put-downs through pantomime or joking (22%), whilst criticism combining violent acts only accounted for a minor amount of punishments (2%) (Wiessner, 2005, pp. 129-131). With regard to the effectiveness, it must be noted that only in 13% of cases corrective action was taken, in 26% of cases opinions against the target were rallied, and in 39% of cases the “message was heard” by the target with no direct visible response to the punishment (Ibid., p. 131-134). In this latter case, it should be taken into account that responses to punishment can be postponed, and that in many cases long term effects cannot be observed (e.g. more food sharing in the later future). Notwithstanding these qualifications, it does seem that punishment need not result in the modification of behavior per se, which brings me to the next dynamic of punishment.

As a second dynamic, Bowles and Gintis (ibid.) mention that punishment is *not always strategic*, as one might expect, for example, in the case of reciprocity. Especially the case of altruistic punishment (strong reciprocity) points into this direction. In game theoretic research designs, next to the above mentioned research by Weissner, this conclusion has been repeatedly been confirmed: in the last rounds of voluntary contributor games, punishment was considerable (even higher than the average in the immediately preceding rounds). In this case, punishment simply cannot alter people’s behavior anymore, and consequently cannot be considered to be strategic (that is, with a view to change behavior) (e.g. Bochet et al., 2006). Thus, punishment can be considered to be a *goal in itself*.

However, there is one reason why punishment may be effective even if it does not result in behavioral change of the target. As Barr shows by means of a game theoretic design carried out in Zimbabwe, the mere observation of someone being punished may result in behavioral change of *bystanders* – people not involved in the punishment interaction but observing it. So, notwithstanding the plausible absence of behavioral change on the part of the direct target, punishment can be considered to have a *group level effect* as well insofar as those who observe punishment will tend to compensate their behavior in the socially desired way to avoid similar punishment. This finding is congruent with the earlier reported findings regarding deterrence. In this sense, the conjecture that punishment has a social function in itself finds support in these empirical findings. It is interesting to note that the effect of punishment may be different for the

punished party compared to bystanders: whilst it may have a negative effect on the contributions of direct targets, as they retaliate against those who are giving them a bad status, it may have a positive effect on bystanders who make low contributions, as this enables them to build a reputation (Barr, 2001).

A final interesting dynamic with regard to informal punishment is the finding that the *cost of punishment is reduced by forming coalitions* when punishing. Thus, punishment occurs in groups (when possible) rather than by individuals. As Weismann found while studying a tribal African society (Ju'/hoansi bushmen), this is most likely to be the case when norm violaters posed threats to group harmony (Wiessner, 2005). In such a scenario, the relative cost of punishment decreases as the number of altruistic punishers increases in the population under consideration. As indicated earlier, punishment can sustain cooperation through the evolution of strong reciprocity, which in turn might be the basis for “coalitional punishment” (see also Bowles, Boyd, Mathew, & Richerson, 2012; Boyd, Gintis, & Bowles, 2010).

3.3. The import of coalitional psychology on punishment

However, even though the link between the maintenance of cooperation and punishment today, with written agreements, by human beings endowed with spectacular cognitive capacities which allow them to agree on coalitions and the like, may be clear in general, it does not explain one peculiar fact found by Bernhard and colleagues (Bernhard, Fischbacher, & Fehr, 2006): punishment is *heavier towards out-group members compared to in-group members*. Bernhard et al. conducted a third party punishment game in Papua New Guinea, in which it was clearly shown that people contributing less to the public good than normatively expected were all punished in general by a third party. However, the experiment also clearly shows that the punishment of defectors that did not belong to the in-group of the punished party and punisher, was more severe compared to a defector belonging to the same in-group. This phenomenon will further be referred to as *parochial altruistic punishment*.

In my opinion, this finding can also be regarded as additional support for the parochial altruism conjecture. For, if altruism is forged in conflict with out-groups, it is very plausible that subsequent modifications thereof, including altruistic punishment to sustain social norms such as reciprocity, equally bears this parochial characteristic. In addition to this, it must also be remembered that strong reciprocity is a fitness enhancing adaptation from the point of view of the group as such, not so much the individual actor within a specific group. For in the latter case, selfishness would be selected for over strong reciprocity. An important qualification,

however, is that the parochial character of altruistic punishment need not necessarily lead to group conflict. This will only be so if certain social norms (e.g. fairness norms) are violated or when the out-group poses certain threats (e.g. threats to the in-group's safety) to the in-group, the two main driving forces behind cooperation in the first place, as discussed in both the parochial altruism conjecture and the coalitional computation conjecture. As is shown throughout history, different groups do engage in mutually beneficial activities, they do form coalitions, and among many modern and ancestral groups collaborative relations exist. These mutually beneficial activities can be regarded as another fruit of the exceptional human capacity for reasoning.

4. Reputation and costly signaling

Thus far, a few intertwined processes that have a bearing on contemporary prejudice and bias motivated behaviors have been discussed. All of these center around human sociality, where the notion of “parochial altruism” and the subsequent coalitional psychology take up a central place. However, in order to maintain group living (or sociality), punishment is an essential element, as neither unconditional cooperation nor unconditional defection would be favored by natural selection. As has already been suggested in the sideline of the foregoing discussion, another such mechanism is *reputation*. In this section, two distinct types of reputation building that are closely intertwined with the previous exposition will be elaborated on.

When one thinks of reputation, signaling theory immediately comes to mind. Signaling theory is a well-established theory in evolution, and has been studied abundantly in both plants and animals (for an overview, consult Searcy & Nowicki, 2005). The core principle of the theory is basically very simple: sometimes organisms display features that only serve to signal a specific quality to fellow members of that species. The qualities signaled may range from strength, for example dominance, to sexual health (as is the case in sexual selection theory). This way, it can be regarded as a mode of communication between different animals. If the signal is maladaptive to the organism in question, then it is called a *costly* signal – and most signals do imply a certain cost.

The schoolbook example of signaling is the peacock's tail. The very large, colored and complex tails of the peacock are a signal of reproductive fitness of the peacock. The bigger and brighter the tail, the stronger the signal is, but also the more costly the signal is to the organism carrying it. For sure, you can imagine what it would be like to drag around a tail of that size respective to the size of the peacock itself. This can be called a costly signal, given that apart from

signaling reproductive fitness, it does benefit the peacock's ability to cope with environmental pressures, quite on the contrary indeed. However, if a peahen has the choice between two peacocks to mate with, she can infer from the size and quality of the tails which peacock has the best reproductive quality: the peacock that is able to bear a larger "cost", is the fittest peacock.⁴⁰ Even though this principle is of a very general nature, it can be applied directly to the above discussion on punishment and parochial altruism. As will be discussed in the next section, it will prove to be of direct importance to the explanation of prejudice and bias motivated behaviors, too.

Of course, mankind is equally inclined towards signaling certain qualities notwithstanding the fact that the story there is a bit more complicated as signaling in mankind is to a greater extent niche-bound. A great example would be the difference between males investing a lot of time and energy in the gym to "bulk up", compared to those males spending efforts to "be the brightest". Whilst both are valid signals in their own right and cultural niche, the appearance of both males will be entirely different. Apart from this type of signaling more or less bound to sexual selection, human cooperation also fosters signaling, in a very important sense. Recall that people are imperfect conditional cooperators. On top of that, they often interact in "one shot" situations, which does not enable them to create an image of the reciprocation partner. Exactly in this type of situation, signaling and reputation building are of the utmost importance (e.g. Barclay, 2006a; Barclay, 2006b; Nowak & Sigmund, 2005). In short, by giving certain costly signals, people are able to build a reputation of a good group member, which abides by the norms of reciprocity or cooperation. In the exposition above, both genuine pro-social tendencies and cheating have been mentioned. Both are accompanied by a specific form of signaling, as will be discussed below.⁴¹

4.1. Genuine signaling of pro-sociality

One pressing issue in wider networks with recurrent one-shot interactions would be the assessment of a previously unknown interaction partner with regards to his merits as a good or bad reciprocator. In order to resolve this issue, people will often help others altruistically or

⁴⁰ It must also be noted that this kind of signaling of reproductive fitness is not limited to signals of beauty and splendor. In the case of chimpanzees, for example, the females that look most "ravaged" so to speak, bear the preference of the males. The signal there is interpreted to exemplify the female's experience in bearing children, leaving visible markers in her bodily appearance.

⁴¹ In those sections, the reader will notice far less references than in the preceding sections. This is due to the fact that the two types of signaling are my own conjectures in case of prejudice, and will subsequently also be empirically tested. That is, the following sections are the basis of what I hope to be my humble contribution to our understanding of prejudice and bias motivated behaviors.

perform acts that signal their willingness to invest energy and means in the welfare of the group, such as altruistic punishment. The main advantage of this, is that it may endow the party performing the act with a reputation as a good member, a “team player”. This may facilitate future interactions insofar as it allows possible interaction partners to easily evaluate the person in question, and consequently facilitate interactions with them. This way, a good reputation may enable them to attract more like-minded reciprocators, which would benefit them all in the long term (*supra*).

This particular in-group dynamic can be translated to the intra-group level through the module of coalitional computation. That is, in the face of out-group threat, signaling opportunities present themselves as well in the shape of the proverbial “taking one for the group”. When the conditions in which parochial altruism thrived are present, my conjecture is that defending the group against threatening or competitive out-group members is an equally valid mode of signaling. As is the case with punishment, this can often occur by the formation of coalitions: the entire group takes part in the defense of the in-group against possible threats or in the competitive conflict over resources. Those who do not take part, can easily be regarded as bad group members insofar as they are not willing to invest (for example by taking a risk in conflict) in the wellbeing of the in-group. Those that actually do take part in the conflict, however, are regarded as good group members. This way, from an evolutionary point of view out-group aggression can in principle be regarded as a specific instance genuine commitment to the in-group in the face of conflict or competition.

Of course, this dynamic is further shaped by specific initial conditions. For example, is the out-group a previously unknown group or a known group? In the former case, out-group hostility will depend on conditions such as the match between groups, and the symbolic interchanges between the groups, such as food sharing. If the group is a known group, the likelihood of intergroup conflict will depend on their former status. If the group was previously known as an allied group which now turned on the in-group, conflict is very likely as this can be regarded as a form of large scale defection. Again, however, this will depend on the match between both groups, as does the outcome of the conflict (see Heylen & Pauwels, 2015, p. for more information on this mode of signaling).

4.2. Deceptive signaling of pro-sociality

Once sociality has emerged, defectors will also tend to signal their commitment to the group and its norms by mimicking cooperation. This is, in my opinion, the second form of signaling

the evolution of sociality entails. This type of signaling differs significantly from the former, in that the reason for signaling is very different, *i.e.* not being exposed as a defector. These individuals not really care about the group, but does care a lot about him- or herself. They are not in the game for the sake of the group, but to really gain something from being in the group. They act pro-socially to safeguard their own interests. As signaling is all about reputation, the most prominent gain to be made in this context is that of *higher status* within the group. This way, even though the final result on a group-level may be beneficial, the intrinsic motivation of the performing party need not be. That is, a more selfish orientation on an individual level, may still result in a group-wide beneficial effect. For this reason, I have dubbed this type of signaling “deceptive signaling of pro-sociality” given that one deceptively (individual motivation) signals pro-sociality (as it does, in the end, benefit the wider in-group) (Heylen & Pauwels, 2015).

As the signal’s impact is a function of the cost of the signal, I conjecture that these individuals are the prime candidates for third party punishment and (seemingly) altruistic helping. An interesting fact in this case is that third party punishment is only feasible if it is executed by *dominant* individuals. The reason is that they usually have easier access resources, there is a lesser risk of retaliation if punishment is executed by a high-status individual (Barclay, 2006b; Eckel, Fatas, & Wilson, 2010; Kim, Smith, & Brigham, 1998) and/or, they tend to be part of large coalitions (Mathew & Boyd, 2011). This latter finding can be explained by the fact that people will tend to team up with those who are powerful, lesser so with those who are not able to display signs of strength and overall good quality. As indicated earlier, punishment within a group tends to be performed in coalitions, and it is presumably the dominant individual that takes the lead therein.

Again, this dynamic can be easily transposed to the inter-group level through coalitional computation. in the face of inter-group conflict, taking the lead in the struggle, and consequently running the most risk on injury or even death, is a very strong signal to fellow group members, resulting in a heightened status within the group. In the previous paragraph, it was suggested that these dominant individuals often are part of large coalitions, which hints at an interesting dynamic at play in a social group, between dominant and more subordinate individuals, which will be discussed in the next section.

4.3. Intermediary conclusion: leaders and followers

Both types of signaling do not merely exist next to each other. In first instance, both types may be present in one individual at the same time. The reason for this is the level of selection: genes coding for either one type of signaling may be passed on to future generations, and it is very likely that both are present, to differing degrees, in any given individual. Traits so important to the survival of our species are likely to be found in every specimen thereof, that is. Second, from a group-level perspective, an interesting dynamic may take place. If both types of “signalers” are present, it is very likely that group cohesion rises as well. For, if a dominant individual signals his power and status by, for example, punishing a defector, the bystander effect may evoke similar reactions of those who genuinely signal their commitment to the in-group, thus strengthening the overall signal. The more coherent or coordinated this type of action is, the better it will function for the group. The same holds for the conditions of threat and competition. When a dominant individual takes the lead in an attack on the threatening out-group, or in the defense of the in-group, the bystander effect may result in a coordinated, group-wide action to preserve the interests of the in-group.

Apart from any moral connotation one might intuitively connect to words such as “dominance”, the overall result for the group, and eventually the genes residing in that group, is positive.⁴² As Pinker put it, “*according to evolutionary biology, all societies-animal and human-seethe with conflicts of interest and are held together by shifting mixtures of dominance and cooperation*” (Pinker, 2002, p. 286) In the next chapter, the two types of signaling will be brought into relationship with two very well-known ideological attitudes that are considered to be the two most salient predictors of prejudice: right wing authoritarianism and social dominance orientation. Before doing so, however, some auxiliary hypothesis will be discussed to complete the picture. More precisely, the mechanisms discussed can account for the creation of multiple groups in societies, and shed more light on how the processes described above are put to practice.

5. Auxiliary mechanisms

In this section two auxiliary mechanisms that may contribute to the persistence of sociality will be discussed. The first is the *transmission of norms*. A lot of the foregoing has (implicitly) dealt

⁴² On the long term. Of course, the violence that often accompanies dominance struggles has negative aspects for the in-group as well.

with norms and their transgression; punishment occurs when one fails to reciprocate, for example. Thus, an important element is how people actually pick up such norms, and how such norms may be transmitted through time. As will be explained, these mechanisms enable the formation of a variety of groups and sub-groups in society as well (with all the coalitional psychology in its wake). The second element that will be addressed is the *role of emotions*. Emotions play a very important role in any evolutionary process, as they are the proximal stimuli to do something or to refrain from doing something. That is, all of the above processes do not necessarily occur consciously (most of them do not), but are mediated by emotions.

5.1. Transmission mechanisms

In this section, I will consider a few basic mechanisms through which people pick up norms from an evolutionary point of view. The goal is *not* to discuss the vast array of theories that exist with regard to social learning and socialization.⁴³ Again, the goal of this is to answer the “ultimate” question: notwithstanding the fact that a lot of social scientific research exists that describes *how* social learning processes come about and what the differential effects of various social learning practices may be, it remains an open question *why* people are susceptible to socialization in the first place.⁴⁴ Especially with regard to the persistence of in principle non-fitness improving norms from the point of view of the individual, a discussion on cultural transmission is important. For, even though the direct pay-offs of cooperation and biological altruism might have been superior to those of a more selfish nature in the conditions described above as experienced by our distant ancestors, in many cases these conditions have altered a great deal since then, which makes the pay-off or fitness maximization of norms a troubling question. The discussion will be limited to the discussion of two specific evolutionary mechanisms that may underlie socialization, as they present an interesting additional dimension to sociological socialization theories: *conformist transmission* and *unbiased transmission*.

Unbiased transmission refers to the transmission of (behavioral) traits from parents (vertical transmission) or other elderly in the social environment of an individual (oblique transmission)

⁴³ The terms “socialization”, “social learning” and “cultural transmission” are interchangeable in this context. Socialization can be considered to be a more specific form of social learning in general, which, in turn, can be considered to be a subtype of cultural transmission (which, for example, equally occurs through books and other artifacts).

⁴⁴ This is probably due to the fact that social scientist usually seek an answer to other questions. For example, a criminologist applying socialization theory usually is interested in the outcome of a differential socialization process, that is, how differential socialization may lead to (certain forms of) antisocial behavior. As happens often, the explanation of a locally restricted phenomenon (the particular crime under consideration), is sought on a higher level of universality (socialization, which accounts for much more than only that crime). However, in my personal opinion, such an explanation may clarify why someone committed a certain crime, but in order to fully understand the mechanism (and maybe try to affect it), a more profound explanation is needed, i.e. one that also takes into account the reasons why people are susceptible to this mechanism, and why it equally leads to a variety of different outcomes.

to a given individual (Bowles & Gintis, 2011, pp. 168-185). These types of cultural transmission can be regarded as being unbiased when they entail individual learning where an individual adopts the behavior of parents and/or random other individuals in the population (e.g. Henrich & Boyd, 1998, p. 219).

In a similar vein, Bowles and Gintis speak of *payoff-based social learning*, when individuals adopt the behaviors of others who they consider to be really successful in life (2011, p. 169-170). The reason why such mechanisms of mimicking may have evolved through the course of the evolution of humanity (but also other organisms) is rather clear: the mimicking of apparently successful behavior is a non-costly way to acquire specific successful strategies.⁴⁵ With regard to humanity, one really need not look very far to see this mechanism in action, examples of which including children's imitating of super heroes, and the many sports idols that are being adorned and imitated ("I want to be just like ...") all over the world. Parents, in this respect, usually take up a prominent role. These views are consistent with the great many developmental theories that exist in psychology today.

However, what these mechanisms cannot explain is why human culture, as opposed to transmission in animals, has a tendency to be *cumulative*, meaning that humans are capable of quickly learning certain behaviors or skills by means of observation or instruction, which they would otherwise never have learned on their own. This can be explained by the unique human capacities for *conformist transmission*, as opposed to unbiased transmission. In this type of transmission, the behaviors or traits that are exhibited by *most* of the members of a population are adopted by the social learner. Thus, the most commonly observed traits tend to (cumulatively) replicate through time. As Henrich and Boyd indicate, conformist transmission does not operate alone, that is, other forces of learning norms and constraining conditions are present – if not, the most prevalent cultural traits or norms would become the *only* ones. It does, however, provide a "directional force" in the maintenance and establishment of moral norms – the "mainstream" if you wish – for which unbiased transmission is insufficient (Henrich & Boyd, 1998, pp. 219-220). They furthermore indicated that conformist transmission is salient in a wide variety of contexts, through various computer simulations (Henrich & Boyd, 1998, 2001). As appears from these studies, conformist transmission is favored by selection as long as environments are relatively stable, greater rates of environmental change decrease reliance on social learning whilst the adaptiveness of conformist transmission is not touched, conformist

⁴⁵ One specific such mechanism is prestige-biased transmission, where prestigious people are disproportionately more imitated compared to others. This allows to link transmission back to the concept of costly signaling.

transmission increases the reliance on social learning, and changes in the number of subpopulations do not alter the adaptiveness of social learning.

The emergence of conformist transmission in periodically changing environments was further investigated by Nakahashi, who very interestingly found that the rate of environmental change bears a negative relationship to the strength of conformity bias (using computer simulation models), contrary to the findings of Henrich and Boyd⁴⁶ (Nakahashi, 2007). Thus, the more stable the environment, the less susceptible to conformity bias subjects will tend to be, or so it is argued. In a similar vein, McElreath et al. even state that conformity emerges *only* in scenarios with changing environments (McElreath et al., 2005, pp. 501-504). In any case, next to these differences in intensity, the dynamics with regard to changing environments have been endorsed by several other studies (e.g. Aoki, Wakano, & Feldman, 2005; Wakano & Aoki, 2006; Wakano, Aoki, & Feldman, 2004). In this context it is most certainly noteworthy that a change in the environment can consist of migrations to other places as well, which do favor conformist transmission for various migration rates⁴⁷ (Henrich & Boyd, 1998, pp. 228-229; Nakahashi, 2007, p. 62).

A very important population-level effect of conformist transmission is the fact that if multiple groups are present, this results in multiple equilibria. Put differently, once conformist transmission occurs in a population in which various subgroups are present, it *maintains group boundaries* between those different groups. In this sense, it is a process which explains within-group similarity as well as between-group differences on a cultural level, but also phenomena at the heart of this study, such as group stereotypes, ethnic conflict and racialization of social relations (Henrich & Boyd, 1998, p. 231). As indicated earlier, conformist transmission is likely to gain in importance the more instable a given population is in terms of its composition in subgroups. In cases of high migration flows and a constant flux, it can therefore be predicted that conformist transmission will rise, and, as a consequence thereof, equally so the maintenance of group boundaries. It is important to point out that the norms we are talking about here are not restricted to the ones discussed earlier in case of the human ancestral past. In principle, the discussion on conformist transmission applies to all kinds of norms, such as

⁴⁶ The reason probably being that Henrich and Boyd stopped the iterations of the model before a true equilibrium could be achieved (see Wakano & Aoki, 2007). In prolonged runs of the same model as applied by Boyd and Henrich, Wakano and Aoki achieve results congruent with those of Nakahashi.

⁴⁷ In principle, I think the reasoning can be taken further than merely migrating to another environment. For, immigration rates may also alter the environment to a large degree, and consequently have a catalyst function in the emergence of conformist behavior.

what clothes to wear, table manners, norms on interpersonal conduct, and the like – in short, anything constituting the *cultural habits* of a group. Even though such norms may seem superficial at first sight, other norms relating to honor and the sanctioning of violence are also covered by it. In this sense, conformist transmission is also able to spread the norms relating to punishment of norm violators through a given group.

5.2. Emotions as proximal stimuli

Now how are all of the aforementioned processes put into practice? What is needed in order for these evolutionary adaptive behaviors to take effect in the sense that people also react to them, are so called “proximal stimuli”. Evolutionary theorists as early as Darwin (1998) himself suggested that the proximal mechanisms of genetically inherited traits relate to emotions. Indeed, in the pioneering work of Trivers, an entire section is devoted to “*the psychological system underlying human reciprocal altruism*” (Trivers, 1971, pp. 47-50). There he expounds on the emotions of liking and disliking, moralistic aggression, gratitude, sympathy, and guilt.

Emotions of shame, guilt, anger, and liking or love play an important role in the maintenance of strong reciprocity. It can be argued that even though many of the genetic variations mankind has experienced in the course of its evolution may be conscious decisions (for example many acts of reciprocity are), but this need not always have been the case, nor is this now always the case. That is, the often heard of intuition people act upon may well be proximal extensions of the evolutionary mechanisms described above. In the context of altruism and cooperation more specifically, one finding in support of this is that people *like* to punish norm transgressors. De Quervain et al. found in this context that the same brain regions were activated in the case of punishment as those in the case of rewards (de Quervain et al., 2004). Further, similar research indicates that in ultimatum games, low contributions triggered emotions of anger and sadness in participants (Bosman, Sonnemans, & Zeelenberg, 2001). In a similar vein, the brain areas associated with disgust and anger were activated in this type of scenario (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003).

In the other direction, low contributions may elicit emotions of guilt and shame in the norm transgressor. Bowles and Gintis discern guilt and shame in the following sense. Guilt may be experienced by an individual alone by not respecting a certain norm, whilst shame needs to be induced by others (Bowles & Gintis, 2011, pp. 186-188). Thus, shame is essentially socially induced. Bowles and Gintis (Ibid., p. 187) quote Jon Elster (1998, p. 67) to make the point clear: “*material sanctions themselves are best understood as vehicles of the emotion of contempt,*

which is the direct trigger of shame". Thus, next to the strictly material "rational choice" component of material punishment, an important emotional component is of great importance – if not the most. In this context it is also important to recall that punishment is often symbolic, and that this symbolic punishment is often effective. This cannot be explained by material incentives alone, but it can be explained on the basis of emotions. Equally so, emotions play an important role in spiteful behavior or antisocial punishment. If one contributes a lot and gets punished nonetheless, this may induce feelings of spite and anger, with retaliatory actions as a result (Bowles & Gintis, 2011, p. 187). This can be regarded as the proximal mechanism responsible for the decline of cooperation in cases where antisocial punishment occurs, especially taking into account that it is strong reciprocators that are the ones sustaining cooperation.⁴⁸

6. Conclusion

In this section, the roots of human sociality have been discussed. As may have already appeared from the above, there is a considerable dark side to human sociality as well, especially with regard to upholding group norms. Both in-group members and out-group members are often the targets of formal or informal sanctions, be it that out-group members are generally punished harsher than in-group members. The main hypothesis of the current study is that at the least some forms of prejudice can be considered to be instances of pro-social behavior, conditional on the initial conditions of *intergroup conflict or competition*. Especially the notion of parochial altruism, indicating clearly the fact that pro-social behaviors such as altruism or cooperation can be limited to in-group members is compelling in this context. It allegedly resulted in the evolution of a psychology of detecting group membership, or, as Kurzban and Leary call it, a coalitional psychology (Kurzban & Leary, 2001, p. 196).

Another important element is altruistic punishment. As was indicated above, norms need to be maintained by punishing defectors, otherwise defection would become the dominant strategy. We have also seen that this punishment usually is harsher towards out-group members than to in-group members, especially if they defect towards in-group members. In combination with the notion of coalitional psychology, this might indicate that *bias motivated aggression may be seen as an instance of parochial altruistic punishment*.

⁴⁸ Even though it has been argued that spite can actually have an evolutionary benefit through "hyper competition" (see Jensen, 2010).

Further, in the maintenance of pro-social behavior, costly signaling played an important role as well. This related to bearing a cost in favor of the in-group, basically to show to fellow in-group members that one is a “team player”, or to show one’s dominance. Given the above, this dynamic may be intra-group, insofar as signaling may be about indicating one’s willingness to uphold group norms, or inter-group, insofar as it may indicate one’s willingness to defend the group in conflict or competition. Both may in principle be applicable to bias motivated aggression. It must also be remembered that the signaling mechanism is not totally detached from the punishment mechanism: the cost of punishment may provide the costly signal one is looking for (in case of dominance signaling), or taking part in coalitional punishment may provide a signal that one is a team-player (in case of submission signaling).

On the basis of these theoretical findings, the general goal formulated in the introduction may be refined. In this sense, it can be argued that the evolutionary mechanism described above fulfills the criteria of theoretical progress formulated by Karl Popper (2002 [1959]), esp. sect. 34, 35, and 36). First of all, the theory is of a *higher degree of universality* than most current explanations of racism are. Even though there is no exact way to “measure” the degree of universality of any given theory, what can be shown is that most current explanations of prejudice, as we will see in the next chapter, are proper subclasses of the evolutionary theory set out in this chapter. This relates to the alleged overspecialization in the field of prejudice studies: all the different “-isms” can be brought under the auspices of the evolutionary theory set out in this chapter, except for those “-isms” that make reference to the ill as this corresponds to an entirely different cognitive module. In this sense it can serve as a platform of unification of those different theories. In the next chapter, such endeavor will be initiated by incorporating current social psychological theory into the evolutionary framework.

With regard to the latter, it has to be noted that the theory in principle also excludes more, *inter alia* the types of social exclusion directed at the ill. This means that the theory has a larger class of potential falsifiers in Popper’s words, which speaks to its merit. This increases the merit of the theory, as it allows for more critical tests to potentially reject it: in the case of illness or handicap, the theory should *not* hold, if my conjecture is correct. In this sense, the empirical content⁴⁹ of the evolutionary theory is greater than that of the theories that can be regarded a proper subclass of it.

⁴⁹ Popper defines the empirical content of a theory as the size of its potential falsifiers. Theories that forbid more, thus have greater empirical content in the sense that they assert a lot about our world; the boldest claims

However, at the same time, the *logical content* of the theory, defined as the class of non-tautological statements that can be derived from it (Popper, 2002[1959], p 103) also increases. That is, the theory is not confined to deducing prejudice and bias motivated behaviors alone. It is equally allows the deduction of a vast array of different kinds of behaviors, which might at first sight seem unrelated to prejudice. In this sense, it also allows for the modeling of, for example, purely altruistic acts. This is due to the conditionality of the phenomena deduced from the theory: it only results in prejudice if the specific conditions of intergroup conflict or competition are present. When other initial conditions are present, other instances will follow from it, be it that the universal statement remains the same. In this sense, the theory has a powerful potential for unification. This can simplistically be visually represented as follows with some random examples of different instances rooted in the same universal statement:

1	Biological altruism / cooperation							
2	Parochial altruism				Kin selection			
3	Religious xenophobia		racism		Investing in children		Helping parents	
4	Antisemitism	islamophobia	Anti-Black	Anti-hispanic	Paying tuition	Food sharing	Nursing	Food sharing

Table 5: instantiation and various levels of universality. Moving form 1 to 4, the level of universality decreases.

Content-wise, the theory thus predicts the following two propositions to be true:

P1: prejudice is an instance of human sociality bound by the initial conditions of intergroup threat and/or conflict

P1a: prejudice is an instance of human genuine sociality bound by the initial conditions of intergroup threat and/or conflict.

P1b: prejudice is an instance of human deceptive sociality bound by the initial conditions of intergroup threat and/or conflict.

as it were. By the same token, the theories that are the easiest to falsify are also those with the greatest empirical content.

P2: bias motivated aggression is an instance of costly signaling one's commitment to the in-group, in case of intergroup conflict and/or competition

P2a: bias motivated aggression is an instance of costly signaling one's genuine commitment to the in-group in the face of conflict and/or competition.

P2b: bias motivated aggression is an instance of deceptively signaling one's commitment to the in-group in the face of conflict and/or competition.

Recall that an "instance" in critical rationalism refers to a certain manifestation of a (more) universal law, bound by certain conditions. Thus, what P1 states, is that prejudice can be regarded as one among many manifestations of human sociality, but only so within the specific conditions of perception of threat or conflict emanating from specific out-groups. Similarly, P2 states that bias motivated behaviors are a manifestation of costly signaling, both in a genuine or deceptive way, bound by the very same conditions. In the next chapter, these premises will be translated to modern social psychological research, in order to obtain a testable model.

Chapter III. Contemporary social psychological explanations of prejudice and bias motivated behaviors

One of Allport's lasting contributions to our understanding of human nature is the recognition that prejudiced attitudes are not necessarily the result of a hateful ideology, or that of a limited intellect, or a disordered personality. Prejudice, instead, may reflect ordinary principles of social psychology: it is the byproduct of basic psychological processes by which the average person understands and relates to the social environment.

Bernd Wittenbrink (2004, p. 306)

In the previous chapter, the theoretical basis of an evolutionary theory on the etiology of prejudice and bias motivated behaviors has been outlined. This framework will serve as the macro-level framework in which the social psychological theories that will be discussed in this chapter, will be placed. In line with the philosophical background of the study, it can be said that the universal statement underlying this theory comes down to the following claim:

Every human is equipped with a coalitional psychological module, the probability of it resulting in inter-group hostility is increased by the perception of inter-group conflict and / or competition.

This means that the coalitional psychology humanity is equipped with does **NOT**⁵⁰ automatically lead to prejudice. The only thing this statement says is that the probability of prejudice and bias motivated aggression to occur are increased if someone finds him- or herself in a context of inter-group conflict and/or competition by a specific out-group. Apart from that, it may result in friendly inter-group interactions and exchanges, which is presumably the most occurring instance of the coalitional mechanism today. As stated by Pinker, different groups usually don't extinguish each other because people belong to different groups instead of one, a great many different modules and norms exist that counteract the manifestation of violence, and there are many reasons to keep inter-group relations peaceful. This is especially so more the case in contemporary times compared to our evolutionary history (see, inter alia, Pinker, 2002;

⁵⁰ I put the "not" in capitals to avoid the misreading of such a universal statement in a deterministic way. Clearly, evolutionary biology does not result in deterministic explanations of behavior, as explained before, for example genes only influence behavior, which is quite something different from determining it (see, inter alia, Pinker, 2002).

2011). So, it is of the utmost importance to pinpoint the conditions fairly precisely – or as precise as is possible in the social sciences – in order to elaborate the evolutionary theory so that it is suited to be applied to and researched in contemporary society. In this chapter, current scholarship on prejudice and bias motivated aggression will be discussed, and linked back to the previous chapter.

The text is structured as follows. In an introductory part, the general shape prejudice has taken over the years will be (briefly) discussed. This will be followed by approaches focused on in social psychology. Social psychological approaches will be the sole focus point of this chapter, as they appear to have the most longstanding tradition in the explanation of prejudice. More precisely, the focus will be on Duckitt's dual process model of social dominance orientation (SDO) and right wing authoritarianism (RWA). This section will be followed by a section dealing with another longstanding social psychological research tradition in prejudice studies, i.e. integrated threat theory. The focus of these approaches is not on the person as is the case with RWA and SDO as they are both individual difference measures, but on the (inter-group) context. Throughout the text, reference will be made to the previous chapter on evolutionary theory, in order to indicate possible (in)compatibilities between current theorizing and the evolutionary framework. In a concluding section, the main research questions of the study will be reformulated in terms of the current theories.

1. A little bit of history

The roots of the modern study of prejudice and discrimination can be found with Gordon Allport, and is in itself a continuation of the tradition of Bogardus (1928). This research tradition had a rather strong focus on blatant or explicit forms of prejudice, often measured by means of self-report studies (e.g. Pettigrew, 2009, p. 40). “Old-fashioned” racism in this context is to be understood as the open expression of racial prejudice and racist attitudes, for example in interview settings before, generally speaking, the 1970's (e.g. Leach, 2005, pp. 434-435).

However, it is argued by some that, *inter alia* due to the official judicial recognition of anti-discriminatory legislation (i.e. the criminalization of racism), overt expressions of racism have dropped, which may appear from an increase in the formal support for racial equality, but no notable increase in the support of policies designed to achieve that goal (Bobo & Fox, 2003, p. 323; Rabinowitz, Sears, Sidanius, & Krosnick, 2009, p. 806), or the finding that there is a denial of societal discrimination, both socially and formally (e.g. Pedersen & Walker, 1997, p. 563; Pettigrew & Meertens, 1995).

All of these findings seem to indicate two varieties of prejudice, one old and blatant (including overt expressions of prejudice such as bias motivated aggression), and one more subtle (overt denial and rejection of prejudice, but symbolic expression thereof). In the rather extensive literature on this subject, different names and related terms can be found for the “new” racism of the post-WWII era: modern racism (e.g. Akrami et al., 2000; Pedersen & Walker, 1997; Simmons & Lecouteur, 2008), symbolic racism (e.g. Green, Staerkle, & Sears, 2006; Sears & Henry, 2003, 2005), implicit prejudice (e.g. Lun, Sinclair, Whitchurch, & Glenn, 2007; Ryan, Turner, & Reynolds, 2002; Sears, 2004), aversive racism (e.g. Dovidio, 2001; Dovidio & Gaertner, 2004; Gaertner & Dovidio, 2005; Penner et al., 2010), subtle prejudice (e.g. Pettigrew & Meertens, 1995; Whitley, 2011; Yang, Tian, van Oudenhoven, Hofstra, & Wang, 2010), and unconscious racism (Duster, 2008; Quillian, 2008). Even though (minor) differences exist in their focus with regard to the explanation of “modern” racism, they do share the belief that racism in contemporary society has either shifted to more subtle forms, or that behaviors and attitudes generally perceived to be non-biased are in fact motivated by bias (e.g. Pettigrew, 2009, p. 40).

As may be expected, however, this concept has been scrutinized by other scholars. Some claim that blatant racism has not declined that much (e.g. Vala, 2009), whilst others argue that overt or blatant expressions of racism have never been very popular, not even in the first half of the twentieth century, and that subtle racism has also been around much longer than has been supposed by the scholars researching it (e.g. Leach, 2005, pp. 435-436). This raises the question as to the status of these concepts, and how they should, if at all, be discerned. Furthermore, it is argued that new racism does not explain racism as such, but rather states that “old racism” is replaced by a “new” kind of racism, which indicates the difficulty that modern racism scholars face, insofar as might be presented as a “new” kind of racism, but it does not fall back on new *explanations* of racism.

The brief history of social-psychological research on prejudice also sheds more light on the reception of this topic in criminological circles. As appears from literature, criminologists only gained interest in the study of prejudice and bias motivated aggression in the last part of the 20th century. This may be due to the focus criminology often has on crime, in Sutherland’s sense as “rule-breaking”. It follows logically that, once egalitarian legislation came into place, criminologists’ interest in the topic of prejudice and bias motivated aggression was sparked as well, as it presented a new research topic in their domain once it was criminalized (at least in part). As will be discussed later, however, criminologists’ interest in the etiology of prejudice

and bias motivated aggression is rather limited. Most of the attention in criminologists' work in this respect goes to offending *by* minorities, and socio-legal studies into the (de)criminalization of certain behaviors (in the critical criminology tradition of research).

What can be said about this discussion from the vantage point of the evolutionary theory outlined in the previous chapter? The variety in expressions and “shapes” of prejudice and bias motivated aggression seem logical from the point of view of evolutionary theory. For, norms and their enforcement play an important role in the evolution of human societies. In this context, a variety of norms that go against violence in general and prejudice more precisely, have evolved over time as well (see, for example, the excellent book-length exposition on the matter by Steven Pinker; and the works of criminologists Knepper and Tonry). As people are susceptible to what others think of them (reputation), and are willing to signal conformity to the group or their overall quality as a person, the adoption of these norms, consolidated” by the stroke of a pen” or not, leads to an overall change in the way prejudice is expressed as well as an overall drop of levels of prejudice itself.⁵¹ For even if people still are prejudiced, it is at least plausible that the expression thereof will change, in order to conform to the new norms that have emerged, given that they find themselves in a context where such norms and values are salient. Let us now turn to the most prominent explanations of prejudice in contemporary scholarship.

2. Social-psychological theories on prejudice

The subject matters of prejudice and racism have been studied by a wide variety of disciplines, ranging from biology, psychology, social psychology, sociology, criminology, to legal studies. As happens often in the sciences, the different fields in which it has been studied (the different points of view taken up on the subject), however have not been good conversation partners. An awareness of this has emerged in literature, however, for example by Bobo, stating that social psychological explanations of racism have become indispensable in any sociological analysis thereof (Bobo & Fox, 2003, p. 325). In this section, the main social psychological explanatory theories with regard to prejudice will be discussed: the dual process model and integrated threat theory.

⁵¹ Notwithstanding spatiotemporally bound fluctuations in levels of prejudice, the long term view clearly indicates a steep decline in both the attitude itself as well as the biased behaviors that accompany it. Consult Pinker (2011) for an overall overview of this and like declines in global levels of violence.

2.1. Dual process model

In contemporary social psychological scholarship on prejudice, two predictors are at the center stage: Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO). Both have been deemed to be independent predictors for prejudice with cross-cultural validity. Given the fact that they present two distinct paths to prejudice, they have also been combined into a single model, i.c. the dual process model.⁵²

2.1.1. Right Wing Authoritarianism

Historically, RWA finds its origins in the work of Adorno (1950), where it was considered to be a stable personality trait. Due to problems with the dimensionality of the concept (i.e. it was not unidimensional), it has been adapted to Right Wing Authoritarianism by Altemeyer (e.g. Altemeyer, 1981, 1988, 2006)⁵³, who found a unidimensional concept based on three of the original nine traits used to measure RWA, i.c. *conventionalism* (adherence to the norms and values of mainstream society and its authorities), *authoritarian submission* (willingness to abide by legitimate authorities unconditionally), and *authoritarian aggression* (aggression against groups perceived to be legitimate targets as described by legitimate authorities).

More recently, however, the idea that RWA is a stable personality trait has been left behind, and it now is regarded as an (ideological) attitudinal dimension. (e.g. Roets et al., 2006, p. 156), which is triggered by one's worldview, personality, and life-course. With regard to worldview, it corresponds to the belief that the world is an unsafe place versus a safe one. The two extremes can be described following Duckitt et al.: the belief that "*the social world is a dangerous and threatening place in which good, decent people's values and way of life are threatened by bad people versus belief that the social world is a safe, secure and stable place in which almost all people are fundamentally good*" (Duckitt, Wagner, du Plessis, & Birum, 2002, p. 92). This perception of the world results in a heightened motivation for security, social order and social cohesion. Individuals high in RWA will therefore display a preference for groups that have stable norms and in which these norms are effectively upheld ("policed"). It is explicitly *threat* driven, and includes both realistic and symbolic threats (e.g. Asbrock, 2010, p. 326; Stephan &

⁵² Duckitt even considers them to be the only two dimensions making up one's ideological space (Duckitt, 2001). Ideology is seen as a two dimensional concept, with the first dimension ranging from cultural conservatism to openness to other cultures, and the second ranging from economic conservative beliefs and a belief in hierarchical social stratification to liberalism and openness to others (Duckitt, 2001; as discussed by Roets, Van Hiel, & Cornelis, 2006, p. 156).

⁵³ An elaborate, book-length, and up-to-date discussion on "the authoritarians" has been published for free on the internet by Bob Altemeyer, one of the founding fathers of the concept. For more information, please consult: <http://members.shaw.ca/jeanaltemeyer/drbob/TheAuthoritarians.pdf>

Renfro, 2003). Out-groups, then, are usually seen as threats to traditional values and norms. Derogation of out-groups serves the purpose of depicting them as inferior and therefore unimportant (e.g. Altemeyer, 2006, p. 56). Derogation of, but also aggression towards these out-groups is justified by depicting them as morally inferior, and is all the more likely to occur when such violence would be approved of (or accepted by) what they perceive to be legitimate authorities (which can be the state, but also other institutions or persons, such as religious leaders etc.). In this sense, their behavior is self-righteous (Altemeyer, 2006, pp. 21-24; Whitley, 1999, p. 126).

Even though RWA is an ideological attitude, it has been brought into relationship with specific personality traits. In this sense, from the point of view of the Big Five model of personality.⁵⁴ RWA has been shown to be positively related to *conscientiousness*, or the tendency to be well-organized, diligent, and achievement oriented. This relationship can be explained by the fact that submissive authoritarians usually seek to be part of the bigger picture, i.e. their in-group, and consequently dutifully act according to the dictates of that in-group. Second, RWA related negatively to *openness to experience*, or intelligence and imaginativeness, aesthetic sensitivity, need for variety and unconventional values, and differentiated emotions⁵⁵. This relationship can be interpreted in terms of RWA given that people high in RWA see the world as a dangerous place, and out-groups as threatening security and in-group norms, which is a very poor basis to engage in interactions with those out-groups. For the remaining personality traits, i.e. extraversion, agreeableness and neuroticism, no relationships with RWA have been found (for a meta-analysis, consult Sibley & Duckitt, 2008).

In the slightly divergent HEXACO model of personality, developed by Ashton and Lee (see Ashton & Lee, 2001, 2007; Lee & Ashton, 2004), a dimension called “honesty-humility” is added⁵⁶, referring to an inclination towards “*fairness and sincerity in social relations versus the tendency to manipulate and use people for whatever one can get from them*” (Sibley, Harding, Perry, Asbrock, & Duckitt, 2010, p. 517), and has been shown to have a positive relationship with RWA. This result is interpreted in terms of group cohesion: people high in

⁵⁴ Representing the five dimensions of personality on which (relative) agreement exists in psychology (see McCrae & John, 1992 for an overview)

⁵⁵ The facets intelligence and imaginativeness constitute the narrow interpretation derived from natural language studies. In the broad interpretation derived from questionnaire studies, the facets aesthetic sensitivity, need for variety and unconventional values, and differentiated emotions are added to the two facets of the narrow interpretation (McCrae & John, 1992, p. 197).

⁵⁶ It also includes extraversion, conscientiousness, and openness to experience which are operationalized similarly to the Big Five model. Emotionality and honesty-humility differ from the Big Five model.

RWA tend to prefer groups with clear rules which are readily enforced, and care for collective security.

2.1.2. *RWA and the evolutionary framework*

From the above exposition on RWA, two elements that are in complete accord with the evolutionary framework emerge. The first is the concept of a *dangerous worldview* in which *threat* takes up a central place. This resonates strongly with the idea of parochial altruism discussed in the previous chapter. For, in a world where competitions and danger are ubiquitous, one would expect the probability of acting pro-socially towards the in-group but parochially towards out-groups perceived as posing threats, to rise. Furthermore, it basically refers to exactly the same conditions as those who were spelled out in the parochial altruism hypothesis: danger and competition. Whilst these notions foremost related to physical violence and competition over scarce resources, in our contemporary day and age, they seem to be related to other commodities as well, both material and non-material. Thus, notwithstanding the differing context, the same coalitional psychology may be triggered by a wider variety of “dangers”, for example to the in-group norms, as well.

On one occasion – the only one to my knowledge – RWA has explicitly been theoretically brought into relationship with group living. Kessler and Cohrs (2008) explicitly relate the three dimensions of RWA to the evolution of cooperation and groups living. The first dimension, *authoritarian submission*, refers to the tendency to defer to legitimate authorities and their dictates. As indicated above, reciprocity and cooperation have evolved to become the *norm* in human group living, which has to be “policed” in order to maintain cooperation. RWA reflects this adherence to norms such as reciprocity strongly. Furthermore, Kessler and Cohrs indicate that group conventions (group-specific norms and habits) provide for a means to distinguish one’s own group from other groups, which yields a clear advantage in the face of conflict or competition: when confronted with outside threats from competing groups, it is essential that one can discern the in-group from the out-group. In this sense, parochial altruism as described above, is dependent on a certain degree of submission to the in-group.

The second dimension is *authoritarian aggression*, and refers to the inclination to punish transgressions of group norms, another necessary condition to sustain group living (e.g. Boyd et al., 2010). As discussed earlier, cheating would soon become the dominant strategy if it is not conditional upon punishment of cheaters or, put differently, norm-transgressors. Authoritarian aggression can thus be considered to reflect the evolved tendency to punish norm-

violators in order to keep up group cohesion. This is an essentially in-group dynamic, but in the face of threat of competing or conflicting groups, and in combination with authoritarian submission, may easily lead to outright hostility towards out-groups. Today, indeed prejudiced discourse often includes elements reminiscent of cheating, such as “they exploit us”, “they will ruin our culture” or “threaten our values”. This way, the presence of threatening (at least so perceived) out-groups triggers the evolved mechanism aimed at dealing with cheaters on a group level, through coalitional computation.

The third dimension is *conventionalism*, and refers to the tendency to hold on to traditional norms and values. Such an attitude has been of great importance in order to facilitate indirect reciprocity, a key element in large scale cooperation, as it provides a clear way to deal with coordination problems. These can be compared to “rules of the game” when interacting with others, for example the convention to stand right and walk left on an escalator. With regard to sociality or cooperation, conventionalism deals with the pressing problem of estimating whether or not one will reciprocate in the future, and if they will do so in full or only in part. A conventional rule of thumb may state that it is rude not to reciprocate, and this may facilitate the decision for the person in question. Additionally, knowledge on traditions may make it more difficult to cheat, as these are more difficult to fake by potential cheaters (Kessler & Cohrs, 2008). In practice, these conventions are picked up by social learning mechanisms such as horizontal transmission, in which people pick up the habits and conventions of the majority of the in-group (e.g. Henrich & Boyd, 1998, 2001).

Finally, an interesting phenomenon occurs with regard to authoritarian aggression. As Altemeyer (2006) explains, authoritarians will usually not act on their own; they will usually do so in group. This resonates nicely with the dynamic of informal punishment, where it has been suggested that punishment often occurs in coalitions. It has to be noted here that punishment in the previous chapter was seen from the point of view of breaking some reciprocity norm. However, as our societies evolved from ancestral to modern, the dynamic engrafted on other (moral) norms as well, including non-discriminatory norms which does not necessarily make RWA an only bad thing, even though it is usually related to moral wrongs such as prejudice (Van Hiel & De Clercq, 2009).

2.1.3. Social dominance orientation

Another such attitude which is related to prejudice is *Social Dominance Orientation* (Sidanius & Pratto, 1999), referring to people’s desire to install hierarchical relationships between

different groups in society and the idea that the in-group should and can dominate the out-group(s). In essence, SDO reflects a competitive, “dog-eat-dog” worldview in which subordinate groups threaten the dominant group’s (relative) hierarchical position (Sidanius & Pratto, 1999). The two extremes on this attitudinal dimension can be summarized as follows according to Duckitt et al.: the “*belief that the social world is a competitive jungle characterized by a ruthless, amoral struggle for resources and power in which might is right and winning is everything versus belief that the social world is a place of cooperative harmony in which people care for, help, and share with one another*” (Duckitt et al., 2002). People high in SDO resist equality in order to safeguard the privileges associated with their hierarchically superior position (e.g. Quist & Resendez, 2002). This way, SDO is positively associated with, *inter alia*, social status, support for the Iraq invasion, capitalism, anti-Black racism, and a greater allocation of value to the in-group. These and similar conclusions seem to be, furthermore, cross-culturally consistent (e.g. Sidanius, Levin, Liu, & Pratto, 2000).

Hierarchical relations are organized according to three dimensions in Social Dominance theory (e.g. Pratto, Sidanius, & Levin, 2006, p. 273), each of which differs in flexibility and associated levels of violence. The first one is *age*: adults cross-culturally have disproportionate power over children. The second dimension is *gender*: cross-culturally, men consistently have had dominance over women. These two markers of hierarchy are not very flexible in the sense that they consistently come forth all over the world, be it to differing degrees.⁵⁷ With regard to levels of violence, great variation exists from culture to culture. The last set of markers are “arbitrary set” markers, and are *culturally contingent*. That is, they do not have the same general, cross-cultural character as do gender and age, and they can be considered to be the most flexible of the three types of markers. Also, the greatest levels of violence are associated with these markers, presumably because it is about dominance of males over males, which would (theoretically) allow for total annihilation, whereas in relation to children and women total annihilation would be disastrous (e.g. Pratto, Sidanius & Levin, 2006, p. 273-275).

Hierarchies come into existence and are maintained (i.e. discrimination and violence to defend the hierarchy are justified) by *legitimizing myths*, which are, according to Pratto et al., “consensually held values, attitudes, beliefs, stereotypes, and cultural ideologies” that shape the “decisions and behaviors of individuals, the formation of new social practices, and the

⁵⁷ However, differences relate to *intensity*, not in *direction*: whilst the power men have over women differs between various places (e.g. Middle East vs. Europe), it is usually the men which have the more power over women and not vice versa.

operations of institutions” (2006, p. 275). Examples of legitimizing myths include nationalism, cultural elitism, sexism, political-economic conservatism, noblesse oblige, and meritocracy (Pratto, Sidanius, Stallworth, & Malle, 1994, pp. 742-743), often resulting in a more positive appreciation of the in-group – *in-group favoritism*⁵⁸ (Quist & Resendez, 2002). These are called *hierarchy-enhancing myths*. Contrary to this, “myths” may also be hierarchy attenuating, in which case they result in lower levels of SDO and higher appreciation of equality. It is interesting to see that people in high-status groups usually hold more hierarchy enhancing myths, compared to people of low-status groups, who seem to hold more hierarchy attenuating myths, and, accordingly, lesser degrees of in-group favoritism (see Levin, Sidanius, Rabinowitz, & Federico, 1998; Quist & Resendez, 2002; Sidanius, Pratto, & Rabinowitz, 1994).

SDO has also been related to the Big Five model of personality, where it has been negatively associated with *agreeableness* (or higher levels of “tough mindedness”) and *openness to experience*. The negative association with openness to experience is shared with RWA. However, when taking into account the six-factor HEXACO model of personality, it needs to be noted that whereas RWA related positively to *honesty-humility*, SDO relates to it negatively. Thus, the honesty-humility dimension relates differentially to RWA and SDO, providing (partial) support for a dual process model of prejudice.

2.1.4. SDO and the evolutionary framework

Some elements from SDO theory do resonate with the evolutionary framework, whilst others seem to be at odds with it. The idea of arbitrary set markers for prejudice is quite compatible with the evolutionary framework put forth in the previous chapter. There, it has been argued that the coalitional psychology that may give rise to prejudice under certain conditions does not operate on the basis of predefined or “innate” markers, such as race. It only does so, when these markers signify coalitional belonging, as was shown nicely in the experiment by Kurzban et al. (2001).

Second, the way certain markers get “cultural meaning” as it has been called, finds a place in SDO theory as well: through the notion of legitimizing myths. In these myths, certain markers are picked out and given meaning in the sense of hierarchical belonging. This way, SDO theory may be conceived of as a contemporary elaboration on this specific point, a point on which the

⁵⁸ And apparently also out-group hostility: SDO is not only a predictor for political attitudes, but also of social attitudes and behaviors. In-group favoritism does not automatically imply out-group hostility (infra).

evolutionary framework has remained silent (which is normal, as it is about what happened in the ancestral human past).

However, in the previous chapter, prejudice and bias motivated aggression have been conceived of as an instance of human sociality insofar as the conditions of danger and/or competition may give rise to an in-group orientation and cooperation, paralleled by out-group exclusion and hostility. This is at stakes with the idea inherent in social dominance orientation, as individuals high in SDO are not usually conceived of as the most pro-social people around. Quite on the contrary, they are often depicted as only interested in their own wellbeing and power (e.g. Altemeyer, 2006). However, as indicated in the previous chapter, dominance does play a vital role in the evolution of group living, as it usually are dominant individuals that are the most efficient at punishing others. That is to say, in order for group living to emerge, dominant individuals are needed, too. Further, two types of signaling were discussed in the previous chapter, one of which served the purpose of not being exposed as a defector, i.e. subtle cheating. Insofar as people higher in SDO tend to focus on their own self-interest, this type of signaling resonates well with SDO. Especially with regard to their desire for power and higher status within the group, this particular mode of signaling becomes very important. If they were to be regarded as defectors, this would have immediate repercussions on their status, which provides a strong incentive for them to deceptively signal their commitment to the in-group and its norms. This way, dominators can be regarded as selfish, and thus their seemingly social behavior can be regarded as an instance of cheating, notwithstanding the function they had in the evolution of human sociality as norm-enforcers and conflict settlers. In this sense, SDO fits well within the evolutionary framework discussed in the previous chapter.

2.1.5. Differential effects according to the out-group

So far, the discussion on SDO and RWA has been focusing on prejudice without distinction, that is *generalized prejudice*. The idea of generalized prejudice stems from the conception of a prejudiced personality in the works of Allport, Adorno and Altemeyer, who considered it to be a personality trait affecting all kinds of out-groups (e.g. Ekehammar & Akrami, 2003). Based on the idea that RWA and SDO provide different motivational bases of prejudice, a distinction has been made, however, with regard to the *type* of subgroup involved. Three types of subgroups are discerned in social psychological literature: “dangerous”, “dissident” and “derogated” (Asbrock, Sibley, & Duckitt, 2010; Duckitt & Sibley, 2007).

On this basis, it is argued that RWA ought to be a predictor for groups perceived as threatening in-group norms, values, and security (but not as subordinate) – “*dangerous groups*” – and SDO ought to be a predictor for groups considered to be subordinate (but not threatening in-group norms: in these cases dominance is exercised in order to maintain the power position of the in-group) – “*derogated groups*”. Both RWA and SDO can be predictors for directly competing out-groups or groups directly challenging social inequality, as both threat driven motivations may be elicited in these scenarios – “*dissident groups*”.⁵⁹ The reason why this distinction is often overlooked, lies in the fact that “*the kind of ethnic minority or stigmatized social groups that have been typically studied as targets of prejudice tend to be both low in power and status and because they are ethnically or culturally different are also seen as threatening the values and norms of the majority*” (Duckitt & Sibley, 2007, p. 115). Hence, both SDO and RWA are involved in the dual threat conceptualization of prejudice. Next to the evidence gathered from correlational studies, more compelling evidence can be found in longitudinal designs (e.g. Asbrock et al., 2010; Duriez, Vansteenkiste, Soenens, & De Witte, 2007; Sibley, Wilson, & Duckitt, 2007) and experimental research designs (e.g. Cohrs & Asbrock, 2009; Dru, 2007).⁶⁰

2.2. Integrated threat theory

In the previous sections, the person-oriented approaches with regard to prejudice have been discussed and summarized. However, people do not live in a vacuum, and the aforementioned ideological attitudes do not usually act automatically, which they only do in a specific social and structural context. In this section, we will look at integrated threat theory, the second main research tradition within social psychology dealing with the explanation of prejudice. Contrary to the dual process approach, ITT has an explicit focus on the context in which prejudice occurs. Even though both lines of research seem to co-exist rather independently, even though it is implicitly and explicitly clear that they are converging, it seems logical that it is “the person in the situation” which gives rise to prejudice. For this reason, the context can be considered to be equally important. As may already have appeared from the overview above, a lot of the literature makes reference to threat either directly or indirectly. In the intergroup approaches,

⁵⁹ This type of out-group is the most complex one to grasp. Even though there usually is an association with RWA in case of these groups, this is not always the case for SDO. SDO had a significant association with prejudice against feminists, protestors, “persons who criticize people in authority”. It did not, however, show a similar association with atheists, prostitutes, “persons who cause disagreement in our society”, and “persons who cause disunity in our society” (Ibid., p. 127).

⁶⁰ It has to be noted that the groups are not always as clear-cut across different studies. Some tend to shift from one category to another, for example. This may be due to a variety of reasons, ranging from cultural differences (recall the cultural contingency of arbitrary sets), and / or methodological issues.

initially two theories regarding threats have been considered to be competitive explanations: realistic threat theory and symbolic threat theory.

2.2.1. Realistic threat

In Sherif's *Realistic Conflict Theory* (RGCT, also referred to as realistic group conflict theory) (see Sherif, 1966, 1988; Sherif & Sherif, 1953) intergroup relations are considered to display characteristics that go beyond the characteristics of a single group. That is, group norms (*intragroup*) are forged on the basis of *intergroup* relations. Whilst good intergroup relations and shared goals attenuate intergroup bias, realistic conflict over resources (both material and tangible, or other resources such as power and status), can worsen intergroup relations and lead to both prejudice and bias motivated aggression. The theory has been most broadly studied in the last quarter of the past century, with the most famous example being *The Robbers Cave Experiment* (Sherif et al., 1954). A meta-analysis of the tests of this specific theory can be found with Jackson (Jackson, 1993)⁶¹, and a review discussing various types of threats can be found with Sears and Henry (Sears & Henry, 2003). The main argument of the theory is that people will display negative out-group behavior if they are involved in a real competition with that out-group. Experiments furthermore show that this dynamic is activated even when people are completely randomly assigned to different groups. Whilst the original emphasis of the theory was on real competition, other recent research has indicated that, next to actual competition or threats, the *perception* of threat suffices in order to achieve intergroup bias (Beaton & Tougas, 2001; R. Brown, Maras, Masser, Vivian, & Hewstone, 2001; Esses, Dovidio, Jackson, & Armstrong, 2001; McLaren, 2003; Zarate, Garcia, Garza, & Hitlan, 2004).

2.2.2. Symbolic threat

The competing explanation of RCT was *Symbolic Racism Theory* (SRT). As opposed to the realistic threats proposed by RCT, SRT focuses on *conflicting values* between different groups, or conflicting beliefs (e.g. Sears & Henry, 2003). Furthermore, it has been shown that the more conflicting the values or beliefs of the groups are, the more negative attitudes towards those groups will be (e.g. Dunbar, Saiz, Stela, & Saez, 2000) However, even though the two approaches may have been competitive in the past, nowadays they are viewed as complementary rather than mutually exclusive (e.g. McLaren, 2003; Riek, Mania, & Gaertner, 2006)

⁶¹ In this context it is noteworthy that Sherif was both a psychologist and a sociologist, and a fervent advocate of interdisciplinary research in order to get the full picture on intergroup hostility.

In a meta-analytic review, Riek, Mania and Gaertner (2006), state that the earlier and competitive explanations between realistic and symbolic threat/competition have evolved to more integrative theories and research pinpointing new types of threats. The most important integrative theory in this respect is *Integrated Threat Theory* by Stephan and Stephan (e.g. Stephan & Stephan, 1996; Stephan & Stephan, 2000). In this theory, next to symbolic and realistic threats corresponding to SRT and RCT respectively, two other types of threats are included: intergroup anxiety and negative stereotypes.

2.2.3. *Intergroup anxiety and negative stereotypes*

Intergroup anxiety refers to feelings of distress when interacting with members of out-groups, and is rooted in the expectation of negative outcomes when interacting with out-group members (originally formulated by Stephan & Stephan, 1989). It can be considered to be the emotional component of the aforementioned realistic and symbolic threats.⁶² In principle, it can be regarded as the result of negative interactions with out-groups or out-group members (R. Brown et al., 2001; Plant & Devine, 2003). Research also supports the consideration of intergroup anxiety as a predictor for out-group bias (Ho & Jackson, 2001; Voci & Hewstone, 2003). Thus, as opposed to the group-level realistic and symbolic threats, this particular source of threat is located on the individual level.

The fourth source of threat integrated in ITT, *negative stereotypes*⁶³, has been widely studied and its relations to prejudice have been established well. They are ideas about how certain groups are thought to behave, which may or may not reflect reality. They can furthermore affect the behavior of both the *stereotyper* as well as the *stereotyped*. Finally, some antecedents, or factors influencing the (perception of) intergroup threat, have been identified in ITT (Riek et al., 2006, p. 338). Thus, factors increasing the perception of negative intergroup threat include negative intergroup contact⁶⁴, high in-group identification, perceived intergroup conflict, and group status.

⁶² It would be difficult to say that they are the consequence of those threats. For, the direction of causality may be reciprocal, in the sense that indeed threats may evoke intergroup anxiety, but this intergroup anxiety in turn may also increase the perception of threats emanating from out-groups.

⁶³ Positive stereotypes do exist as well; for example the idea that Asians are good at math. Salience of such stereotype prior to a performance task (e.g. a math test) has a positive effect on the execution of that task.

⁶⁴ Conversely, the presence of positive forms of contact are deemed to reduce prejudice. This is, however, not the scope of the current research. For a meta-analytic review, the readers is kindly referred to (Davies, Tropp, Aron, Pettigrew, & Wright, 2011) specifically with regard to friendship, and to (Pettigrew & Tropp, 2006, 2008; Pettigrew, Tropp, Wagner, & Christ, 2011) for a more general account of the current state of affairs.

2.2.4. *Threats related to group esteem*

In addition to the aforementioned sources of threats discussed in ITT, two other additional sources of threats have been discerned by Riek et al. (Riek et al., 2006), which are derived from *Social Identity Theory*, originally formulated by Tajfel and Turner in the late 70's – 80's. The theory focuses explicitly on the relationship between self-esteem, as derived from belonging to a positively valued in-group, to derogation of out-groups. Three sources of social identity are discerned: self-conceptualization, group self-esteem, and commitment to the group.

A first type of threat in this respect are *group esteem threats* and relate to the claim that individuals identify themselves with positively valued in-groups. When the prestige of the in-group is threatened, prejudice may be the result (when leaving the group is not possible or desirable) (e.g. Leach, Spears, Branscombe, & Doosje, 2003; Ouwerkerk, de Gilder, & de Vries, 2000). A second and related threat is *distinctiveness threat*. There it is found that when distinctiveness between groups is low, high in-group identifiers are more likely to react to out-groups given the importance the in-group identity has for them (e.g. Jetten, Spears, & Manstead, 2001), and that levels of intergroup bias tend to be higher as intergroup distinctiveness is low, however only weakly so (based on a meta-analysis by Jetten, Spears, & Postmes, 2004).

2.2.5. *Integrated threat theory and the evolutionary framework*

Integrated threat theory and the other threat theories present a clear link with the evolutionary theoretic framework, insofar as they are conceptually quite akin to the context in which the “parochial altruism” discussed in the previous chapter could evolve. There, the context of intergroup competition / conflict were key elements. Similarly, be it in a more contemporary way, integrated threat theory also places a heavy thumb on competition and conflict over resources: out-groups perceived to pose threats to certain commodities, be it symbolic or realistic, are prone to being treated in a prejudiced way. Whilst the commodities at stake in the late Pleistocene supposedly were limited to resources needed in order to survive, with the emergence of ever more complex cultures they may have come to comprise more abstract commodities as well, such as in-group norms and customs.

An interesting point of convergence of both theories is the mention they make of emotional responses, such as intergroup anxiety. This fits especially well with the evolutionary framework, given that they are regarded as the triggering causes of prejudice. The one thing that is missing in the integrated threat approach is coalitional psychology, which is essential in the explanation of prejudice as it allows for the identification of out-groups on the basis of

culturally contingent markers of coalitions. The only point in which reference is made to this mechanism is through negative stereotypes, be it in a very indirect way. For, without a coalitional cognitive mechanism, it would be impossible to ascribe certain traits to an entire group of people rather than to individual people belonging to that group. All in all, the integrated threat approach seems quite compatible with the evolutionary point of view, as it depicts the very same context of conflict and competition, be it in a more contemporary way. This does not preclude, however, that the basic cognitive mechanism underlying it would not be the same as in the distant human past.

3. Conclusion

In this chapter, the most prominent explanations with regard to prejudice in (social) psychology have been discussed. All of them have proven to be compatible with the evolutionary framework, in the sense that they cluster around one or more core elements of the evolutionary theoretical framework. Both the dual process model and integrated threat theory perform well under the evolutionary framework. Whilst integrated threat theory, which focuses on a context of threat emanating from out-groups, is more or less a direct example of what parochial altruism and coalitional exploitation may look like today, RWA and SDO provide its attitudinal counterpart. That is, the focus of RWA and SDO is not so much on a real context of threat, but rather on individual differences on how certain out-groups are perceived. Further, the dual process model can be regarded as somewhat more fine-grained, as it allows to distinguish between RWA, where threat takes up a central place, and SDO, where competition takes up a central place. This distinction coincides to a great extent with the behavioral counterparts of parochial altruism: where threats are foremost related to genuine signaling of one's commitment to the in-group, competition can be linked to deceptive signaling of one's commitment to the in-group.

The fact that only psychological theories were discussed in this chapter does not imply that the evolutionary framework cannot be used to unify the multitude of criminological theories that are present today. In this sense, for example, social disorganization (Shaw & McKay, 1942) and social learning (Akers, 1998) theory, where a lot of stress goes to the direct interaction of one with his or her environment, can be perfectly integrated in the evolutionary framework, where transmission mechanism were discussed as an essential auxiliary mechanism once group living emerged. The same basically holds for another popular theory in criminology, i.e. strain theory (Agnew, 1992). This theory is very much compatible with the notions of conflict and

competition. Both may refer to the notion of removal of positively valued stimuli, whilst conflict equally so may refer to presenting people with negatively valued stimuli.

The evolutionary framework, however, can refine this theory into two distinct types of motivation underlying possible prejudice and bias motivated aggression, i.e. genuine signaling of one's commitment to the in-group and deceptively signaling one's commitment to the in-group. Whilst the evolutionary framework does provide a good point of integration for these three popular theories in criminology, the main advantage it has that it is able to provide a response to the ultimate question: it is able to show *why* people are susceptible to social learning and strain, something theories often fail to do. In other cases, the evolutionary framework contradicts criminological theory. Looking at another popular theory in criminology, social control theory (Hirschi 1969), the friction between this theory and the evolutionary theory becomes immediately clear: whereas social bonds are presumed to have a protective effect on crime, this is not necessarily the case in the evolutionary theory. For, in the current study, prejudice and bias motivated behaviors have been presented as forms of signaling one's membership to a given in-group. In this sense, they are regarded as the *result of social bonds*, rather than the result of a lack thereof. This does not mean that the entire theory is to be rejected in favor of evolutionary theory; rather, it means that the theory can be further refined on the basis thereof. Indeed, in many, if not most, cases of social bonds, they will tend to have a protective effect, especially in environments where non-discriminatory and non-violence norms and customs have flourished. Again, evolutionary theory can, in addition to describing and refining the mechanism, add the ultimate explanation of *why* people are susceptible to bonds in the first place.

I will leave the discussion on the unificatory potential of evolutionary theory for what it is now, however interesting it is from a theoretical point of view. In the next chapter, the rather general dynamics and premises discussed in this chapter will be translated into a model that can be put to the test. I will also derive every hypothesis to be tested in a piecemeal way, which should ensure a proper understanding of the rationale behind every hypothesis.

A full theoretical integration of the existing theories would lead us too far away from the goal initially set out at the onset of this study, i.e. uncovering the social roots of prejudice. In the next chapter, an empirically testable model of prejudice on the basis of evolutionary theory, will be developed. There, the concrete research hypotheses will be formulated and the selection

of the variables derived from the existing theories that will be used in the subsequent empirical study will be discussed in detail.

Chapter IV. Towards a testable model

In the previous chapter, we saw that the evolutionary theoretic framework that forms the spine of this study is theoretically compatible with existing scholarship on prejudice and bias motivated aggression, and that the evolutionary theoretic framework may very well perform the function of integrating those different theories by rooting them in one overarching root cause (or “ultimate cause”) of prejudice. This theoretic reasoning is all nice and fine, but eventually one will need to put these conjectures to the test, especially given the critical rationalist background of this study. In this chapter, a first step in that direction will be taken, as the model that will eventually be tested will be discussed here.

First, I will comment on the selection of the variables that are to be included in the model. As was shown in the previous chapter, an vast number of variables may be selected as each theory may encompass its own “usual suspects”. For the sake of clarity of the test, however, well-reasoned selection of variables is warranted. Specific attention should go to the breadth of a variable in this context, i.e. that it captures a kind of “conceptual average” of what is meant by the different theories. Second, the deducibility relationships between the variables will be discussed. There I will zoom in how one can test a “root cause” empirically, which may be not so straightforward as it seems, as the higher the level of universality, the less a statement is usable in practice (a strictly universal statement alone says nothing, which implicates that it cannot be tested, nor measured). In the third part, the model that will be tested, along with the hypotheses contained therein will be discussed. In the next chapter, the methodology which puts the empirical test of this model to practice is subject of discussion, followed by the results of the empirical study.

1. Selection of variables of the model

To choose between the myriad available variables in contemporary scholarship on prejudice and bias motivated aggression is not an easy task, and certainly ought not to be a random choice. For the reasons set out below, I have opted to take SDO and RWA as predictors of prejudice for the purpose of testing the theory.

1. They represent the most prominent research tradition on prejudice in contemporary scholarship. Notwithstanding the variety that exists in research on prejudice, the dual process model and its components are by far the most extensively discussed ones in literature. Over and

over again, the same basic findings have been corroborated and cross-culturally validated. It seems a wise choice, at least to me, to integrate the evolutionary framework with this prominent field of research. This allows for a far better estimation of the psychometric properties of the coalitional thinking mechanism and its operation in comparison to other predictors which do not have the same extensive background in prejudice studies. Thus, this approach merits preference given its *high degree of corroboration*. Given that new concepts are introduced in the current study, it is advisable to do so in the presence of concepts with high degrees of corroboration as they provide more solid grounds for drawing conclusions later.

2. *They are the most explicitly connected to the evolutionary framework.* Even though all of the theories discussed share a certain overlap with the evolutionary theoretic approach (or can at least be regarded as compatible therewith), RWA and SDO provide the most straightforward conceptual linkages with the evolutionary framework. For instance, they are seemingly direct contemporary “translations” of the late Pleistocene conditions our ancestors faced, i.e. competitive and with scarce resources. Kessler and Cohrs (2008) even related RWA directly to the evolution of human sociality, which makes it an excellent candidate to serve as a variable, as it allows to empirically test this conjecture of theirs.

3. *They can be regarded as umbrella concepts for the other concepts discussed.* In this sense, RWA and SDO combine the effects of, say, social learning, into two coherent ideological attitudes. They are in principle the result of various processes, such as strain, social learning, influence of peers, relative deprivation, and the like. More precisely, the theoretical concepts that may exert an influence on RWA primarily are relative deprivation, realistic threats, and symbolic threats, whereas the concepts that may exert an influence primarily on SDO are group-esteem threats, relative gratification and distinctiveness threats. Still other concepts, such as negative stereotypes, can be regarded as being associated with both SDO (i.e. legitimizing myths) and RWA (i.e. neutralization of anti-discriminatory norms).

4. *Contextual theories are more difficult to test. Even morally impossible often.* Theories aiming at testing realistic conflict between various groups may be difficult to realize in the specific context of prejudice against a certain group present in society. Whilst it is possible to design empirical studies to investigate certain inter-group dynamics, as did Sherif in the famous *Robber's Cave* experiment, such a strategy might be less desirable from an ethical point of view when one deals with real groups in society. That is, it would be unethical to trigger conflicts between people belonging to different groups in society, and it would be equally unethical and

undesirable to ascribe certain characteristics to such real-life groups in society. For this reason, it is more appropriate to resort to opinions and attitudes through survey research. Especially given that RWA and SDO represent the attitudinal counterpart of the context, this ought not to pose a problem.

5. *There is a huge gap between subjective perception and the objective reality.* A lot of the foregoing relates to the fundamental distinction that exists between objective reality (however measured) and individual perception thereof. As indicated in the introductory part on philosophy of science, objective reality need not coincide with the subjective perception thereof. As it is primarily subjective perceptions of objective problem situations that motivate people to act, the most appropriate way seems to focus on these subjective perceptions or beliefs in order to test the theory. Thus, this basic psychological phenomenon constitutes one more reason not to focus on the objective context, but on the individual representation thereof. SDO and RWA qualify to do so, given that they are ideological attitudes based on individual beliefs about to world.

2. Deducibility relationships

As was discussed in the philosophical background of the study, explanation is regarded in terms of unification, and unification refers to connecting different instances on the basis of a shared theoretical statement of a higher degree of universality. As a strictly universal statement is not testable, one needs to resort to specific instances in order to test a theory. How does this work in practice?

In this sense, the notion of a *proper subclass* of a universal statement is of interest. Each universal statement has an in principle unlimited number of subclasses that can be derived from it, on the basis of lesser degrees of universality and/or precision. Stating that two distinct phenomena can be unified under a general universal statement thus means that two proper subclasses of that universal statement are brought in connection with each other (see, Popper, 2002 [1959], pp. 100-103). This connection is fully dependent on the initial conditions which shapes the instantiation of the universal statement. That is, the universal statement may present itself empirically in different forms depending on the specific conditions it instantiates under.

For the case of prejudice, we have already seen that the conditions that shape pro-sociality are a perception of conflict and/or competition. Then, and only then, prejudice towards threatening or competing out-groups (because prejudice against the ill and disabled is rooted in another cognitive module) will be the outcome of human pro-sociality. In the previous section, I have

shown that RWA and SDO can perform this function very well. Therefore, SDO and RWA will serve as the initial conditions that shape human pro-sociality in the specific form of prejudice.

In order to test its connection with the universal statement on pro-sociality, the only option is to link prejudice with another instance of pro-sociality with RWA and SDO as mediators, as they are presumed to be the initial conditions on which prejudice as a form of pro-sociality depends. In this study, it was chosen to create a scale with general instances of signaling pro-sociality outside of the scope of prejudice (see *infra*: methodology). This way, two different instances of the same universal statement are expected to be associated with one another, through mediation by the initial conditions that would give rise to the specific instance⁶⁵.

The theoretical model that will eventually be tested is presented in Figure 1. The specific hypotheses that are to be tested with this model, as well as their rationale, will be discussed in the next section.

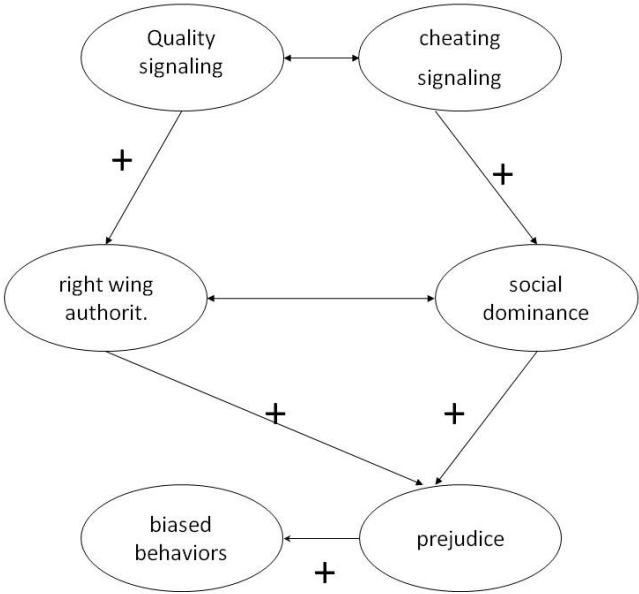


Figure 1: theoretical model to be tested in the study.

⁶⁵ In this sense, I would also challenge the often heard terminology of “proximate” and “distal” causes. One could say that pro-sociality is the distal cause, whilst the proximal causes are RWA and SDO in the specific case of this study. However, neither one of the causes is “distal”: pro-sociality is regarded as a general human tendency, which can take up a specific shape according to the context (initial conditions) it is present in. This does not, however, make it “distant”, as it is a tendency that is always present in humans (Weber, 2013, personal communication).

3. Hypotheses and their rationale

It is but a good practice to clearly state the hypotheses that underlie the model to be tested, and to clearly indicate how they relate to the theory and what their falsification potential for the theory is. This will be done below.

Hypothesis 1: there is a significant positive indirect effect of genuine signaling of sociality on bias motivated behaviors, which runs through RWA and prejudice.

This hypothesis is, in principle, the core hypothesis of the study. It is the most contra-intuitive one as it points toward a link between genuine signaling of pro-sociality and bias motivated behaviors, which is not a common way of thinking of prejudice. The hypothesis explicitly states that the effect of genuine signaling on bias motivated behaviors is indirect, given that pro-social people will usually tend to uphold group norms, which include norms of tolerance and non-discrimination as well as non-violence in our contemporary society. Therefore, the perception of threatening or dangerous out-groups as exemplified in the RWA ideology, is a *necessary condition* for this link to take hold, and a neutralizing mechanism is needed to justify the violence. If such a perception is not present, people will presumably not score high on prejudice, given the prevalence of non-discriminatory norms.

This particular hypothesis will be regarded as falsified, when there is no indirect effect of genuine signaling of pro-sociality on bias motivated behaviors, or when this indirect effect is negative rather than positive. The former can be called “soft” falsification so to speak, as it merely indicates the absence of an a priori specified relationship. The latter can be regarded as “strong” falsification, as it indicates the existence of a relationship that directly contradicts the hypothesis deduced from the theory.

The hypothesis can be refined into two sub-hypotheses, which form the weaker form of the overall hypothesis. The original hypothesis contains indirect effects, and ideally mediated paths. Even though these will be tested, two sub-hypotheses that do not meet the requirements of mediation or indirect effects can be derived from it:

- *Hypothesis 1a: there is a significant, positive direct effect of genuine signaling of pro-sociality on RWA.*
- *Hypothesis 1b: there is a significant, positive direct effect of RWA on prejudice.*

These sub-hypotheses simply state a sequence of direct effects. With regard to the theory to be tested, hypothesis 1a simply presumes a direct and positive effect of genuine signaling of pro-sociality RWA, consistent with the conjecture made by Cohrs and Kessler (2008).

Hypothesis 2: there is no significant direct effect of genuine signaling of pro-sociality on prejudice.

Hypothesis 2 explicates the necessary character of the mediation by RWA in the relationship between genuine signaling of pro-sociality and prejudice. This hypothesis should be explicitly tested, as it is a strong potential falsifier for the theory discussed. For, if a direct relationship exists between genuine signaling of pro-sociality and prejudice, the conditionality of this particular instance of pro-sociality can be questioned. It is at the core of the study that pro-sociality can result in a wide variety of behaviors, many of which are morally highly valued, depending on the initial conditions in which it instantiates. For example, if the initial conditions are working with in-group members on a common goal, cooperation and even altruism can be expected to be the result of human pro-sociality. It is only when threat or danger emanating from out-groups is perceived, that prejudice may be the instance of pro-sociality.

This hypothesis can be considered falsified when a direct positive effect of genuine signaling of pro-sociality on prejudice is found. This is a form of strong falsification, as this finding would contradict the theory directly; it would knock down without any compromise the strong mediation hypothesis which is at the very heart of this study.

Hypothesis 3: there is no direct effect of genuine signaling of pro-sociality on bias motivated behaviors.

The 3^d hypothesis is a result of the same logic as hypothesis 2. It refers to the fact that people that genuinely care for the in-group and its norms will usually not be very prone to bias motivated aggression. On the contrary, given that non-discrimination and non-violence have become very salient norms in contemporary Western society (Pinker, 2011; Singer, 1981), it can be expected that genuine pro-sociality is protective of bias motivated behaviors in the absence of mediation by RWA and prejudice. This hypothesis can be considered falsified if a positive effect exists between genuine signaling and pro-sociality.

Hypothesis 4: there is a positive indirect effect of deceptive signaling of pro-sociality on bias motivated behaviors, which runs through SDO and prejudice.

This hypothesis reflects the same idea as does hypothesis 1, be it in the case of deceptive signaling of pro-sociality. As was elaborated in the previous chapter, genuine pro-sociality is but one form of pro-sociality. Defecting strategies co-evolved with pro-sociality, as it is important for defectors not to be exposed as such, in order to avoid punishment, and – in many cases – to reach their own goals of high status in the group. Therefore, a mediation hypothesis is presented as well: in the context of conflict or competition between groups, defectors have access to a forum on which they can signal their status and willingness to invest in the in-group, and by doing so, increase their status and reputation.

This hypothesis will be considered falsified if no or a negative indirect effect of deceptive signaling on bias motivated behaviors emerge. The former can be regarded as soft falsification, whereas the latter can be regarded as strong falsification as it contradicts the theory directly.

The hypothesis can be refined into two sub-hypotheses, which form the weaker form of the overall hypothesis. The original hypothesis contains indirect effects, and ideally mediated paths. Even though these will be tested, two sub-hypotheses that do not meet the requirements of mediation or indirect effects can be derived from it:

- *Hypothesis 1a: there is a significant, positive direct effect of deceptive signaling on SDO.*
- *Hypothesis 1b: there is a significant, positive direct effect of SDO on prejudice.*

These sub-hypotheses simply state a sequence of direct effects. With regard to the theory to be tested, hypothesis 1a simply presumes a direct and positive effect of deceptive signaling of pro-sociality on SDO, without indirectly influencing prejudice or bias motivated behaviors.

Hypothesis 5: the mediation effect is weaker in cases of deceptive signaling of pro-sociality compared to genuine signaling of pro-sociality.

Hypothesis 5 is inspired by the generally more selfish orientation of people that deceptively signal their commitment to the in-group, and intends to highlight the different psychometric

properties between both forms of signaling. A weaker mediation effect is expected for mainly two reasons. First, the more selfish orientation of people that deceptively signal their commitment to the in-group entails their exploitation of others to their own benefit. Second, in a context of intergroup competition, their inclination to act against out-group members is not restrained by compliance to other norms as is the case for people who genuinely signal their commitment to the in-group. The latter will need to neutralize other, often anti-discriminatory, norms before acting against out-group members. As this neutralization is not required for deceptive signalers, I expect the effect to be less strongly or entirely not mediated by an ideological attitude. Hypothesis 5 can be refined into two distinct sub-hypotheses.

Hypothesis 5a: there is a positive direct effect of deceptive signaling of pro-sociality on prejudice.

The strong version of hypothesis 5 posits a direct relationship between deceptive signaling of pro-sociality on prejudice. This reasoning is basically the same as in case of hypothesis 5: given the more selfish orientation of people that deceptively signal their commitment to the in-group, it can be hypothesized that they are by default more prone to being prejudiced towards out-groups than are people who genuinely signal their commitment to the in-group. The reason is that they are self-interested, and are thus more likely to safeguard the status and resources of their in in-group against outsiders without needing an excuse to do so.

Hypothesis 5b: there is a positive direct effect of deceptive signaling of pro-sociality on bias motivated aggression.

Hypothesis 5b posits a similar direct effect of deceptive pro-social signaling on bias motivated aggression. This is a rather bold hypothesis, as it assumes that prejudice is not a necessary condition for bias motivated aggression to occur in cases of deceptive signaling of pro-sociality. The reasoning behind this hypothesis is that for people with the tendency to defect, a more selfish tendency, the status and power of the in-group need to be preserved from outsiders notwithstanding the salient pro-social norms in society. Especially in cases where this can be combined with a deceptive signal of commitment to the in-group in the sense of punishment of defectors (so perceived by others in the group), they are presumed to be prone to bias motivated behaviors.

Hypothesis 6: there is no direct effect of genuine signaling of pro-sociality on SDO.

Hypothesis 6 serves the purpose of highlighting and additionally testing the different psychometric properties of both forms of signaling. No or a negative effect is expected between genuine signaling of pro-sociality and SDO, given the different nature of genuinely pro-social people compared to deceptively pro-social people. One would expect a clear and logical relationship with RWA in case of the former, and with SDO in case of the latter. As this hypothesis is not related to the strict mediation model which is the core of the study, it can be regarded as an additional test to push the limits of the study.

Hypothesis 7: there is no direct effect of deceptive signaling of pro-sociality on RWA.

The reasoning behind hypothesis 7 is basically the same as the reasoning for hypothesis 6. It regards an extra hypothesis to check the differences in psychometric properties of both forms of signaling, as well as the limits of the model when it comes to cross-national comparisons. It is an additional hypothesis, which is not at the heart of the study (i.e. the strict mediation model), but may enable further insight into the dynamics at play.

Hypothesis 8: There is no direct positive effect of RWA on bias motivated behaviors.

This hypothesis focuses on some aspects of RWA that have been left largely unexplored up to today, i.e. the potential positive effects of RWA. For, even though RWA has usually been brought into connection with morally rejected forms of behavior such as prejudice, evolutionary theory suggests this need not be the case. Whether or not it results in morally condemned forms of behavior really depends on the norms that are at play. In a situation where one might believe that the world is a dangerous and threatening place, but where one does not perceive any particular group to attribute such threats or dangers to, it seems logical that people will adhere to – already quite salient – norms of non-violence (Pinker, 2011; Singer, 1981). Adherence to such norms would, in the end, keep the world a safe and unthreatening place to the greatest extent possible (at least so perceived).

For this reason, I do not expect RWA in itself to have a positive effect on bias motivated behaviors. If the above reasoning would true, the only relationship to be expected between RWA and bias motivated behaviors, is a negative one rather than a positive one. This hypothesis can be considered a bold one, putting the theory to quite a severe test.

Hypothesis 9: there is no direct effect of SDO on bias motivated behaviors.

A different logic underlies hypothesis 9, relating to the necessity of mediation. Whilst the sensitivity to norms makes mediation by RWA a necessary condition, this need not be the case for SDO. The theory predicts that people higher in SDO deceptively signal their mimicked commitment to the in-group on any occasion they get, for the sole purpose of acquiring better reputation and power in the group. This also means that the necessity of mediation by SDO can be questioned: if they seize every moment to signal their commitment to the in-group, then what would be there to be neutralized by the ideology of SDO? One could say: ok, but at least they need to perceive competition, and this is the mediation. The key in understanding the dynamic lies in the contribution of evolutionary theory thereto: *they* don't necessarily need to perceive competition, it suffices if *someone else* perceives competition and attributes this to a specific out-group. If someone else perceives competition, this provides them with an opportunity to deceptively signal their commitment to the in-group as well. For this reason, I have put the hypothesis in its current form. It can be considered falsified if there is a direct effect between SDO and prejudice.

Hypothesis 10: there is direct, positive effect of prejudice on bias motivated behaviors.

This hypothesis is a logical consequence of the conjunction of hypotheses 8 and 9, which suggest that the effect of SDO and RWA on bias motivated behaviors runs through prejudice. In fact, it was theorized that the ideological attitudes in themselves are insufficient to lead to bias motivated behaviors, for which a neutralizing and targeting mechanism is needed, which is operationalized as prejudice.

This hypothesis can be read in conjunction with hypotheses 1 and 4, insofar as prejudice is an integral part of the indirect path through which deceptive and genuine signaling are presumed to exert an effect on bias motivated behaviors.

Hypothesis 11: the direction of the results is the same for men and women.

This is an important hypothesis, and is at the heart of the study. As the mechanism described so far is regarded as the result of the evolution of human sociality, which was in its own right able to deal with, *inter alia*, the problems of competition, hunting large game, etc., it is expected to be relatively gender-insensitive. I did say relatively, given that it is utterly impossible to strictly isolate this particular mechanism in the myriad mechanisms that are at play when people actually behave, but still, a valid claim would be that the direction of the results ought to be the same for men and women.

The rationale for this hypothesis is the domain specificity of the mechanism described in the previous chapters. Sex differences in behavior (e.g. Pinker, 2002, 2011) usually are the result of differing mating strategies and differences in parental investment between men and women, a subject matter which is, in principle, unrelated to the domain for which sociality emerged in the modular approach. For this reason, differences in intensity of the results may still proliferate, as behaviors such as violence and dominance actually are co-determined by gender, but they may absolutely not be of the nature that the direction of the results are different for men and women.

Hypothesis 12: the model holds in different national settings.

The final hypothesis is also at the heart of the study. As the mechanism described in the previous chapters is assumed to be a result of evolution, it is likewise assumed that all of mankind is equipped with this particular mechanism, to a greater or lesser extent. For, the evolution of the particular behavioral tendencies discussed in the previous chapters occurred tens of thousands of years ago, presumably in the Late Pleistocene, which is a sufficient amount of time to have been selected for. Therefore, it can be expected that the mechanism is operational in all of mankind of today.

It should be borne in mind, however, that the mode of testing in this study does not use strictly objective criteria, such as particular genes or hormones. Rather, it will concern a survey study, in which subjective perceptions will be queried. The logical consequence of this is that there is a possibility of slight variation between countries, due to cultural variance as a result of horizontal transmission.

4. Conclusion: two stages to bias motivated aggression

A hypothesis-wise dissection of the model as presented in this chapter, basically brings all the pieces of the puzzle together, as it provides detailed insights in how certain relationships are predicted by the theory, and, as a consequence, sheds more light on potential tests of the model. From the point of view of theory, the hypothesis-wise exposition presented in this chapter fills up the gaps in current theorizing on bias motivated aggression. That is, many of the theories discussed such as RWA and SDO usually have prejudice as a dependent variable. This is not the case in the model presented in this study, however. In the present study, bias motivated aggression is the dependent variable, which implies that the concept of prejudice is in need of further discussion, in order to clarify its role among the other intervening variables, a discussion which has been relatively absent in current scholarship on prejudice.

The model that was depicted in this chapter, basically is a two staged dual process model (in the strict theoretical form). I will not enter the discussion on the dual process character of the model again, as this has already been extensively done in the previous chapters. The two stages, however, are in need of further explanation. Starting from the two forms of signaling pro-sociality, deceptively and genuinely, the first stage consists of the mediation of both ideological attitudes RWA and SDO. The second stage is common for the two processes in the model, being prejudice. The end result of these two mediating variables is bias motivated behaviors (or, at least an increase of the propensity thereto) (see Heylen & Pauwels, 2015 for the two staged model, reproduced below).

A first step in moving from the two pro-social tendencies to bias motivated aggression consists of the perception of *a dangerous and/or competitive world*, as suggested by the coalitional computation hypothesis. Whereas such a danger and competition was rather straightforward in our ancestral past, humans are now equipped with a complex brain able to deal with abstract information. This cognitive build-up allows for, inter alia, intricate ideologies to take the place of reality. In the social psychological study of prejudice, scholarship has converged on two ideological attitudes as the main predictors of prejudice, i.e. RWA and SDO.

In a second step, the danger needs to be attributed to a specific out-group in a way that legitimizes aggression to that out-group. Consistent with coalitional psychology, attribution serves the purpose of distinguishing between allied out-groups and hostile or competitive out-groups. Second, legitimization of aggression is a necessary step, because as people evolved over time, cooperation and non-violence have more than ever become the norm (Pinker, 2011;

Sober & Wilson, 1998). This phenomenon is elaborately discussed by Peter Singer in his *The Expanding Circle* (Singer, 1981) and has resulted in a steady decline in violence throughout history. As people adhere to norms (to differing degrees), they also adhere to norms of nonviolence and equality. This is especially the case for people high in RWA, as it reflects a need for group cohesion, but equally so for people high in SDO. For the latter, protection of reputation is of great importance, and aggression towards out-groups perceived as spiteful by the in-group will result in a bad reputation. Therefore, neutralization of these norms – especially by others in the in-group, as they will eventually decide upon the status of them – is needed.

This neutralization occurs by depicting the out-group as either a threat to in-group norms and cohesion, or as cheaters reaping the benefits of the in-group, consistent with the theoretical framework above. It is, therefore, no surprise that most prejudice scales include items such as “immigrants have jobs that US citizens should have” (free-riding), or “the values of immigrants are irreconcilable with those of US citizens” (threat to group norms). Additional forms of justification, may consist of dehumanization (e.g. Haslam, 2006) of the out-group, or by triggering emotions such as disgust or repulsion (e.g. Navarrete & Fessler, 2006). The targeting and neutralization process is adequately captured by the concept prejudice, given that it reflects socially learned beliefs (e.g. Rhodes, Leslie, & Tworek, 2012) in which out-group members are associated with violations of norms, cheating, and often dehumanization.

Now how does this particular model relate to the scientific philosophical framework this study is embedded in? As was mentioned earlier, it is quite impossible to test a strictly universal statement empirically, this can only be done by linking two distinct instances thereof with each other, using the proper mediators. These mediators actually represent the initial conditions in which the target instance (outcome variable) is expected to manifest itself in. thus, SDO and RWA are the initial conditions that make the universal statement “when a perception of threat or competition is present, human pro-sociality will turn parochial increases” instantiate in the form of bias motivated behaviors. That is, they represent the culturally contingent content of what a “perception of threat and/or competition” looks like in Western countries, using the theories of RWA and SDO as auxiliary hypotheses. The DN-form the argument thus looks as follows:

U1: If a perception of threat or competition is present, human sociality will turn parochial

IC1: A perception of threat or competition is present in group X (*aux. 1: SDO represents competition, RWA represents perception of threat*)

IC2: Group X has pro-social tendencies (*aux. 2: as do they all, be it in two forms*)

C: Sociality will turn parochial (*aux. 3: this “turn” is represented by mediated relationships in a SEM model*)

Where Ux refers to the first universal statement, ICx to the initial conditions, and C to the conclusion. Between brackets, the assumptions derived from the initial conditions are made explicit. In this context, auxiliary hypothesis one is derived from both SDO and RWA theory, due to their compatibility with the evolutionary framework. Auxiliary hypothesis 2 refers to the evolutionary framework developed in the theoretical parts of this study, and rests on the assumption that a tendency so important in our ancestral past, has to be present in all individuals today, to a greater or lesser extent. I have also included a third auxiliary hypothesis, referring to statistical theory. This is not unimportant, as it is precisely on the basis of statistical theory that all of the hypotheses will be considered corroborated or falsified. If the approach to this study would have been constructivist, an entirely different picture would have emerged, with an enormous impact on the results themselves as well as their interpretation.

A hugely important word in the second initial condition is “group X”. As elaborated on in the section on philosophy of science, the above deduction is *only applicable to social phenomena, and not to individual persons*. As such, the study can only deal with a phenomenon on a population level, and certainly not with individual cases of hate crime, for which such a great variety of additional variables and constraints must be introduced into the equation in order to give a realistic picture, that this would, up to today, be an utterly impossible task. Now, one might be tempted to see this as a huge difference with the natural sciences (as social scientists often seem to compulsively want these differences to exist), but this is not true in my opinion. Just like an apple falling from a tree represents only one instance of gravity amongst many others (such as a banana falling from a tree, me diving into a swimming pool, someone rope skipping, and so on), so too represent prejudice and bias motivated aggression two instances of

human sociality, next to a wide variety of others (such as going to church, giving to charity, and so on).

When it comes to predicting individual behavior, one must bear in mind that one individual has a great many different tendencies in his or her biological makeup. These do not work in isolation from each other, but mutually influence, reinforce or restraint, other tendencies. Let us compare this to the apple again. Apart from being less complicated than a human, one could say that, from the point of view of gravity, the apple is a static thing, and that gravity there can in fact be studied in isolation of other processes, just as is the case with humans by the way (as there is no way we can defy gravity). Identical to humans, however, apples are susceptible to a great variety of different processes as well, as they are living things. Whilst one might, for example, say that an apple decays after you keep it a certain time in your kitchen, the very exact moment of decay is impossible to predict, as every individual apple will decay in a different way. Just like humans do, by the way.

To close this discussion on the similarity with the natural sciences, note that this notation does not differ much from the notation used in the natural sciences:

U1: If the weight put on a string exceeds its capacity, it will break

IC1: The weight put on the string exceeds its capacity

C: The thread will break

I hope to have convinced the reader that the natural sciences do not differ that much from the social sciences. Of course, as the headquote of this chapter suggest, the proof of the pudding is in the eating. Now we have deduced a theoretical model that is ready for empirical testing, all variables and a research strategy are in order. This will be done in the next chapter, which will discuss the methodology used for the empirical test of the model.

Chapter V. Methodology: *truncus communis*

It is easy to obtain confirmations, or verifications, for nearly every theory—if we look for confirmations. Confirmations should count only if they are the result of risky predictions. A theory which is not refutable by any conceivable event is non-scientific. Irrefutability is not a virtue of a theory (as people often think) but a vice. Every genuine test of a theory is an attempt to falsify it, or refute it.

Karl Raimund Popper (1963, p. 36)

In this chapter, some general reflections on the methodology of the study will be discussed. The empirical study in principle consists of two parts, and the reflections presented in this chapter apply to both of the studies conducted in order to test the hypotheses set out in the previous chapter. As the quote to this chapter suggests, the methodology and research strategy pursued in this study is conceived of as an attempt to falsify or refute the theory. First, a confirmation of the hypothesis can be considered to be a corroborating instance if the prediction tested is a *risky* prediction. I will leave it to the appreciation of the reader to estimate whether or not the predictions made in this research are “risky”, but will share my own experience and view on the matter as well. Initially, the prediction that “*prejudice is an instance of pro-sociality*” or even “*bias motivated aggression is an instance of pro-sociality*” struck me with a great sense of disbelief. It seemed to go against all conceivable background knowledge and intuition that I had. It was only after making the deduction that lead to this conclusion over and over again, that I came to accept the hypothesis, and decided to test it in this PhD research. This, together with the fact that there is no single empirical research on this matter available, make the hypotheses presented in the previous chapter “risky” predictions in my opinion. Even though it is impossible to know what Popper meant exactly by the word “risky”, it seems at least plausible that this is the kind of “risky” he would have in mind.

But, apart from this, falsification remains the strongest test of any theory. Therefore, I will try to show in this common part of the methodology which attempts will be made to refute the theory. Even though one can think of a great many ways to do so in a very creative way, it must be borne in mind that comparability of a given project to the existing body of literature is of great value in any kind of evaluation thereof. Without this comparability, evaluation of the theory in terms of precision and levels of universality compared to competing theories would,

of course, be impossible. This is, however, of the utmost importance in any scientific enterprise as it gives an idea of the “measure of progress” a certain direction in research may or may not bring about.⁶⁶ For this reason, I have tried to balance attempts at falsification with this inherent requirement of comparability. In short, falsification will be pursued in three ways: competing hypotheses that contradict the theory, an international comparison, and a group comparison between men and women. All of these, as well as their place within the general design, are outlined below.

1. General design: multi-site survey research

The general design of the two studies is quantitative in nature. First, the studies are designed to empirically assess a *phenomenon on the population level*, not a singular act (or “instance” of a certain phenomenon) that will be studied in depth (e.g. the specific case of Anders Breivik). As has been argued elsewhere (Heylen & Weber, 2013), both approaches follow a different, yet complementary, logic with different notions of causality that accompany them. In the studies at hand *difference making probability* was explicitly chosen, given the aim of explaining a social phenomenon. In this sense, the study will provide the reader with a snapshot of the *status questionis* with regard to the hypotheses. The design does not allow for any conclusions with regard to stability over time of these results, for which qualitative studies (Heylen & Weber, 2013) or longitudinal designs are better suited from a philosophy of science point of view.

More precisely, a *cross-sectional survey research* was chosen. Notwithstanding certain undeniable weaknesses of this design, it was opted for on both practical and substantial grounds. Given the limited timeframe and resources within which a PhD-research has to be realized, we gave preference to cross-cultural testing over a longitudinal or experimental design (see *infra*).

An additional consideration in the choice of the design is the comparability of the current research with the existing body of social psychological research with regard to prejudice. The goal of the study is to unveil “causes of the causes”. That is, the aim is to unveil more fundamental mechanisms that animate prejudice, which are deduced from a coherent theoretical framework. This way, the longstanding research tradition in social psychology will be integrated with evolutionary thinking on the matter. As the main research strategy adopted in that social psychological literature is cross-sectional survey research, it seems but logical that a

⁶⁶ Of course, no single project like this one will in itself procure “progress of science”. It only gives a direction in which this progress may be sought. In reality – in the Kuhnian sense of the growth of science – it will only signify progress if it becomes part of “normal science” in that particular domain.

similar design, allowing for the usage of the very same research tools such as measurement scales, is adopted to realize the current project⁶⁷. Otherwise, it would be utterly difficult to compare the results directly. A consequence of this is that the goal of theoretical integration will be jeopardized in this way. This way, the project can contribute to the rich field of study occupied with prejudice and bias motivated aggression.

On a final note, it can be argued that this design indirectly also allows for an evaluation of the utility of evolutionary theory and the hypotheses derived thereof in the wider and general context of social scientific research. A common criticism is that evolutionary theory is merely “telling tales” and retrospective explanation of certain phenomena (Rose, personal communication, 2014). What is usually meant by this is that one creates a theory that fits the data in hindsight: an overtly inductive enterprise. This can be considered to be a misinterpretation, given the fact that evolutionary premises are situated on a higher level of universality and allow for a strict deductive approach.

2. Sampling

A pressing question that poses itself in social scientific research is which sample will be used when conducting the empirical investigation. Many times, the question centers around the issue of representativeness of the sample used. More specifically, a debate in sampling literature is whether the usage of student samples (often on practical considerations) is defensible. The main concern is that these samples are not representative, and are thus of a lesser quality and do not allow for generalization afterwards. The bias that such samples give rise to is probably best summarized by Henrich et al., giving it the acronym WEIRD: students generally are **Western, Educated, Industrialized, Rich and Democratic** (Henrich, Heine, & Norenzayan, 2010). The same authors illustrate the differences between student populations and general populations with regard to scores on visual perception, fairness, cooperation, spatial reasoning, categorization and inferential induction.

As the differences noted by those authors include differences with regard to fairness norms, cooperation, and categorization, the question as to which sample to use becomes pressing for the project at hand as well. As discussed elaborately in the literature review, these are the elementary building blocks in the evolution of prejudice. The differences that Henrich et al. refer to, relate to a comparison between Western student samples and, *inter alia*, small scale

⁶⁷ The panel studies that do exist furthermore indicate the stability over time with regards to the main predictors of prejudice (e.g. Zick et al., 2008).

societies. With regard to cooperation, fairness and categorization, differences between both reference groups may arise on the basis of culturally contingent norms.

From the point of view of the theoretic and meta-theoretic underpinnings of the current study, this should not be a fundamental obstacle. First, gene-culture co-evolution is explicitly acknowledged, and instantiation of the human universal is conceived of as bound by spatiotemporally contingent initial conditions of which culturally contingent norms are an integral part. These are conceived of as a set of typically Western instances of threat and competition, which may not be necessarily present in other societies where threats may relate to different commodities. Consistent with the deductive model set out in the literature review, this implies that for different societies, different initial conditions will have to be chosen.

Rather than the specific condition that operates in a given context (which is in fact a specific operationalization of a more abstract concept), however, the important point is that it regards commodities that may provide to be a source of competition or conflict in a given society (the “universal” condition for prejudice to arise). In fact, this kind of cultural variation is implied by evolutionary theory itself, *inter alia* through transmission mechanisms and the various equilibria it gives rise to. Even though the operationalization might differ, there are good reasons to assume that the same mechanism of coalitional computation – disregarding the operationalization of conflict and competition in a specific society – applies to other commodities as well, in light of the available evidence (see chapter on evolutionary theory). For the sake of clarity, however, the reader is advised to bear in mind that the results of the study can only be interpreted in light of this particular operationalization, thus applying only to Western countries and prejudice in the West.

Still, problems may arise within this specific part of humanity where the concrete operationalization of the initial conditions in terms of employment, material commodities and the like, applies. For, within a given population, the E(ducated), R(ich), and D(emocratic) of the WEIRD people may still cause differences in research results. It should be stressed that the differences observed in the social psychological measurement scales used in this research only bear on the strength of statistical relationships, not on the direction thereof (e.g. Sibley & Duckitt, 2008; Van Hiel, Cornelis, & Roets, 2007). Therefore, a bias due to the circumstances of the respondent group, which, on average, is richer, more educated and democratic than the population mean, can be expected. This does not preclude the possibility to test the theoretical model, as the factors included therein behave in the same way in adult versus student samples.

In order to increase variation in the sample, attempts were made to reach a diverse range of students, ranging from bio-engineers to law students. More specific details are provided in the chapter on the results of the studies conducted.

Finally, financial and time constraints force scholars to prioritize certain features in a design. Even though an ideal design would be a full experimental, cross-cultural, mixed method design, this has proven impossible to realize, however unfortunate this is. In the current study, cross-national validation of the results was prioritized over a mix between student and adult samples, given the value thereof in evolutionary theoretic research).

3. Online distribution of questionnaire

In survey research, another question is the “pencil-versus-internet” question. Previous debates have pointed out several biases on the basis of the mode of administration of surveys. Classic concerns with online surveys are the fact that they may not reach part of the target population, lower response rates, technology skills of the respondent, and concerns about anonymity. On the other hand, web-based surveys are associated with a lower cost, more design options and instantaneous data collection / entry (e.g. Bethlehem & Biffignandi, 2011; Manfreda & Vehovar, 2008).

For the purpose of this project, an online survey was opted for. First, because the target population are students. As universities are increasingly relying on online media and email to communicate with students, it can be considered to be an efficient way to reach a large number of students. Second, it can be safely assumed that, in this day and age, students possess the necessary technological skills to complete an online survey (Livingston & et al., 2013). This way, the often heard fear that the online distribution of a questionnaire will fail to reach a part of the target population (Potter & Chatwin, 2011) is less applicable to the current study. Furthermore, this fear is more present in cases where specific target groups are sought for, which is not the case in the present study.

In order to combat the low response rates, the range of dissemination was considerably extended. Instead of sending the survey to one’s own class or faculty, we invited several universities to send the survey to different departments, in order to guarantee a sufficiently large sample. In the Spanish study, a lot of the preparatory work of the study needed to happen from a distance and through telephone and email communication. As different sites in Spain were prepared to take part in the study, it was impossible to be at all these sites in person at the time of preparation of the study and actual data collection. In order to secure a sufficiently large

sample, an open university was included (the Open University of Catalonia), as this may significantly increase the response rates as an open university relies much more on digital communication than a regular university does. This has proven to be a good strategy, as this particular university was able to generate the vast majority of responses in the Spanish study.

In order to make sure the anonymity of the respondents is secured, the online survey program (Limesurvey) was set to not save the IP addresses in the dataset. The program itself did keep track of the IP address, for the purpose of blocking access to the survey once it had been filled out on a computer linked to that IP address (Miller et al., 2007).

Finally, some considerable positive aspects of an online survey are worth mentioning (see also Kays, Keith & Brougal, 2013; Tuten, 2010). As paper-and-pen surveys require the researcher to manually enter data in the statistical software, there is a considerable risk of making mistakes when doing so. An online survey has the great advantage that data entry occurs automatically by the survey software, thus leaving no margin for mistakes given that the survey set-up is thoroughly tested before administration thereof. Furthermore, a traditional way of disseminating paper-and-pencil surveys is to have students fill it out while in the classroom. In my opinion, there are some disadvantages to this, too. One such disadvantage is bias in the results. Often, students sit next to one another, and filling out a questionnaire with threatening questions this way may result in a considerable social desirability bias. A second disadvantage, of a practical nature, is that teachers are not very willing to give up a lot of teaching time for a research project, as they are usually short in time to cover all the materials in their curriculum. This way, online distribution may prove to be both useful to avoid bias as people fill out the questionnaire in the privacy of their home, whilst it may increase collaboration from universities and professors as it does not cut into their teaching time.

4. Hypothetico-deductive testing in practice

As discussed elaborately in the section on the meta-theoretical underpinnings of this study, it is explicitly deductive or theory-driven. In the previous chapter where the hypotheses have been presented, I already briefly indicated when certain hypotheses can be considered to be falsified, and how the model and its hypotheses fit in with the meta-theoretical assumptions of the study. In the following paragraphs, I will elaborate on this deductive strategy more elaborately. In general, the strategy is to identify, to use Brown's words, a "human universal" (D. E. Brown, 1991), which is then conditionally specified towards a specific instance by identifying the

relevant and spatiotemporally contingent initial conditions that give rise to this specific instance of the universal disposition.

As indicated earlier, this approach comes down to a search for an ontologically deeper causal explanation or, alternatively, an explanation situated at a higher level of universality. This was referred to as a search for the evolutionary underpinnings of prejudice and bias motivated behaviors. What this concretely means is the following. If we take bias motivated aggression to be a more specific instance of the universal phenomenon pro-sociality than is prejudice, it can be said that bias motivated aggression is on a lower level of universality. Alternatively put, this comes down to the claim that bias motivated behavior is a *more restricted instance* of prejudice. In reality, this means that even though prejudice may give rise to bias motivated aggression, it does not necessarily do so; it is a necessary but insufficient condition thereto⁶⁸ (at least it is so theorized in the current study). To put it in the words of Mackie, it is an INUS condition, or an Insufficient but Non-random part of a condition which is itself Unnecessary but Sufficient for their effects (Mackie, 1965). Consistent with the view on mechanisms and regularities in the social sciences, this characterization of the conditions studied in the current study are one constellation that may lead to the outcome, next to a plethora of other constellations of other conditions. Also, this is in line with the view that a mechanism only delivers a partial or selective description of the causal process (Hedstrom & Ylikoski, 2010, p. 53); it only presents specific core elements derived from evolutionary theory in this particular project – and sticks to that for clarity's sake.

On a yet higher level of universality, RWA and SDO are located. Again, these are necessary but insufficient causes for bias motivated aggression to occur, given that a necessary intermediary step is the targeting module of coalitional psychology (or so it is theorized in the current study). This way, what the deductive system looks like, is like *multifinality*: whilst RWA can lead to very different outcomes than bias motivated aggression, it can result in it given a specific initial condition that makes the more universal ideological attitude instantiate as bias motivated aggression. If prejudice is absent, it may instantiate in a wide array of alternative

⁶⁸ As appears from the literature review, only prejudice is covered as a predictor for bias motivated aggression. Obvious additional necessary conditions, however, would be the fact that one at least once has encountered an out-group member covered by prejudice. Otherwise, bias motivated aggression simply cannot occur.

behaviors, ranging from genuine altruism to joining Opus Dei so to speak.⁶⁹ This was also visually represented in the conclusion of the theoretical model in the previous chapter.

How does this model relate to the claims with regard to universality, then? The main problem is that it is quite impossible to see how a very universal concept as “sociality as such” can be accurately measured.⁷⁰ One way would be to look for the physiological underpinnings of such behavior, but this kind of research still is at an early stage and is impossible to investigate using survey methodology.⁷¹ Another way of doing so is relating a different set of outcomes of that same universal class of behavior to the explanandum. This is what the model represents: on the far left side of the model, two forms of pro-social behavior are depicted, which are related to the explanandum through the initial conditions that would give rise to it as an instance of the same universal class of behaviors.

Obvious implications for testing and possibly refuting the theory are the addition of direct effects between the variables. For example, on the basis of the literature review, one would certainly not expect a direct effect between RWA and bias motivated aggression, as this particular ideological attitude reflects an adherence to norms, including non-violence norms. This way, the analysis can be significantly strengthened by conducting several analyses testing for different relationships – both direct and indirect – between the theoretical concepts. The addition of direct effects thus tests for the conditionality of the relationship, which is parallel to the notion of restricted instantiation: the claim that universal *UI* instantiates in phenomenon *PI* if, and only if, it is conditioned by a set of initial conditions [*ic1*] may be (partly) falsified by showing a direct effect between *UI* and *PI*.⁷² In terms of Dretske’s causal jargon (Dretske, 1988; Sandis, 2008), this means that pro-sociality is the structuring cause, whilst the ideological attitudes RWA and SDO are triggering causes. Translated to the vocabulary of mechanisms (in the sense of Little (1991): a series of events governed by law-like regularities that lead from the explanans to the explanandum), this would mean that a different instance of pro-sociality (the

⁶⁹ In this respect it is important to note that the consequence of prejudice may be an unintended consequence of seeking in-group support as well. By no means does the theory set out before imply that all prejudice and related behaviours are consciously premeditated.

⁷⁰ Recall that a universal statement in itself is untestable nor observable. This can only be done in conjunction with specific initial conditions.

⁷¹ Even though a research tradition in biosocial criminology is emerging where mixed designs are used, combining physiological traits such as genetics, hormones, fMRI’s etc. with more traditional experimental and non-experimental research (Walsh & Beaver, 2009a).

⁷² Bearing in mind that *UI* is represented by a set of other instances thereof than the explanandum. These instances are conditioned by other sets of initial conditions. This is, practically speaking, the only reasonable way to link the more vague concept “pro-sociality” to a concrete set of behaviors.

presumed universal) may be linked to prejudice and/or bias motivated aggression only through the mediating variables of Right Wing Authoritarianism or Social Dominance Orientation.

5. Implementation: a latent variable approach

The above strategy can be efficiently implemented using a latent variable approach, more precisely structural equation modeling (SEM). In SEM, theoretical constructs such as “social dominance orientation” are presumed to be variables that are not directly observable, but may exert an influence on specific items in a questionnaire. The latter are referred to as the indicators and are nothing more than the items that probe the latent construct one can find in a questionnaire. On the basis of a number of observed indicators, the latent variable is estimated. By doing so, it is assumed that the responses on the observed indicators (the items of a measurement scale) are the result of the respondent’s (partial) degree of membership in the latent phenomenon. Furthermore, in contrast to a single variable approach, the SEM approach allows for a much better testing of the factorial structure of the variables as well as the internal consistency of the individual scales used by rendering a factor loading.

5.1. Parceling of indicators

In this study, I have made regular use of parcels to limit the number of indicators for each latent variable. In a way, this was done to keep the amount of data manageable and the visual representation thereof understandable to the reader, but this particular technique is often frowned upon as much as it is applauded. In the current study, however, there are some substantive reasons to use the technique. The discussion in this section is fully based on Little, Cunningham and Shahar (2002) who have clearly weighed the advantages and disadvantages of parceling on the basis of a thorough survey of the discussions on the subject, taking into account different research goals.

First, the study is not about the *structure or dimensionality of measurement scales*. Would this be the goal, then parceling is not warranted as it obscures individual item-level particularities in measurement. I am, however, only interested in the relationships that hold between the latent constructs themselves. For this reason, established measurement scales were used, too (as they are supposed to have been well-tested over time).

Second, the technique of parceling applied is the *“item to total construct” technique*. In this technique, items with a strong loading on the construct are paired up with items that have a low loading on the construct, thus generating parcels that have a more or less similar loading on the overall construct. This brings along some basic psychometric advantages, such as higher

reliability of measurement and less distributional violations. Beware, this ought only to be done when the researcher is interested in the relationships between the constructs, certainly not when he or she is trying to investigate the psychometric properties of a scale.

Third, a good practice is to inspect the structure of item-level data before making parcels. Applying the item-to-construct approach of parceling, I have additionally taken into account *correlated residuals of the individual indicators*. Indicators were parceled always a stronger with a weaker item, and the weaker items were selected primarily on the basis of correlated residuals. Also, this lessens the risk on dual loadings in the data, thus rendering an overall more “clean” model from a statistical point of view, eliminating certain nuisances.

5.2. Confirmatory Factor Analyses

In order to see if the observed variables (or parcels in this case) are good indicators of the latent variable, usually a confirmatory factor analysis is conducted. In contrast to exploratory factor analysis, confirmatory factor analysis is of an explicitly deductive nature, in that a theoretically expected structure is imposed on the data. This makes it an adequate tool to be used in the present study.⁷³

In practice, a measurement model will be constructed for each sample in the present study. This means that all latent variables will be brought into relationship with each indicator (parcels in this case), and that all latent constructs will be correlated with all other latent constructs present in the model. This provides a relatively strong test for the factor structure of the data, as cross-correlations of factors and items are taken into account when assessing the fit of the theoretically deduced structure that is imposed on the data. Furthermore, the measurement models (i.e. all observed variables and their relation to the latent constructs in one model) also take into account measurement error, which is not the case in other modes of analysis (e.g. Kline, 2011). In this sense, it is worth noting that it has been argued that the traditionally used measure of Cronbach’s Alpha is principally unrelated to internal consistency (e.g. Sijtsma, 2009).

For each individual indicator, a factor loading is computed, which describes its relative contribution to the variance in the unobserved variable. The values of these loadings range from

⁷³ In exploratory factor analysis, one tries to make sense of the data using statistical procedures. This is, from a philosophical point of view, an inductive procedure, which makes it undesirable for the present study, given its deductive nature and the principle of “theory over statistics”. Or, put differently, strict universality (a logical concept) over numerical universality (a statistical concept).

0 to 1. As a rule, indicators with weak loadings on the latent construct are not used in further analyses, the traditional threshold being 0.4.

Once the indicators (observed variables) for each latent construct are brought into relationship with the latent construct and the weak indicators are removed, the fit of this structure on the data is estimated using a variety of statistics. These will be discussed below, as the same fit statistics are used for confirmatory factor analyses and structural equation models.

5.3. Structural equation models

Once an acceptable measurement model is obtained, hypothesis testing can start using structural equation modeling. This technique uses the indicators and latent constructs from the measurement model, but brings the latent constructs in relationship with each other in a structural way, provided by the theoretical model (rather than correlating them as is the case in CFA). The great advantage of this technique is that it allows for an estimation of both direct and indirect effects, which is important in light of the discussion above on deductive testing of the theory. For, this specific method allows to add or delete paths in a sense that contradicts the theory, and it allows to model strict mediation and direct effects at the same time, while providing summary statistics that allow for a comparison of various alternative and/or equivalent models (*infra*).

In principle, this technique can be placed in the family of regression analyses, with the big difference that multiple regression analyses are being carried out at the same time, and that error variance is controlled for. This way, the model includes endogenous and exogenous variables. Exogenous variables are similar to independent variables in OLS regression, whereas endogenous variables are similar to dependent variables in OLS regression. This way, exogenous variables regress on one or more endogenous variables in structural equation modeling.⁷⁴ Visually, this is usually represented by arrows between the constructs, indicating the direction in which the influence is expected (i.e. which of both is considered endogenous or exogenous). Some variables may fulfill the role of both dependent and independent variable (i.e. the variable has both incoming and outgoing arrows). These are referred to as mediating variables. Thus, the properties of SEM can be considered to be superior to that of OLS, as it allows for the testing of far more complex models than does OLS.

⁷⁴ Note that this has nothing to do with the measurement of both types of variables. For both, several indicators or observed variables are used to estimate the latent construct.

The effect size of the statistical relationship is expressed as a beta coefficient (β), similar to a standardized regression coefficient, accompanied by a p -value to assess the level of statistical significance. In the current project, the significance level of $p < 0.05$ is maintained. In reporting, the level of significance will be indicated. Path coefficients with p -values below 0.05 will not be considered in the analysis.

5.4. Assessment of model fit

Apart from the individual effect sizes, the general model is in need of evaluation, too. To this extent a wide variety of model fit indices has been developed. In general, they can be classified in three categories: absolute fit indices, incremental fit indices and parsimony fit indices. Absolute fit indices compute how well the model fits with the data, compared to no model at all (McDonald & Ho, 2002). Incremental fit indices are of a comparative nature (Miles & Shevlin, 2007), and evaluate model fit by comparing it with a baseline model. As indicated by McDonald and Ho (2002), these models assume all variables to be uncorrelated. Finally, parsimony fit indices penalize model fit estimates for high degrees of complexity. As high degrees of complexity imply an approximation of saturation or saturation as such (meaning that all variables are correlated with each other), this implies that such models are theoretically less stringent. Therefore, parsimony fit indices take into account the complexity of the model, with a preference for theoretically more stringent models (Hooper, Coughlan, & Mullen, 2008).

In practice, a wide variety of such indices exists in each of the three categories, some of which are associated with certain problems. For example, the usage of the chi-square statistic is very sensitive to sample size, and will almost always yield a significant value (meaning a poorly fitting model), whilst this may not be the case for other indices. A review of the literature can help in determining which indices are best suited. Based on the suggestions made by several notable authors in the field (Boomsma, 2000; Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2011), a selection of five estimates which in principle cover all reported best practices in reporting, has been made. In the table below (Table 6), the indices that will be used for the purpose of this study are summarized and the way they ought to be interpreted presented.

This way, at least one of each type of fit indices is reported, along with all the most commonly reported indices that have been proven to be useful in assessing model fit. It must be noted that the chi-square statistic is only reported for the sake of clarity, as it almost always has a significant p -value in large samples (over 400). The samples obtained in this study exceed this

number significantly, so it can be expected that the chi-square statistic will be significant. In this case, however, the RMSEA is more important to inspect as it is free of this sensitivity.

Name – abbreviation	Thresholds
Chi-square	Insignificant p value
Root Mean Square Error of Approximation (RMSEA)	Value equal to or less than 0.05
Standardized Root Mean Square Residual (SRMR)	Value less than 0.07
Tucker-Lewis Coefficient (TLI)	Value equal to or greater than 0.95
Comparative Fit Index (CFI)	Value equal to or greater than 0.95
Parsimonious Comparative Fit Index (PCFI)	The closer to 1, the better the fit. No cut off defined.

Table 6: fit indices and their thresholds

6. Falsification put to practice

As has been discussed in the chapter on philosophy of science, falsification is considered to be of great importance in this deductive, critical-realist research project. Even though there are different approaches to this, such as the fuzzy logical approach discussed by Heylen and Nachtegael (2013), the current project will not be concerned with such approaches as they presume a different operationalization of the concepts used. Whilst this might be a fruitful

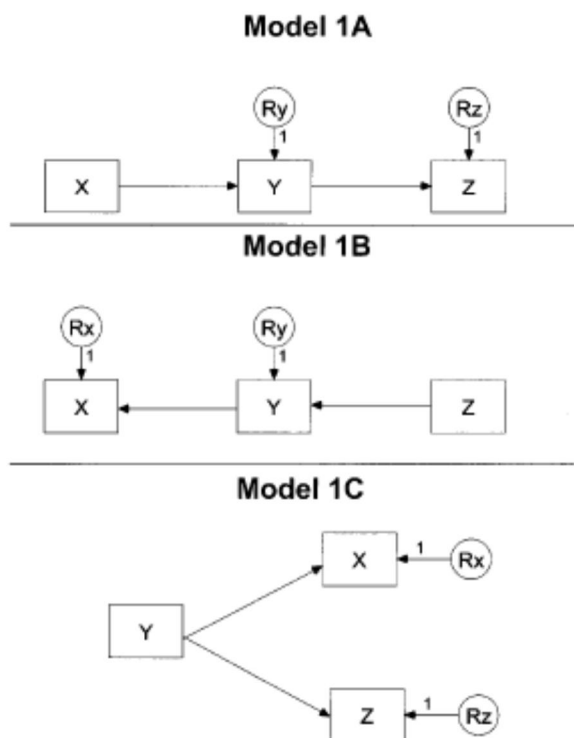


Figure 2: equivalent models (Source: Tomarken & Waller, 2003)

endeavor in the future, for now it seems more appropriate to ensure the comparability of the results to existing studies. This does not mean, however, that no steps to falsify the theory can be undertaken. More precisely, three strategies aimed at destabilizing and really “throwing over” the theoretically expected model(s) will be pursued: a search for equivalent and alternative models, a cross cultural comparison, and sex-specific analyses.

A first test of the theory which approximates the overall logic of falsification is to compare the model that is theoretically expected to a (series of)

equivalent and alternative models. In this sense, an equivalent model is a model that contains the same number of parameters to be estimated; it has the same variables and paths, but the directions thereof are altered. An illustration of this is presented in Figure 2 (borrowed from Tomarken & Waller, 2003). Equivalent models will always result in identical measures of model fit.

Evaluation of these equivalent models is not a matter of statistics as fit indices will be identical. Rather, it is a matter of theoretical argumentation. Whilst some equivalent models may be theoretically acceptable, others will have obvious flaws from a theoretical point of view. In the current study, I will stick to the model as it is derived by the theory, however. This is inspired by the critical rationalist tradition which underlies this study, in which one tries to avoid inductive argumentation on the basis of statistics. If an alternative model is computed, this has to be done on the basis of theoretical grounds, not on the basis of statistical fit – which is, quite frankly, meaningless without theoretical grounding.

A more statistically oriented approach to falsification is the construction of alternative models. These differ from equivalent models insofar as they do not contain the identical variables and/or relationships between them as does the theoretically expected model. One way of doing so is by making certain changes to the model at hand. This way, paths between variables may be deleted or added, variables may be added or removed, or any combination of both. In the current project, addition and deletion of paths will prove to be of great use. The theoretical model derived in the previous chapter is in principle one of strict mediation. By adding direct effects between certain variables and the depend variable, construction of alternative non-equivalent models is possible. These models can be compared to the model with strict mediation with regards to model fit.

A more specific case of alternative non-equivalent models consists of the addition of variables as such. As is the case in regression analyses, model specification in SEM is quite sensitive to the problem of omitted variables. This problem refers to the discrepancy that often exists between the model that is tested and the variables that intervene in reality. Important variables may thus be omitted in the model being tested (which may occur for practical reasons, as it is hardly possible to know the entire number of variables implicated in any given social phenomenon). However, the omission of relevant variables (as is the inclusion of irrelevant variables), may affect the estimates of the model considerably. In a worst case scenario,

estimates are not simply biased, but the entire influence attributed to a given variable included in the model could be accounted for by an omitted variable. For this reason, it seems recommendable to at least try out some alternative models in which other relevant variables are included, to see how the estimates react to this. It must, however, be noted that biased estimates usually refer to a discrepancy with the “real” population estimates of the influence. It is my opinion, however, that for a variety of reasons (not in the least measurement error and specification error), no single statistical estimate should ever be considered to be a “true” representation of reality. It should only be considered to be a **very** crude indicator of reality (the proverbial tip of the iceberg).

This way, attempts can be made to reject the model. Through equivalent models, the theoretical justification of the model can be sharpened, whilst through various alternative non-equivalent models, this theoretical assessment can be accompanied by statistical indicators. However, two more tests will be used.

7. Cross-national validation

As the project is based on evolutionary theory, an international comparison of the results can provide an additional test of the hypothesis contained in the study. The living conditions faced by people in our ancestral past were supposedly similar across the world, giving rise to similar adaptations of the already existing altruism mechanisms, ultimately resulting in coalitional psychology. For this reason, it is expected that the direction of the results will be the same across different countries or cultures.

In order to accomplish this, the study was replicated in another country. One comparative sample was obtained in Southern Europe, i.e. Spain. This sample will be compared to the Belgian sample in order to see whether results are similar with regard to the direction of the influences in the model. Variations in the effect size of the various paths can be logically expected, given that these are socio-culturally contingent.

With regard to these international comparisons, one needs to take into account that the same initial conditions have to apply. If evolved behavioral dispositions are conceived of as “human universals”(see D. E. Brown, 1991 for an extensive treatment of the subject), it follows that they can only mean something in combination with spatiotemporally contingent initial conditions. This way, a comparison is only valid if the same initial conditions apply (which are

socio-culturally contingent). By doing so, the theory may be effectively falsified: if it is valid within a given set of conditions, it should be so in all places where these conditions are present.

It is important to note that this does not mean that the conditions need to be identical. If, for example, a certain condition c_x has a possible range of values ranging from 0 to 1 (the traditional operationalization of a degree of membership in fuzzy logic), it may well be that in setting 1, condition c_x has a value of 0,2 whereas it has a value of 0,8 in another setting. For example, the initial condition RWA may be very salient in Belgium, whereas it may be less salient in Spain. With regard to falsification of the theory, this means that one may hypothesize expected differences in the relationships (more precisely in the strength thereof) on the basis of the salience of the initial conditions, in addition to testing for non-equivalent models.

This does not preclude that everyone around the world may display the same behavioral tendencies (“human universals”), it merely means that they need to be operationalized in a way contingent with the concrete cultural context in which they are studied. Take, for example, the universal statement “sociality results in the exclusion of out-group members when these pose a threat to the values of the in-group”. This will, from an evolutionary point of view, be valid in all contexts. But what is meant by “the values of the in-group” may differ largely across contingent cultural settings. One primary example of this is threats to employment, material success, etc. which are in principle culturally specific instances (even though they have become very widespread) typical of the West (sure these will resonate strongly with our WEIRD target group).

For the purpose of this study, two studies have been conducted in Western European countries, i.e. Belgium and Spain. I expect the results to be the same across these contexts in terms of the direction of the paths, whilst allowing for differences in intensity. These differences may be attributed to the country-specific presences of RWA, SDO and prejudice, which are in themselves culturally-historically contingent phenomena. Even though it is not within the ambit of this study to account for these differences as this would require a completely different approach (e.g. a historical and interpretative approach), the main elements that may codetermine the salience of these conditions may be, *inter alia*, immigration history, immigration rates, salience of the economic crisis, and the presence of right-wing oriented political parties and social action groups. The current study, however, is only concerned with the falsificationist, quantitative aspect of this comparison.

8. Sex-specific analyses

A final element that bears in itself the possibility to challenge the theory, is a sex-specific analysis. For, in the evolution of mankind, some kinds of behavior may be primarily displayed by males, whereas some other behaviors are primarily displayed by females. The behaviors that are susceptible to this, are based in behaviors relevant to procreation in the human evolutionary past. The most widely studied example of this are overall gender differences in violence as a result of differences in parental investment (e.g. Blokland, 2005; Pinker, 2002).

However, coalitional psychology is a mechanism which is presumed to be of common use to both men and women; it is not sex-specific. Therefore, a sex-specific analysis may provide a further challenge to the theory. Other than differences in magnitude, which may be due to overall lower levels of aggression in women compared to men, the model is expected to be substantially the same for both sexes. If not, this would pose serious challenges to the theory. Only in one instance would we expect differences with regard to gender. Differences in the overall levels of violence between men and women may be explained effectively in terms of evolutionary theory.

9. Group comparisons in practice: invariance

In case of cross-national validation as well as gender specific analyses, what will be done in practice is a multiple group comparison in the SEM. Two important elements in this approach merit attention, i.c. measurement invariance and structural (factorial) invariance (see, inter alia, Kline, 2011, for a more substantial discussion on this topic; Meredith, 1993; Vandenberg, 2002).

Measurement invariance across groups refers to the fact that the same items measure the same latent construct in the same way. In other words, prior to conduct any type of group comparison, the researcher needs to test whether or not the data structure of the latent constructs is identical across contexts. The following three conditions need to be met in order to guarantee strict measurement invariance:

- same (highly similar) factor loadings. This is “weak” (“configural”) invariance;
- same item intercepts. This is “scalar” or “strong” invariance;
- same residual variances. This is called “strict” invariance.

In this study, it was opted for to use country-specific adaptations, given the culturally contingent character of RWA and SDO, as well as issues with language, that may not warrant a literal translation. Even though this does exclude the option of testing measurement invariance, for the full measurement model the usage of slightly different measures does have a certain benefit as well: it allows to test the theories dependence on the specific measurements used. In this context, it can be considered a virtue of the theory if it works with different operationalizations of the same theoretical concepts.

However, as a form of cross-national comparison provides a very severe test, efforts have been taken to conduct one, notwithstanding the different operationalizations in terms of measurement scales. Concretely, three items which were equivalent in each country-specific measure were selected in order to make an international comparison possible. Thus, the international comparison reported on uses heavily reduced scales. Again, however, this is not a problem as such. For, the usage of yet another operationalization to test the same theoretical model, in this case a “minimal measurement” of the latent constructs, provides quite a severe test of the model under scrutiny in this study, and that is what it is about in a critical rationalist approach to social science.

On a personal note, I would like to point out that one should not conduct overly complex calculations to confirm the obvious. Even though “scientification” through statistics has become commonplace, I do think that in many cases it will be obvious if there are serious problems with invariance of the scales used. For example, when one sees two CFA’s of the same measurement scale, items of one of which load on different factors, have no sufficient loading, or even an inverse loading on certain factors that contradict the other CFA, more analysis is not needed.

The second type of invariance is structural or structural invariance. This refers to the way the factors are related to each other in different groups. Whilst measurement invariance is a condition before attempting to compare groups, structural variance is not. If two groups are structurally invariant, this merely means there is no substantial difference between those groups with regard to the model tested; it means that the same structural model holds in the different groups. If there is, however, structural variance, this means that substantial (i.e. related to theory) differences exist between the different groups included in the study. Such differences may partly falsify the theory, and are therefore of the utmost importance. With regard to the current study, the threshold to do so is not set to absolute invariance. Paths between latent

constructs (satisfying the condition of measurement invariance) will be considered to be falsified if:

- if a path is absent in one of the groups used in the comparison, and/or;
- if the sign of the path coefficient is different in one or more of the models included in the comparison.

10. Exploratory survey: pretesting the idea behind the study

Before testing the actual model, an exploratory study was conducted using existing measurement scales of pro-social behaviors, social dominance orientation, right wing authoritarianism, prejudice and bias motivated aggression. The rationale behind this exploratory study is to find out whether or not – and which – connections exist between different forms of pro-sociality, the ideological attitudes, prejudice, and bias motivated behaviors before initiating the construction of more specific scales intended to probe the two forms of signaling discussed in the previous chapters. At the same time, the exploratory survey may serve as a pretest for all other measurement scales that will be included in the final questionnaire. A report on this pretest can be found in appendix M.1., in which all of the factor analyses can be found, as well as supplementary (exploratory) analyses. The survey used for the exploratory study is also included there. More measurement scales than will be actually used appear in the current study. They have been included to take advantage of the data gathering rounds to test for additional relationships and to pretest a new predictor of prejudice, which will be elaborated on elsewhere.

10.1. Construction of signaling scales

In this section, the construction of a measurement scale that intended to measure dominance signaling and submission signaling is discussed. The scale is based on existing scales akin to the two concepts, but the items have been adapted from the point of view of the theory. First, the structure of the scale will be discussed, followed by the pretest of the scale and, finally, a discussion and evaluation thereof.

10.1.1. Structure of the genuine signaling of pro-sociality tendency scale

One of the two main reasons that underlie human sociality, is group living. For this reason, many tend to behave favorably towards their peers, as this feels good and this way one signals his or her compliance to the group. This scale is devised to measure costly signaling in the sense of signaling genuine commitment to the in-group. After extensive discussion with various

colleagues, the items were constructed using the peer pressure, conformity and popularity measure (Santor, Messervey, & Kusumakar, 2000) as a general source of inspiration. However, none of the eventual items are direct translations of this measure, as they are adapted towards the new target group (i.e. university students instead of adolescents), and are intended to be closely related to the notion of genuine signaling of pro-sociality in one's perceived in group.

1. I want to be the best
2. Working in group gives me the opportunity to show my value as a person;
3. For me, it is very important not to look like loser;
4. In group activities I tend to take the lead if this helps my group to win;
5. The best of working in group is that it allows me to show my worth as a group member;
6. I usually do what others ask me to do;
7. If my friends exclude me, I feel bad;

The first and the third item refer to how one wants to be in comparison to others. As discussed, in genuine signaling of group commitment, an important element is to be regarded as someone with good reputation, and thus good standing. These two items aim at grasping this rather general overall quality as a person. Items 2, 4, and 5 refer to how one acts when working in group. For people in universities, this is quite a common situation, for which reason the items are formulated in terms of group-work. Items 2 and 5 directly grasp the notion of signaling by asking respondents if they use group work as a platform to show off their value (compare this to the peacock's tale in signaling theory). Item 4 probes this tendency more indirectly, as taking the lead to help the group to win undoubtedly is a good way to gain better standing in that group. The latter must not be confused with what was allegorically called "leaders" in subtitle 4.3 "leaders and followers". For all clarity, "leader" there refers to incitement or initiation of inter-group conflict, whereas here, clearly the situation of competition is not incited or initiated by the person, but is already present, which makes a very big difference from the point of view of evolutionary theory. Furthermore, as indicated earlier, the "leaders", or people generally higher in SDO, do not necessarily take part "in the action", whereas this item is explicitly framed in terms of being in the action. In this sense, the "leader" referred to earlier, is the kind of "leader" that verbally incites people to take action against out-groups, but will usually avoid the real conflict him- or herself out of the selfish motive of self-protection or self-preservation.

10.1.2. Structure of the inclination to deceptively signal pro-sociality

The evolutionary framework predicts that another facet of pro-social behaviors would consist of signaling one's commitment in the in-group in a deceptive way (subtle cheating/defection). Items 1 and 6 refer to the inverse of showing one's quality as a person when working in group. Here, the specific motivation of achieving one's own goals as the sole purpose for working in group is included, in order to grasp the subtle cheating part of deceptive signaling commitment to the in-group. In all other items, (items 2, 3, 4, 5, 7), the inclination to do things for the mere purpose of showing one is part of the group, whilst the motivation to do such things when one is genuinely committed to the in-group, is probed. For example, in item three, it is included that one does things one doesn't really want to do to show one is part of the group. If one would be genuinely committed to the in-group, it can be expected that one enjoys doing things with the in-group. Similarly, the other items probe more anti-social behaviors, which would be inspired by an emotional response against the specific individual in question when one is genuinely concerned for the in-group and its norms. The items are phrased in such a way that this cannot be the case, as it is clearly indicated that the respondent ought not to know the person in question. Therefore, the remaining motivation presumably is self-interested signaling of one's commitment to the in-group, or, in evolutionary terms, subtle cheating.

1. I only work with others if I get something in return, otherwise I don't usually do it
2. Sometimes, I take part in bullying even though I do not have anything against the person in question;
3. I only work in group if I get something out of it myself, otherwise I prefer not to do so;
4. Sometimes I do things I don't really want to do, to show I'm part of the group;
5. I sometimes exclude others even though I don't personally have anything against them;
6. I sometimes gossip about people, even though I don't know them ;
7. I only work in group if it helps me to achieve my own goals, the goals of the group don't interest me;
8. If my friends are bullying someone, I usually intervene to make them stop (reverse coded).

Items are inspired by the cooperative orientation scale as developed by Chen et al.(Chen, Xie, & Chang, 2011) and the Peer Pressure, Conformity and Popularity items, as developed by Santor et al. (2000). Adaptations are made in order to capture dominance signaling, and to cover concrete signaling instances.

10.2. Final questionnaire

By means of conclusion, for the purpose of this study, the final survey will minimally consist of the following measurement scales:

1. The signaling measures
2. Right Wing Authoritarianism;
3. Social Dominance Orientation;
4. Prejudice composite measure;
5. Self-reported bias motivated aggression.

Consistency and CFA of these measures will be reported in the chapter on the results of the studies. The studies are coordinated in a pragmatic way: by doing them sequentially, the first study can count as a pretest of the measures for the second study. However, if the factorial structure of the scales is acceptable in the first study, it can be regarded as more than a pretest, i.e. a full study. Given the fact that the questionnaire was distributed online (except for in the Basque country, where paper-and-pencil surveys were administered as well given that the Spanish study was coordinated from the University of the Basque Country), this may significantly bring up to speed the entire research process. In the next chapter, the results of the Belgian and Spanish studies will be presented.

Chapter VI. Results of the empirical studies

Thus far, a lot of ground has been covered. Starting from a discussion on the underlying logic and meta-theoretical assumptions of this study, we moved to a discussion on evolutionary theory and its relation to prejudice, connected this to the most salient research domains on prejudice in contemporary academia, to end with a discussion on how all of this theory could be tested. As the saying goes, the proof of the pudding is in its eating, so no theory should ever be uncritically accepted without its being thoroughly tested empirically, in a variety of settings, using a variety of strategies.

In this chapter, this process of theory testing will be initiated, meaning that the testing reported here is not conclusive; it can only be regarded as the first step in the testing of a possibly interesting new area of research, and should therefore remain under further development and scrutiny in the future – as is the case with any theory for that matter. As indicated in the chapter on the methodology, empirical testing of the core model in the study has been done in two different settings. Using a survey in a Spanish and Belgian sample, the model was tested using different measurement scales insofar as it was chosen to use the specific linguistic adaptations of already validated measurement scales in each country (thus linguistic differences in items do exist between the Dutch and Spanish surveys). Whilst this is a modest study, it has the advantage of cross-national comparison and ruling out the possibility that the connections between RWA, SDO and the signaling scales are due to the specific nature (items) of the measurement scales, thus strengthening the overall test of the model. The survey used in Spain can be found in appendix R.1., and the survey used for the Belgian study is included in appendix R.2.

This chapter will first deal with the results of each country individually. For each study, a succinct description of the sample will be given, followed by a summary of the measures used. This is followed by a brief discussion on the measurement model, where the confirmatory factor analysis of the measurement scales combined will be reported. This is deemed to be a superior approach to the use of Cronbach's alpha (Sijtsma, 2009), given certain shortcomings of the latter. Then, the actual model tested will be discussed. The model reported is the best fitting model. This means that the theoretically expected model (strict mediation model) will be reported on, but in addition thereto additional paths will be reported on that have been tested for in line with the hypotheses set out in the previous chapter. The rationale is that the strict

mediation model is assumed have a high degree of similarity across countries (i.e. the direction of the result is equal), whilst the additional paths may vary across contexts due to cultural variation. They can, however, be very informative and shed more light on the psychometric properties of the latent concepts used, as well as on the theoretical validity of the model tested. After the overall model is discussed, a multigroup comparison based on sex will be done. There, the measurement model (“measurement weights” in Amos terminology) and the structural model (“structural weights” in Amos terminology) will be focused on using the Amos Graphics interface, according to the procedure set out by Byrne (2009), and inspired on the Jöreskog tradition, which allows to identify (partial) equivalence. More information on this latter strategy will follow later. After presenting the two studies separately, a multigroup comparison across countries will follow, using only three indicators per latent construct. The reason for this is that a selection of minimally three indicators per latent construct per country had to be made, but that the measurement scales differ across countries. This made it difficult to merge the samples. However, three indicators per country have been matched. To conduct this multigroup comparison, the same procedure is followed as in the country-specific studies. This latter approach presents a further challenge to the theory in two respects. First, it allows for the testing of cross-national equivalence, which is an important test of any evolutionary approach. Second, it allows to test for the strict model using yet other measures (reduced measurement scales), and will certainly be interesting to see whether or not the model holds using these different operationalizations. Let us now consider the first study, conducted in Spain.

1. Spanish study

The Spanish study was conducted on a large sample of 1360 students at different Spanish Universities (University of the Basque Country, Open University of Catalunya, University of Barcelona and the University of Málaga), enrolled in law, criminology or psychology programs. In total, the sample consisted of 957 women (70.4%) and 403 men (29.6%). Most respondents were enrolled in a program at the first grade (22.1%), followed by the second (20.5%) third (18%) and fourth grades (16.8%)⁷⁵. A small portion of respondents were enrolled in a master program (11.5%) and a tiny portion in a doctoral program (1.9%). About a tenth of respondents indicated their level of education to be “other” (9.3%). The mean age of the sample was 34 years old, with a minimum age of 18 and a maximum age of 71. The vast majority of

⁷⁵ These levels correspond to the Spanish way in which levels of education are expressed, i.e.; “primero grado”, “Segundo grado” and so forth. They broadly coincide with first bachelor, second bachelor, third bachelor and master.

respondents was to be located within the 25-40 age range, with some outliers with an age above 65 years old. The latter can be explained by the fact that the University of Málaga, which provided for the majority of the responses, is an open university which is specialized in distance education, thus lowering the threshold (e.g. due to having a job) to enroll for somewhat older people. Also, this fact does nuance the earlier made remark regarding the usage of student samples; in the Spanish study in particular, the sample can be regarded more or less as in between a student sample and a “regular” sample. In any case, this is not to be regarded as a problem, as this increases the quality of the test the theory is subjected to (as in the Belgian sample only students took part).

1.1. Measurement and measurement model

First of all, the survey included the signaling scales discussed in the previous chapter. They both scored relatively low yet acceptable on Cronbach’s alpha, with the quality signaling scale of five items having an alpha of .64 and the deceptive signaling scale having an alpha of .60. However, both scales do not probe pure attitudes but rather behaviors or behavioral inclinations, which may, at least in part, explain the relatively low scores on Cronbach’s alpha. That is, they can be regarded as variation scales rather than scales measuring a latent construct.

Further, the well-established RWA and SDO scales were administered. Sample items of the RWA scale (6 items, alpha = 0.69)⁷⁶ are “our country desperately needs a strong leader who will do what has to be done to destroy the radical news ways and sinfulness that are ruining us” and “once our government leaders give us the go ahead, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within”. Sample items of the SDO scale (9 items, alpha = 0.79) are “to get ahead, it is sometimes necessary to use force against other groups” and “inferior groups should stay in their position”.

⁷⁶ Note that only six out of the 12 items originally used in the Spanish study were retained for the analysis. The considerations at the basis of this are (i) the internal consistency which is optimized, (ii) items of all three subscales were included, and (iii) the overall performance of the measurement model which showed good loadings of all parcels on the latent construct. The items that were retained are the following: our country needs strong leaders that can eradicate the extremism that is prevalent today, our old values and traditions still provide for the best guidelines on how to live, the laws that punish abortion and pornography need to be strictly enforced, we should admire our ancestors more, there are many radicals that try to destroy society and we should stop them, and, when our government tries to stop dangerous people in our society it is the obligation of every good citizen to help. Even though a language-specific adaptation of the RWA scale was used for this study, it did not function very well. One reason may be that the bulk of the study was conducted in the Northern part of Spain, where “extremism” tends to be more left-oriented rather than right-oriented. This is, however, just a personal feeling and needs more in-depth study.

The prejudice scale was composed of a combination of Pettigrew and Meertens' (1995) blatant and subtle prejudice scale (9 items, alpha = .86). Sample items are “immigrants have jobs that should belong to US citizens” and “the immigrants living here teach their children different values than those needed to be successful in this country”.

For the measurement of bias motivated aggression, a self-report scale was developed probing if the respondent has done one of the following things to an immigrant, for the very reason he is an immigrant: avoid them, indicate indirectly that they're not welcome, indicate directly that they are not welcome, excluding them from activities or places, intimidate them, damage their property, steal from them, being aggressive towards them, hurting them, and intimidating them sexually. No alpha is computed for this measure, as it is a self-report behavioral measure, and only makes use of binary response categories. The binary responses were summed to get an overall score on out-group aggression. The full measurement model with parcels is displayed in Figure 3. For factor loadings of individual items please see appendix R1. In general, the measurement model performed well in terms of model fit (see Table 7).

<i>Fit Index</i>	<i>value</i>	<i>threshold</i>
χ^2_{80}	259.48	> 0.05
<i>p</i> -value	0.00	
RMSEA	0.04	< 0.08
SRMR	0.04	< 0.05
TLI	0.96	> 0.95
CFI	0.97	> 0.95
PCFI	0.74	Close to 1

Table 7: fit indices of the measurement model in the Spanish study

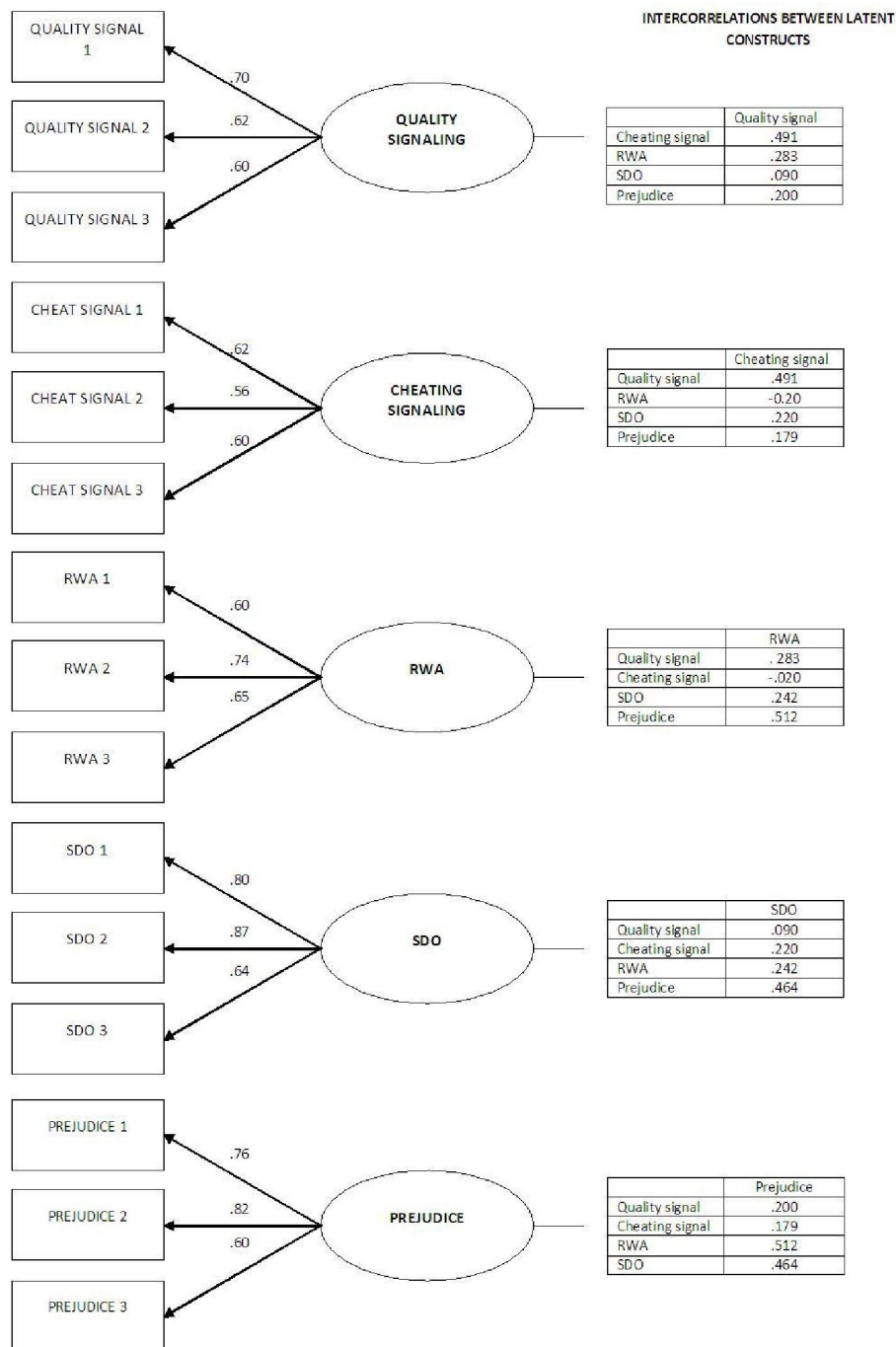


Figure 3: measurement model of the Spanish study. Items of all scales are parcelled into three indicators per latent construct.

1.2. Test of the theoretical model

The result of the structural equation model is displayed in figure 4. Only path coefficients with a p-value below 0.05 are displayed. The different fit indices are reproduced in Table 8.

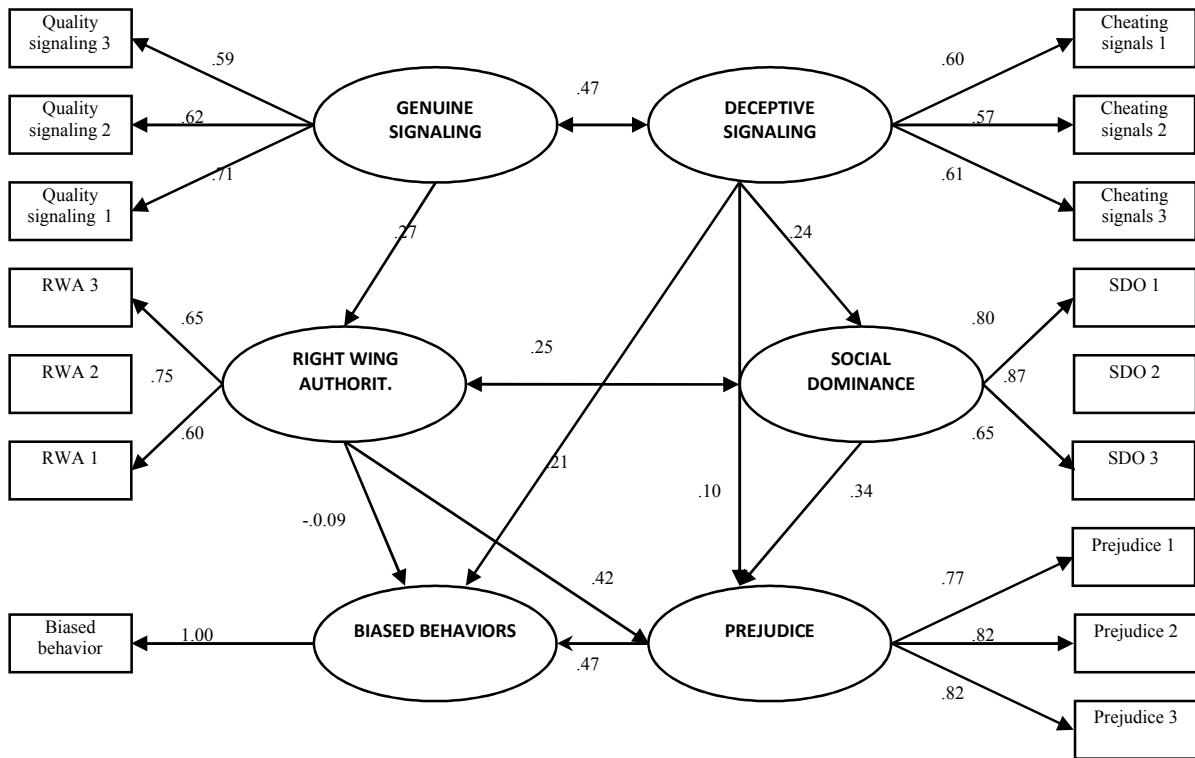


Figure 4: model in the Spanish sample. All paths are significant at the 0.001 level, except the path deceptive signaling → prejudice, which is significant at the 0.01 level, and the path RWA → bias motivated behaviors, which significant at the 0.05 level. Non-significant paths are omitted from the diagram.

Fit Index	value	threshold
χ^2	315.43	> 0.05
Df.	95	
p-value	0.00	
RMSEA	0.04	< 0.08
SRMR	0.04	< 0.05
TLI	0.96	> 0.95
CFI	0.96	> 0.95
PCFI	0.76	Close to 1

Table 8: fit indices of the model in the Spanish study

As can be inferred from Table 8, the model is well within acceptable range of all reported fit indices, apart from the chi-square statistic. This is, however, a normal phenomenon using large samples (e.g. Kline, 2011). It can be safely concluded that the model fits well with the data.

In general, the hypotheses were largely confirmed. There is a significant path that runs from quality signaling to RWA ($\beta = 0.27$, hypothesis 1a), a path that runs from RWA to prejudice ($\beta = 0.42$; hypothesis 1b), and one that runs from prejudice to bias motivated aggression ($\beta = 0.47$, hypothesis 10). It is noteworthy that there is a small but negative path between RWA and bias motivated aggression as well ($\beta = -0.09$), which provides further support for the fact that Right Wing Authoritarianism does not automatically result in bias motivated behaviors (hypothesis 8). In terms of our theoretical exposition, this means that, indeed, people higher in RWA tend to be more pro-socially oriented and rule abiding, which would normally *lower* their propensity to bias motivated aggression. The reason for this is that nonviolence has become an important norm throughout history as well (e.g. Pinker, 2011). It follows that this now important norm is usually respected by people high in RWA as they generally tend to uphold group norms. Put differently, neutralization of group norms through prejudice is a *necessary* step as it may justify the violence against a specific out-group. This finding is perfectly in concert with the theoretical expectations of this study, and provides corroborating evidence for hypothesis 8 of this study, stating that there is no significant positive or a significant negative effect of RWA on bias motivated behaviors. Moreover, as can be seen in Figure 4, the model provided corroborating evidence for hypotheses 2 and 3 as well, which stated that no direct, significant effects were expected between genuine signaling of sociality and prejudice and bias motivated behaviors, respectively.⁷⁷

The second set of paths shown in the model, runs from deceptively signaling group membership (cheating in the diagram) to SDO ($\beta = 0.24$, hypothesis 4a), followed by a path running from SDO to prejudice ($\beta = 0.34$, hypothesis 4b), which in turn had a positive relationship with bias motivated aggression ($\beta = 0.47$, hypothesis 10), as was theoretically expected. Contrary to the case of RWA, a direct effect between deceptive signaling and prejudice ($\beta = 0.10$), but also a considerable direct effect between deceptive signaling and bias motivated aggression ($\beta = 0.21$), was found, providing corroborating evidence for hypotheses 5, 5a, and 5b. This can be explained in terms of an overall more antisocial attitude for those inclined to deceptively signal their commitment to the in-group, consistent with evolutionary theory. Their primary concern is their own interest, which may incline them to exploit and exclude not only in-group members, but also out-group members. To make sure the direct effect of deceptive signaling on bias motivated behaviors is not due to item-overlap, a confirmatory factor analysis with deceptive

⁷⁷ It should be noted, however, that these are nil-hypotheses and it would require more to corroborate them than merely showing the absence of a significant path, as the absence thereof might be due to a plethora of other reasons than the one discussed in the study.

signaling and bias motivated aggression only was run, which showed adequate fit ($X^2_8 = 18.839$, $p = 0.016$); AGFI = 0.988; CFI = 0.990; RMSEA = 0.032) and a medium correlation between both latent constructs ($r = 0.34$). Inspection of the indirect effects will shed more light on this particular relationship. In Table 9, the effects of genuine signaling and deceptive signaling on prejudice and bias motivated behaviors – the most relevant effects in this study – are decomposed into total, direct, and indirect effects.

Endogenous variables	Causal variables (exogenous)					
	Genuine signaling			Deceptive signaling		
	Ust.	SE	St.	Ust.	SE	St.
Prejudice						
<i>Total effects</i>	0.18	0.04	0.11**	0.43	0.09	0.18**
<i>Direct effect</i>	---	---	---	0.23	0.08	0.10*
<i>(Total) indirect effects</i>	0.18	0.04	0.11*	0.20	0.04	0.08**
Bias motivated behaviors						
<i>Total effects</i>	0.02	0.01	0.03**	0.24	0.04	0.30**
<i>Direct effect</i>			---	0.17	0.03	0.21*
<i>(Total) indirect effects</i>	0.02	0.01	0.03**	0.07	0.02	0.08**

Table 9: decomposition for effects of exogenous variables on prejudice and bias motivated behaviors in the Spanish sample. All reported effects are standardized estimates. *Ust.*, unstandardized; *St.*, standardized; * $p < 0.05$ **; $p < 0.01$; *** $p < 0.001$. Amos bootstrapping procedure was used to obtain estimates.

From table 9, it can be inferred that forms of signaling indeed exert a total indirect effect (all indirect effects present in the model combined) on prejudice and bias motivated behaviors. Quality signaling has a modest total indirect effect on prejudice (0.11), and a small but significant (total) indirect effect on bias motivated behaviors (0.03). Even though these findings provide initial support for hypothesis 1 of the study, there are two potential paths from genuine signaling to bias motivated behaviors, one mediated by RWA only, and one mediated by RWA as well as prejudice. When the total indirect effects are inspected more closely by computing the significance of each mediated path using the bootstrap procedure of (Hayes, 2013; Preacher & Hayes, 2008)⁷⁸, it appears the mediated path *genuine signaling* → *RWA* → *prejudice* → *bias motivated behaviors* is indeed significant ($\beta = 0.03$; $SE = 0.05$; $LLCI = 0.02$; $ULCI = 0.04$)⁷⁹. This confirms hypothesis 1. Further, the path *genuine signaling* → *RWA* → *bias motivated behaviors* also turns out to be significant ($\beta = -0.01$; $SE = 0.01$; $LLCI = -0.03$; $ULCI = -0.00$).

⁷⁸ In this method, using regression analyses, sequential mediation effects can be computed. Using bootstrapping, confidence intervals are computed. Bootstrapping was set at 10000.

⁷⁹ SE, bootstrap standard error; LLCI, lower limit of the bootstrap confidence interval; ULCI, upper level of the bootstrap confidence interval.

The effect is, however extremely small and the upper level of the confidence interval is at the border of being acceptable (the unrounded score is -0.0004). Given the large sample size, this effect should be considered to be marginal.

In turn, deceptive signaling has a small total indirect effect on prejudice (0.08), and a total indirect effect of a similar magnitude on bias motivated behaviors (0.08), thus providing initial support for hypothesis 4. When these indirect effects are inspected more closely by using the same approach designed by Preacher and Hayes, results indicate that the mediated path *deceptive signaling* → *SDO* → *prejudice* → *bias motivated aggression* is significant ($\beta = 0.02$, $SE = 0.01$, $LLCI = 0.02$, $ULCI = 0.03$), thus providing corroborating evidence for hypothesis 4. Furthermore, the results of the analysis of indirect effects also suggests that the path *deceptive signaling* → *prejudice* → *bias motivated behaviors* is significant as well ($\beta = 0.03$, $SE = 0.01$, $LLCI = 0.01$, $ULCI = 0.05$). These results support hypotheses 5 and 5a, stating that the mediation effect is weaker in cases of deceptive signaling of sociality, and that a direct path between deceptive signaling and prejudice exists, respectively.

These findings provide corroborating evidence of the theoretical model developed in this study, *viz.* that bias motivated behaviors are in part determined by two types of pro-sociality, be it that in the case of genuine pro-sociality the indirect effects primarily run through RWA and prejudice. This way, hypothesis 1, stating that there is a significant indirect effect of genuine signaling of pro-sociality on bias motivated behaviors, running through RWA and prejudice, is corroborated in this particular study. The same holds for hypothesis 4, stating that there is a significant indirect effect of deceptive signaling on bias motivated behaviors, running through SDO and prejudice. This way, the two core hypotheses of the study are corroborated.

Apart from this, hypothesis 2 could not be falsified, as no significant path could be drawn between genuine signaling and prejudice. The same holds for hypothesis 3. As there was no significant association between genuine sociality and prejudice, this hypothesis could not be rejected. Interestingly hypothesis 5b, which stated that a direct relationship between deceptive signaling and prejudice should exist, was corroborated in this study, thus providing support to the idea that the necessity for intervening variables is less of a necessity in cases of deceptive signaling compared to genuine signaling. Both hypotheses 6 and 7, which stated there would be no association between genuine signaling and SDO, and deceptive signaling and RWA respectively, could not be rejected as no significant associations could be computed. As a negative direct effect existed between RWA and bias motivated behaviors, hypothesis 9 can be

regarded as being corroborated. Finally, the strong and significant path coefficient between prejudice and bias motivated behaviors, provides for corroborating evidence of hypothesis 10. In the next section, hypothesis 11, which stated that no difference regarding the direction of the results may exist between men and women (if the evolutionary underpinnings of prejudice and bias motivated behaviors as derived in this study are correct), will be investigated using group comparisons.

1.3. Group comparison based on sex

As discussed earlier, an important additional test for the theory is a comparison between men and women. In this respect, it can be expected that the evolutionarily acquired mechanism operates in more or less the same way for both men and women, given that the adaptive problem it intends to resolve is non sex-specific. That is, both men and women can take advantage of the benefits of this particular mechanism in terms of survival. Of course, given that many mechanisms operate at the same time, some sex-dependent differences can be expected, due to external factors such as aggressiveness, which do vary across sexes, and may have an impact on the relationships studied here. The direction of the results, however, ought to be the same across sexes, otherwise the evolutionary logic set out in this study can be questioned. Before moving to the group comparison, the overall model fit – which is now computed for the model across both groups, will be briefly discussed. As appears from Table 10, the model fits well with the data, and it can be said that model fit generally is increased in comparison to the single-group model discussed earlier.

<i>Fit Index</i>	<i>value</i>	<i>threshold</i>
χ^2	40.44	> 0.05
<i>p</i> -value	0.00	
RMSEA	.03	< 0.08
SRMR	.05	< 0.05
TLI	.96	> 0.95
CFI	.97	> 0.95
PCFI	.76	Close to 1

Table 10: model fit for the two-group model based on sex in the Spanish study

To test the group differences, the stepwise procedure as set out by Byrne (2011) and inspired on the Jöreskog tradition, was followed. In short, in this procedure one gradually moves from testing measurement invariance to testing structural invariance. Whenever a certain model is

not equivalent across groups, a stepwise inclusion of the parameters constrained in that model is conducted. Every equivalent parameter is kept constrained, whilst those identified as not equivalent are left to vary freely across groups. Rather than an all-or-nothing game, this particular approach allows to identify the specific points of divergence between both groups. The model used for the comparison is the full model (as there are no substantial differences between the strict and full model in terms of coefficients and model fit, this may be a more informative approach as more relationships are tested with regard to their stability across groups). Finally, the focus will be on two models, i.e. the measurement model, which compares the factor loadings on the latent constructs across groups, and the structural model, in which the path coefficients are compared across groups. I consider these to be the most important aspects, as error variances etc. are a very strict demand in terms of model equivalence, a position also held by several authors in the field (e.g. Bentler, 2004; Byrne, 2009). In line with the Jöreskog strategy, first the measurement model will be scrutinized before inspecting the structural parameters.

In the Spanish sample, the measurement model is equivalent across both sexes, as can be inferred from Table 11.

Model	Comparative model	Df.	χ^2	<i>p</i>
Factor loadings of all indicators unconstrained		12	17.36	.14
constrained equal (Model 1)				
All path coefficients constrained equal	Model 1	20	37.19	.01

Table 11: model comparison for sex in the Spanish sample.

As appears from this table, there is no need to a stepwise procedure in which all indicators of the latent constructs are constrained successively, as the measurement weights model, in which all of these factor loadings are constrained equal, has a non-significant chi-square value, indicating a proper equivalence across sexes. In the table, the structural weights model is displayed as well. Compared to the baseline model (unconstrained), this model does not show equivalence across groups.

For this reason, multiple structural weights models have been created, where in every model one parameter is constrained. If a certain parameter shows equivalence across groups, the parameter is kept constrained and the next parameter is constrained. This model is then compared to the last model in which parameter were statistically equal. The overall result is

that four parameters are not equivalent across groups, *i.e.* the coefficients of the paths *RWA* → *prejudice*, *RWA* → *bias motivated behaviors*, *SDO* → *prejudice*, and *prejudice* → *bias motivated behaviors*. The summary results of the group comparison are presented in Table 12.

Model	Comparative model	Df.	χ^2	<i>p</i>
Model 1 and coefficient 2 constrained	Model 1 (all factor loadings constrained)	1	0.05	.83
Model 1 and coefficients 1 and 2 constrained	Model 1 and coefficient 2 constrained	1	0.16	.70
Model 1 and coefficients 1, 2 and 3 constrained	Model 1 and coefficients 1 and 2 constrained	1	0.69	.41
Model 1 and coefficients 1, 2, 3 and 4 constrained	Model 1 and coefficients 1, 2 and 3 constrained	1	0.02	.90
Model 1 and coefficients 1, 2, 3, 4, and 5 constrained	Model 1 and coefficients 1, 2, 3 and 4 constrained	1	4.23	.04
Model 1 and coefficients 1, 2, 3, 4 and 6 constrained	Model 1 and coefficients 1, 2, 3 and 4 constrained	1	7.79	.01
Model 1 and coefficients 1, 2, 3, 4, and 7 constrained	Model 1 and coefficients 1, 2, 3 and 4 constrained	1	2.07	.15
Model 1 and coefficients 1, 2, 3, 4, 7 and 8 constrained	Model 1 and coefficients 1, 2, 3 and 4 constrained	1	11.560	.00

Coefficient guide:

- 1: genuine signaling → *RWA*
- 2: deceptive signaling → *SDO*
- 3: deceptive signaling → *prejudice*
- 4: deceptive signaling → *bias motivated behaviors*
- 5: *RWA* → *prejudice*
- 6: *RWA* → *bias motivated behaviors*
- 7: *SDO* → *prejudice*
- 8: *prejudice* → *bias motivated behaviors*

Table 12: structural equivalence across sexes in the Spanish sample.

The results in Table 12 are generally consistent with the results one would obtain using the pairwise comparison of parameters obtained in Amos through a bootstrap procedure, with the exception of the coefficient of *RWA* → *prejudice* and *SDO* → *prejudice*. As indicated in Table 13, the coefficient of the path *prejudice* → *bias motivated behaviors* clearly differs significantly across sexes (z-score $-2.58 > |1.96|$), as does the coefficient of the path *RWA* → *bias motivated behaviors* (z-score $2.97 > |1.96|$).

	<i>Coefficients for men and women</i>		
	Men	Women	z-score
Quality → RWA	.23	.28	0.93
Cheating → SDO	.22	.24	0.46
RWA → prejudice	.34	.46	0.83
SDO → prejudice	.44	.30	-1.45
Cheating → prejudice	.16	.08	-0.86
Prejudice → behaviors	.56	.43	-2.58
cheating → behaviors	.16	.23	0.98
RWA → behaviors	-.23	n.s.	2.97

Table 13: pairwise comparison of coefficients between sexes using the bootstrap procedure and z-scores.

Thus it can be concluded that the model is partially equivalent across sexes. In this context, it is of great importance to note that the “evolutionary part” – for lack of a better name – of the model, incorporating the newly introduced variables functioning as causes of the causes based on evolutionary theory, is fully equivalent across sexes. The differences that do emerge, are located in the social psychological scales (which is to be expected, given sex differences in aggression etc.).

The differences that do emerge with regard to sex, however, are not of a nature to falsify the theory; some are even utterly compatible with evolutionary theory. For example, regarding the path from RWA to bias motivated behaviors, the data suggest that the protective role of RWA (i.e. the negative coefficient between RWA and bias motivated aggression) is an exclusively male affair: for men, RWA is a protective factor when it is not combined with prejudice, whereas this is not the case for women. This resonates well with evolutionary theory. First, overt aggression (the type of aggression that the self-report scale probed) is a predominantly male affair, which may in itself be a sufficient explanation for this phenomenon. Apart from that, however, it can be suggested that the effect of RWA on bias motivated aggression is reversed, so to speak, when prejudice is absent. The reason for this is that RWA incites a kind of submission to group norms, of which equality is an integral part in our contemporary society. Without this norm being neutralized by prejudice – basically expelling the out-group members outside of the sphere of application of this particular norm – the typically male overt aggressive expressions of bias may take root. Thus this particular finding is in concert with the theory to be tested. This explanation may also account for the less obvious (at least in terms of z-scores) difference between both sexes regarding the path from prejudice to bias motivated aggression, which is larger for men compared to women. This may provide further support for the “neutralization” hypothesis, in which male violence may be facilitated by the neutralization of

non-violence norms (perhaps exemplified in RWA without prejudice being present) through prejudice, which typically incorporates a de-humanization or at least devaluating view of the out-group.

1.4. Summary of the results in the Spanish study

Taken together, the above findings support the theoretical model developed in this study. Most of the predicted relationships have been corroborated. By means of intermediary conclusion, all hypotheses underlying this study are reproduced in Table 14, where it is indicated whether they are corroborated or falsified.

<i>Hypothesis 1: there is a significant, positive indirect effect of genuine signaling of sociality on bias motivated behaviors, which runs through RWA and prejudice.</i>	Corroborated
<i>Hypothesis 1a: there is a significant, positive direct effect of genuine signaling of pro-sociality on RWA.</i>	corroborated
<i>Hypothesis 1b: there is a significant positive direct effect of RWA on prejudice.</i>	Corroborated
<i>Hypothesis 2: there is no significant direct effect of genuine signaling of pro-sociality on prejudice.</i>	Corroborated
<i>Hypothesis 3: there is no direct effect of genuine signaling of pro-sociality on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 4: there is a positive indirect effect of deceptive signaling of pro-sociality on bias motivated behaviors, which runs through SDO and prejudice.</i>	Corroborated
<i>Hypothesis 4a: there is a positive direct effect of deceptive signaling on SDO.</i>	Corroborated
<i>Hypothesis 4b: there is a positive direct effect of SDO on prejudice.</i>	Corroborated
<i>Hypothesis 5: the mediation effect is weaker in cases of deceptive signaling of pro-sociality compared to genuine signaling of pro-sociality.</i>	Corroborated
<i>Hypothesis 5a: there is a positive direct effect of deceptive signaling of pro-sociality on prejudice.</i>	Corroborated
<i>Hypothesis 5b: there is a positive direct effect of deceptive signaling of pro-sociality on bias motivated aggression.</i>	Corroborated

<i>Hypothesis 6: there is no direct effect of genuine signaling of pro-sociality on SDO.</i>	Corroborated
<i>Hypothesis 7: there is no direct effect of deceptive signaling of pro-sociality on RWA.</i>	Corroborated
<i>Hypothesis 8: There is no direct positive effect of RWA on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 9: there is no direct effect of SDO on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 10: there is direct positive effect of prejudice on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 11: There is no difference between men and women regarding the direction of the results.</i>	Corroborated
<i>Hypothesis 12: the model holds in different national settings.</i>	Corroborated

Table 14: overview of hypotheses corroborated/falsified in the Belgian study

2. Belgian study

In the Belgian study, 1300 questionnaires were completed by students from various universities in Belgium (Ghent University, University of Brussels, University of Hasselt, University College Ghent). The sample consisted of 852 girls and 448 boys. Age ranged from 17 to 71, with the mean age being 22 years old. A boxplot indicates that the vast majority of respondents is to be found in the category 17 to 25 (all quartiles, except for unusually old respondents in comparison to the bulk of respondents), thus constituting a more “typical” student sample than the one obtained in the Spanish study. Further, in the Belgian study, the sample consisted of a majority of master students (31.3%), followed by first bachelor students (22.1%), second bachelor students (16.3%), third bachelor students (15.9%), and doctoral students (6.8%). A portion of 7.6% of the respondents indicated other occupancies (e.g. being employed at the university in various positions not related to a specific trajectory). It also can be noted that the Belgian sample was more diverse in terms of the faculties that took part. Whereas the Spanish sample consisted of psychology, criminology, or law students, the Belgian example included students from the exact sciences and other alpha sciences as well, and a good balance existed among the various “families” of academia included in the sample. In the Belgian study, scales that slightly differed from the Spanish measurement scales (except for the signaling scales, as they are newly developed), were used. The reason for this is twofold. First, it is advisable to

use established translations of measurement scales. For this, the RWA, SDO and prejudice scales as they are often used in Belgium were opted for. Second, apart from measurement invariance, this approach can provide a certain advantage as it strengthens the test of the model. For, if the model would still stand when slightly different scales are used, this indicates that the effects observed are not due to a particular measurement instrument.

As the signaling scales are still in development, they were kept identical in both countries. Preliminary analysis of the data indicated measurement *variance* between both cultural contexts, so this will be discussed first. Then, the measurement model used to test the model is presented, followed by an exposition on the results.

2.1. Factorial variance between Spain and Belgium

When modeling using the same approach as the one used in the Spanish study, i.e. parceling the items into three parcels for each individual indicator, a covariance matrix that is not positive definite arose. The reasons for this problem to occur may be manifold, but the most likely reason it occurred in the Belgian sample is because it too few indicators (parcels) with a sufficient loading on the latent construct were included in the analysis. The specific construct that displayed this problem was the “quality signaling” construct, where one parcel had a low loading on the latent construct (i.e. $\beta = .26$), and one a near-zero loading ($\beta = .04$). The third indicator had an acceptable loading on the latent construct ($\beta = .45$). Obviously, then, there is no factorial invariance between the Belgian and the Spanish sample, which is exemplified by the results of a principal axis factoring procedure forcing all the items to load on one factor, reproduced in Table 15.

Item	loading
I want to be the best [Ik wil de beste zijn]	.25
Working in group gives me the opportunity to show my value as a person to others [In groep werken geeft me de gelegenheid mijn meerwaarde als persoon aan te tonen]	.67
I do a lot not to appear a loser with my friends [Ik doe er veel aan om niet als een loser over te komen bij anderen]	.21
In group activities I tend to take the lead if this helps my group to win [In groepsactiviteiten heb ik de neiging om de leiding te nemen als mijn groep op deze manier wint]	.42
The best part of working in a team is that it allows me to show my value as a person to others [Het beste aan in team werken, is dat ik op deze manier mijn waarde als persoon kan tonen aan de anderen]	.73

Table 15: factor loadings of the quality signaling scale in the Belgian sample. The principal axis factoring procedure in SPSS was used to generate the factor loadings.

From this table, it appears there are only three items that have a factor loading with a threshold above .40 on the latent construct, and that these preferably be used in order to remedy the problem. Using only these three indicators of the scale effectively remedies the problem of the not positive definite matrix, whilst still maintaining the minimum number of three indicators for this latent construct.

The reasons for this variance may be manifold. Whilst any retrospective interpretation of factorial variance, at least in my view, is tentative (inductive, which is dangerous enterprise), it is always interesting to explore possible reasons for it and to explore them in the further development of the measurement scales in order to create very consistent, cross-culturally valid measurement instruments. The study at hand is not the place, however, for a thorough comparative cultural study on Spain and Belgium, but a possible cause for the factorial invariance can be pointed out nonetheless⁸⁰.

One cultural difference that relates directly to the scales popped up immediately after seeing the two items that did not fit the picture well: *individualism*. When I was in Spain to conduct this research, it didn't take a long time to notice that people there did not at all seem individualist in nature; rather, they attach a great deal of importance to spending time with family and people in the streets. This seems a bit different in Belgium, where a lot more attention is given to individual achievement⁸¹. In this sense, it does not come as a surprise to see the three items referring to "groups" clustering together, and the two other items referring to individual prestige clustering together. It seems as if in Spain, individual achievement is assessed more in light of contributions to the group than in Belgium, where individual achievements seem to be considered to be a distinct category of achievement.

Thus, it seems that the two items are interpreted differently against a different cultural background. Whereas the item, say, "I want to be the best" is seen as signifying "I want to be the best team player" in Spain, it seems to be interpreted as signifying "I want to be the best/strongest individual" in Belgium. In this sense, it can be hypothesize that the individual achievement items in the Belgian context would fit the cheating scale better than the quality signaling scale. By means of a preliminary test, the two items were added to the cheating

⁸⁰ The possible reasons discussed here are based on my own impressions while I was in Spain in order to conduct the Spanish survey. They should therefore only be considered tentative explanations, and not scientific ones.

⁸¹ With this I am not saying that Belgians do not care about family, just that there are differences in the relative weight this has in both contexts.

signaling scale in Belgium – which probes selfishly oriented behavior or prosocial behavior to achieve one’s own goals – and the items fitted very well into that scale. Also, overall consistency rose to 0.69. Thus, even though this reasoning is not conclusive, it does say something about measurement variance across cultural contexts and how different meaning may be attributed to one single item.

To dwell on this topic for a moment, it seems difficult to presuppose strict measurement invariance in social sciences – except for blatantly clear cases such as “murder is wrong”. If measurement scales are intended to grasp vague concepts, one inherently runs the risk of contextual interpretation. Also, the kind of cultural element that will influence this process depends on the measurement used and the concept under study. For example, in the case above, it was most likely about a cultural difference in individualism. But, for other scales, it might well be materialism or any other construct that plays a role in how scales are affected. In my personal opinion, this need not be a problem. For even though many social scientists will forcefully oppose moving an item to a scale that measures a different concept across cultures, it is exactly the understanding of these cultural differences and how items resonate in different cultures that could justify this, if construed on the basis of sound theoretical deduction. That being said, items that do grasp the same latent construct in different contexts, if possible, are to be preferred, of course. Neither should such a procedure be based on mere impressions or mere statistical fit (as is the case above – for which reason the two items are discarded from the further study), but rather on sound theory and research.

2.2. Measurement and measurement model in the Belgian sample

In the Belgian sample, the same signaling scales as in the Spanish sample were used, with the exception of the two items in the quality signaling scale that are discarded, as discussed above. This way, the scale probing cheating signals consisted of the same 7 as in the Spanish sample ($\alpha = 0.64$), whereas the scale probing signaling of quality as a person consisted of 3 out of the original 5 items retained in the Spanish study ($\alpha = 0.61$). The scales measuring RWA, SDO and prejudice were obtained from the research group on social psychology at Ghent University. The RWA scale consisted of 11 items ($\alpha = 0.76$), the SDO scale consisted of 16 items ($\alpha = 0.92$), and the prejudice scale consisted of 14 items ($\alpha = 0.90$). In addition to the variation scale to assess bias motivated behaviors in the Spanish study, a frequency scale probing the incidence of these behaviors during the past 12 months was included as well, for exploratory purposes not to be discussed in this particular study. Also, the item probing murder was omitted, as this appeared to be a too strongly formulated item.

Just as in the Spanish study, the items were combined into three parcels for each latent variable to keep analysis manageable and to get strong indicators for the latent constructs. The entire measurement model is reproduced in Figure 5⁸². The fit indices of this measurement model are reproduced in Table 16.

<i>Fit Index</i>	<i>value</i>	<i>threshold</i>
χ^2	425.203	> 0.05
<i>p</i> -value	0.00	
RMSEA	0.06	< 0.08
SRMR	0.04	< 0.05
TLI	0.95	> 0.95
CFI	0.96	> 0.95
PCFI	0.73	Close to 1

Table 16: fit indices in the Belgian sample.

As can be inferred from Table 16, the measurement model is acceptable on all fit indices, with the usual exception of the chi-square statistic which is not reliable in large samples. Therefore, it can be concluded that the measurement model fits well with the data.

From Figure 5, it can be inferred that all indicators of the latent constructs have a sufficiently high loading on the latent constructs, with the one exception of the second indicator of quality signaling. As the indicators of quality signaling are just one item each, it is not possible to remedy this situation in any way. Taking into account the three legged rule, it was chosen to leave the indicator as it is, given that the fit indices indicate that the model fits well with the data. However, this does indicate that the quality signaling scale is in need of further development in future studies.

⁸² Again, the self-report items are omitted as they do not measure latent constructs and are constructed on the basis of binary variables.

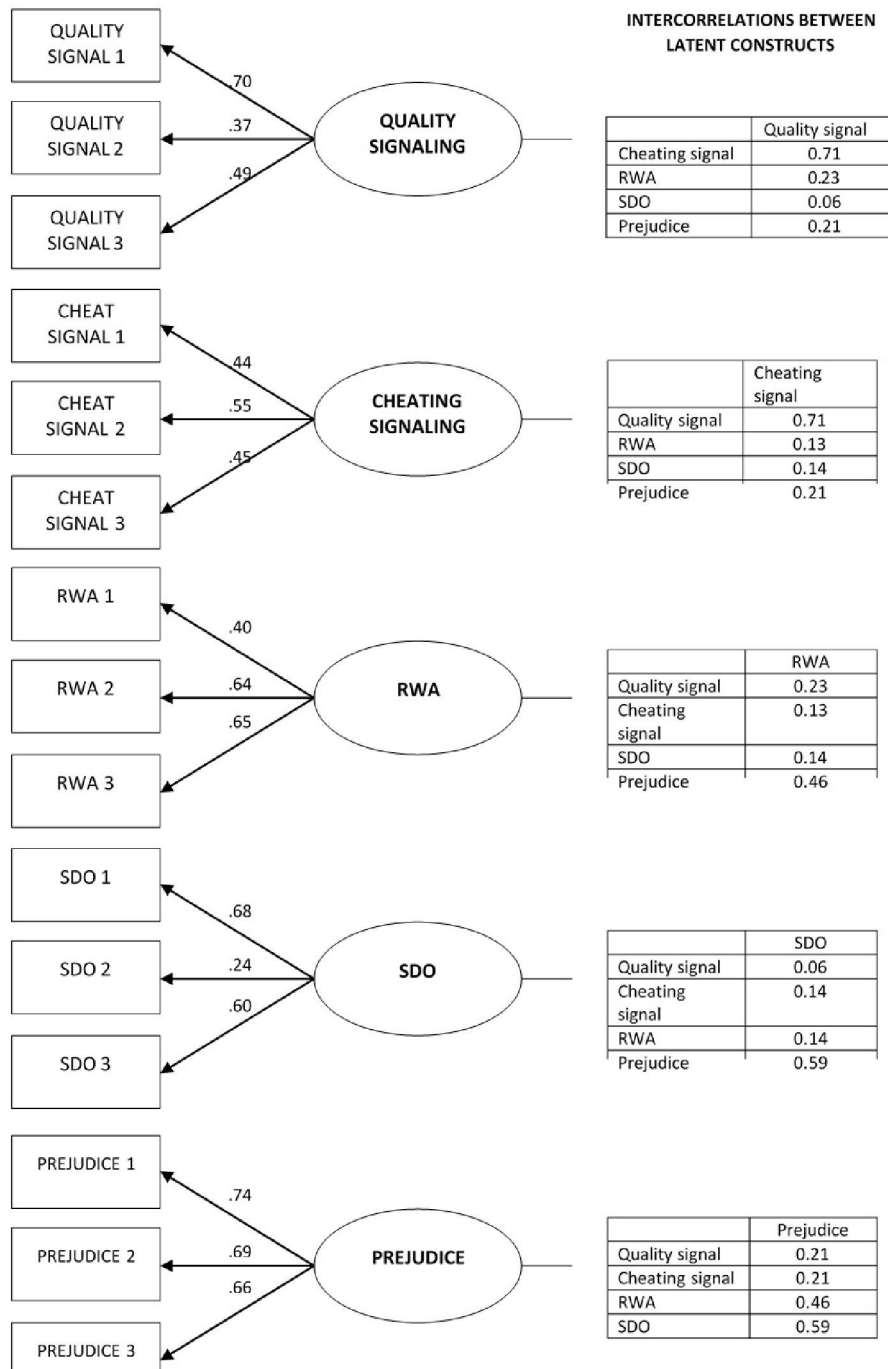


Figure 5: measurement model in the Belgian sample.

1.1. Results of the Belgian study

The structural equation model of the Belgian sample is reproduced in Figure 6.

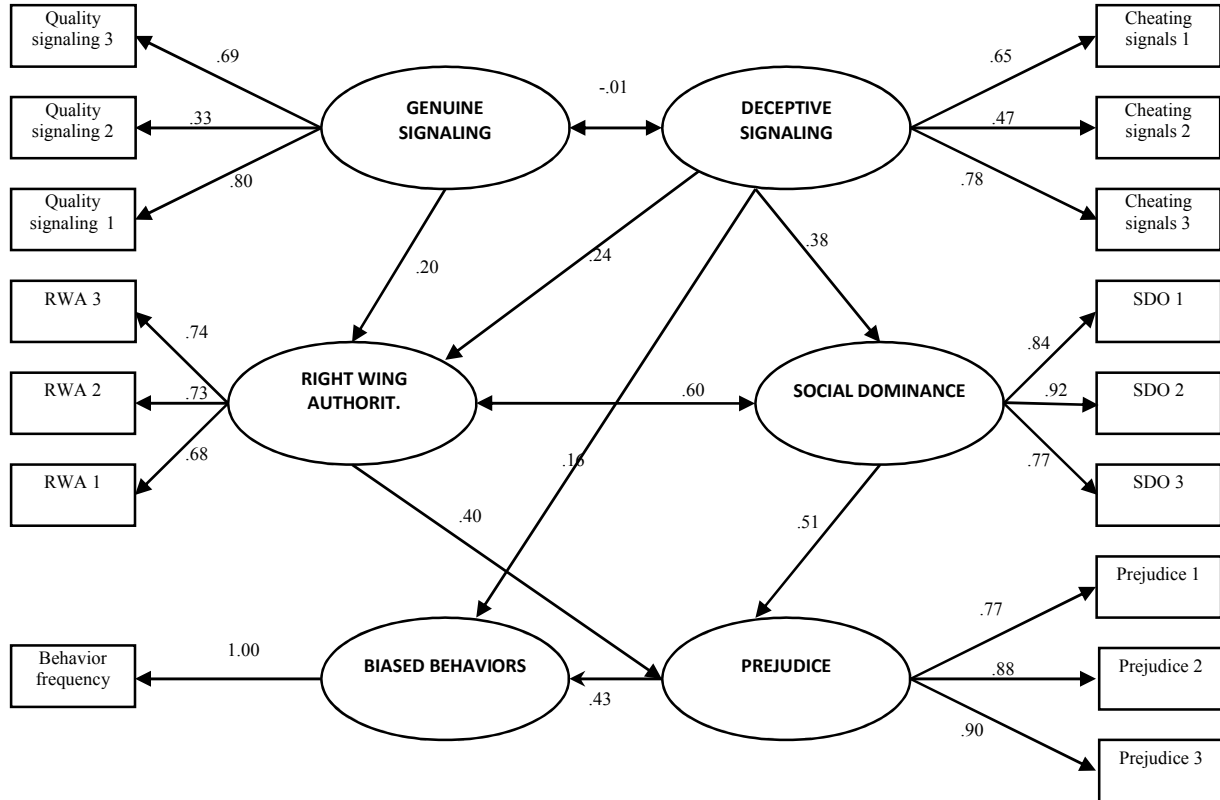


Figure 6: structural equation model in the Belgian study. For all coefficients, $p < 0.001$. Non-significant paths are omitted from the diagram.

Fit Index	value	threshold
χ^2	472.01	> 0.05
Df	97	
p -value	0.00	
RMSEA	0.05	< 0.08
SRMR	0.04	< 0.05
TLI	0.95	> 0.95
CFI	0.96	> 0.95
PCFI	0.77	Close to 1

Table 17: fit indices of the structural equation model in the Belgian sample.

The model in the Belgian sample fits well with the data, on all indices of model fit. Again, the exception is the chi-square statistic, which is usually significant in larger samples. In general, the same direct effects one would expect on the basis of the theoretical exposition are present

in the model. There is a positive direct effect of genuine signaling on RWA ($\beta = .20$, hypothesis 1a), and a positive direct effect of RWA on prejudice ($\beta = .40$, hypothesis 1b). In the model, there also is a clear direct and positive effect of deceptive signaling on SDO ($\beta = .37$, hypothesis 4a), and a clear direct and positive effect of SDO on prejudice ($\beta = 0.51$, hypothesis 4b). Significant positive direct effects also exist between RWA and prejudice ($\beta = .40$, hypothesis 1b), and SDO and prejudice ($\beta = .51$, hypothesis 4b). Similar to the Spanish sample, a direct positive effect of prejudice on bias motivated behaviors ($\beta = 0.45$, hypothesis 10) is present. This way, the direct effects at the core of this study (i.e. the direct effects the theory would predict), have been corroborated in the Belgian sample.

Similar to the Spanish study, a direct path between cheating signals or deceptively signaling one's commitment to the in-group and bias motivated behaviors emerges ($\beta = .16$, hypotheses 5 and 5b). This can be explained by virtue of the same logic as in the Spanish study: the primary concern of people inclined to signal their commitment to the in-group is self-oriented, which may incline them to exploit and exclude not only in-group members, but also out-group members.

There are some differences with the Spanish sample as well. First of all, there is no direct negative effect of RWA on prejudice in the Belgian sample. In this sense, the "protective effect" of RWA is absent in the Belgian sample. However, this does imply that hypothesis 8, which stated that there ought not to be a positive direct effect of RWA on prejudice, cannot be rejected. Also, as SDO does not have a significant direct effect on bias motivated behaviors, hypothesis 9 cannot be rejected either. Finally, there was no significant direct effect of deceptive signaling on prejudice, as was the case in the Spanish sample. This can be regarded as a falsification of hypothesis 5a, which stated that a positive direct effect exists between deceptive signaling of sociality and prejudice.

A final difference with the Spanish sample is the significant and positive direct effect of deceptive signaling on RWA in the Belgian sample ($\beta = .24$). This may be explained by the higher correlation between RWA and SDO in the Belgian sample compared to the Spanish sample. Thus, this finding falsifies hypothesis 7, which stated that there is no direct effect of deceptive signaling on RWA.

In order to further investigate the effects both modes of signaling may have on prejudice and bias motivated behaviors, the total indirect effects may be inspected. Table 19 presents the

decomposition of the effects of genuine signaling and deceptive signaling on both prejudice and bias motivated behaviors.

Endogenous variables	Causal variables (exogenous)					
	Genuine signaling			Deceptive signaling		
	Ust.	SE	St.	Ust.	SE	St.
Prejudice						
<i>Total effects</i>	.28	.07	.08**	.97	.03	.29*
<i>Direct effect</i>	---	---	---	---	---	---
<i>(Total) indirect effects</i>	.28	.07	0.08**	---	---	0.29*
Bias motivated behaviors						
<i>Total effects</i>	.02	.01	0.03**	.49	.10	0.29*
<i>Direct effect</i>	---	---	---	.28	.05	0.16**
<i>(Total) indirect effects</i>	.02	.01	0.03**	.21	.02	0.12**

Table 18: decomposition for effects of exogenous variables on prejudice and bias motivated behaviors in the Belgian sample. All reported effects are standardized estimates. *Ust.*, unstandardized; *St.*, standardized; * $p < 0.05$ **; $p < 0.01$; *** $p < 0.001$. Amos bootstrapping procedure was used to obtain estimates.

The picture is basically the same as in the Spanish sample. Again, there is a significant total effect of quality signaling and deceptive signaling on bias motivated behaviors, with the total effect of deceptive (.29) being more robust than that of genuine signaling (.03). Given that the only effect of genuine signaling on bias motivated behaviors is indirect, and given that only one path exists, i.e. *genuine signaling* \rightarrow *RWA* \rightarrow *prejudice* \rightarrow *bias motivated behaviors*, this can be regarded as corroborating evidence for hypothesis 1.

When the influence of deceptive signaling is further decomposed by inspecting its total indirect effect on bias motivated behaviors, it appears it does have a significant indirect effect on bias motivated behaviors (.12). Consequently, its overall direct effect (.16) outweighs its total indirect effects on bias motivated behaviors. Results from the regression based bootstrap procedure as developed by Preacher and Hayes (Hayes, 2013; Preacher & Hayes, 2008), which allows to estimate which particular mediated paths are significant, indicates that the path *deceptive signaling* \rightarrow *SDO* \rightarrow *prejudice* \rightarrow *bias motivated behaviors* is significant ($\beta = .07$; SE = 0.01; LLCI = 0.05; ULCI = 0.09; CI = .95)^{83,84}. All other possible mediated paths

⁸³ SE, bootstrap standard error; LLCI, lower limit of the bootstrap confidence interval; ULCI, upper level of the bootstrap confidence interval. Bootstrapping was set at 10000.

⁸⁴ In principle, applying this procedure to genuine signaling is not necessary, as there only is an indirect effect, and only one path leading from genuine signaling to bias motivated behaviors. However, the regression based analysis points into the same direction, i.e. a significant but small mediated effect ($\beta = .01$; SE = 0.004; LLCI = 0.01; ULCI = 0.02; CI = .95). This corroborates hypothesis 1.

originating in deceptive signaling of sociality displayed in the model are not significant using this procedure. Even though the indirect effect of this path is rather small, this finding supports hypothesis 4, which predicted this particular path to exist, thus providing corroborating evidence for hypothesis 4.

1.2. Group comparison based on sex

In order to compare both sexes, the same Jöreskog inspired stepwise comparison approach was followed, as was done in the Spanish sample. When comparing both groups in terms of measurement and structural models, it appears the two groups are equivalent both in terms of measurement weights and structural weights. The results are displayed in Table 19⁸⁵.

Model	Comparative model	Df.	χ^2	<i>p</i>
All factor loadings constrained (Model 1)	Unconstrained	10	9.31	.50
All path coefficients constrained	Model 1	6	3.47	.75

Table 19: group comparison based on sex in the Belgian sample.

Whilst this test of equivalence – the proper group comparison procedure of Jöreskog – is to be preferred over the “fast way” using z-scores, as the latter is only computed on the unconstrained model, it may nevertheless be interesting to see whether or not z-scores differ across groups in the unconstrained model. Every possible test may yield interesting information with regard to the model under scrutiny. In other words, the additional test with z-scores is intended to *challenge* the model equivalence between both sexes (and is an often used procedure). The results of the pairwise comparison of parameters is presented in Table 20.

<i>Group comparison men-women</i>			
	Full M	Full F	z-score
Quality → RWA	.11	.24	2.82
Cheating → SDO	.39	.31	-1.13
Cheating → RWA	.31	.19	-1.47
RWA → prejudice	.39	.40	-0.23
SDO → prejudice	.57	.47	-1.93
Prejudice → behaviors	.43	.48	2.03
Cheating → behaviors	.30	.08	-3.20

Table 20: group comparison based on gender using z-scores in the Belgian sample. Scores apply to the unconstrained model only.

⁸⁵ It might be interesting to note that both the measurement residuals and structural residuals are equivalent across both sexes as well.

This approach indeed challenges the equivalence across genders, be it in a more “superficial” way. Two coefficients are non-equivalent across both sexes when all other parameters are left unconstrained. The first is the coefficient between quality signaling and RWA ($z = 2.82 > |1.96|$). This means the coefficient for women is significantly larger than that of men. In other words, these results suggest that the relationship between quality signaling and RWA is a predominantly female affair, at least in the Belgian sample. As both coefficients are positive and significant, however, this does not affect the theory.

The second coefficient with a significantly differing value for men and women according to the z-scores is the coefficient of the path from prejudice to bias motivated behaviors ($z = 2.03 > |1.96|$). The coefficient there is stronger for women compared to men. Another difference between the sexes is the direct effect of deceptive signaling on bias motivated behaviors, which is smaller for women compared to men ($z = -3.20 > |1.96|$). This indicates that men higher in deceptive signaling tend to be more directly prone to bias motivated behaviors, without any intervening variable being required. Taken together, the results support hypothesis 11, as there are only differences in strength of the effects, not in the direction thereof.

1.3. Intermediary conclusion on the Belgian study

Even though measurement invariance was a little bit of an issue regarding the two signaling scales, at least this exercise does point out which items can be regarded as the core items of the genuine signaling of pro-sociality scale, which may, in turn, provide for a solid basis to further develop the scales in future research. As it was possible to retain three items, the study could proceed in a similar fashion to the Spanish study, be it that one factor loading was below the usual threshold of .04. It was kept in the study, however, in order to guarantee a minimum of three indicators per latent construct.

Apart from these “measurement perils”, it appeared that vastly similar results were produced in the Belgian sample compared to the Spanish sample. Most importantly, the same base model was present insofar as the theoretically expected paths (i.e. hypotheses 1 and 4) were upheld in both contexts, despite differing measurement of genuine signaling of pro-sociality. Again, other paths were looked for in order to push the model to its boundaries, and similarly to the Spanish sample, a direct path between deceptive signaling of pro-sociality and bias motivated behaviors emerged. Different from the Spanish sample was the path between deceptive signaling and RWA, which did improve variance explained at both RWA and SDO, most likely due to the

larger covariance of both ideological attitudes in the Belgian sample compared to the Spanish sample.

When comparing men and women, it has been shown that both groups are generally invariant with regards to both the measurement model and the structural model, and no differences in the direction of the results could be found, which provides corroborating evidence of the evolutionary logic underpinning the current study. To summarize, the hypotheses of the study are presented in Table 21 where it is indicated whether they are corroborated or falsified. In the Belgian study, two hypotheses that had been intended to push prediction to its limits have been falsified. The first is hypothesis 5a, stating that there is a direct effect of deceptive signaling of pro-sociality on prejudice. This was not the case in the Belgian sample, where mediation through prejudice was a less important feature for people high in SDO. The second hypothesis that can be rejected is hypothesis 7, stating that there is no direct effect between deceptive signaling of pro-sociality and RWA. This hypothesis intended to make explicit the two strictly different paths predicted by the theory. Given the high correlation between SDO and RWA, however, the two have become confounded to a certain extent. Most importantly, the two hypotheses that are falsified, are additional tests of the model, and are not part of the core hypotheses predicted by the theory (being hypotheses 1 and 4).

<i>Hypothesis 1: there is a significant positive indirect effect of genuine signaling of sociality on bias motivated behaviors, which runs through RWA and prejudice.</i>	Corroborated
<i>Hypothesis 1a: there is a significant, positive direct effect of genuine signaling of pro-sociality on RWA.</i>	corroborated
<i>Hypothesis 1b: there is a significant, positive direct effect of RWA on prejudice.</i>	Corroborated
<i>Hypothesis 2: there is no significant direct effect of genuine signaling of pro-sociality on prejudice.</i>	Corroborated
<i>Hypothesis 3: there is no direct effect of genuine signaling of pro-sociality on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 4: there is a positive indirect effect of deceptive signaling of pro-sociality on bias motivated behaviors, which runs through SDO and prejudice.</i>	Corroborated
<i>Hypothesis 4a: there is a positive direct effect of deceptive signaling on SDO.</i>	Corroborated

<i>Hypothesis 4b: there is a positive direct effect of SDO on prejudice.</i>	Corroborated
<i>Hypothesis 5: the mediation effect is weaker in cases of deceptive signaling of pro-sociality compared to genuine signaling of pro-sociality.</i>	Corroborated
<i>Hypothesis 5a: there is a positive direct effect of deceptive signaling of pro-sociality on prejudice.</i>	Falsified
<i>Hypothesis 5b: there is a positive direct effect of deceptive signaling of pro-sociality on bias motivated aggression.</i>	Corroborated
<i>Hypothesis 6: there is no direct effect of genuine signaling of pro-sociality on SDO.</i>	Corroborated
<i>Hypothesis 7: there is no direct effect of deceptive signaling of pro-sociality on RWA.</i>	Falsified
<i>Hypothesis 8: There is no direct positive effect of RWA on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 9: there is no direct effect of SDO on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 10: there is direct, positive effect of prejudice on bias motivated behaviors.</i>	Corroborated
<i>Hypothesis 11: There is no difference between men and women regarding the direction of the results.</i>	Corroborated
<i>Hypothesis 12: the model holds in different national settings.</i>	Corroborated

Table 21: overview of hypotheses corroborated/falsified in the Belgian study.

2. Group comparison across countries

In this section, testing of the theory will be taken one step further. In the previous sections, partial equivalence across sexes has been demonstrated, which provides support for the evolutionary framework this study is based on. A further test, however, is to compare the model across countries. As a first impression, the same mediated paths are present in both countries in which the survey is conducted. It remains to be seen, however, how much the model is identical in these two rather different nations. Is measurement of the latent constructs equivalent across contexts? If so, is the structural model equivalent? If measurement is not equivalent, does the structural model still hold despite these differences in measurement? These are the questions

that put the model through one more severe test, which will allow to establish the boundaries thereof. In other words, it will be tested in order to challenge it once more.

2.1. Measurement and measurement model

Given the fact country specific adaptations of the measurement scales were used, an important decision to make relates to the indicators to be used in the model. In line with the three legged rule, the three indicators that best coincide from a linguistic point of view (i.e. which are quasi literal translations) were selected as indicators for the latent constructs. For quality signaling, as indicated earlier, only three indicators were retained in the Belgian study, so there the problem is resolved by circumstance.

This is a good test, as measurement will differ from measurement in both previous studies. If the model still holds *despite* these different operationalizations, this can only indicate the model is quite robust and insensitive to specific operationalizations. Finally, only the strict moderation model is under consideration here, for two reasons. First, this is a more severe test of what would be strictly expected from a theoretical point of view. Second, differences in the country specific models exist, and these paths would have to be set to zero in the sample where they are not present when data files are merged anyway (then one would be dealing with a partial test of equivalence). The full measurement model is presented in Figure 7.

The measurement model thus obtained fits well with the data across both groups, as appears from Table 22 where all fit indices are within acceptable range, with the exception of TLI which is rather low.

<i>Fit Index</i>	<i>value</i>	<i>threshold</i>
χ^2	472.87	> 0.05
<i>p</i> -value	0.00	
RMSEA	0.03	< 0.08
SRMR	0.04	< 0.05
TLI	0.94	> 0.95
CFI	0.95	> 0.95
PCFI	0.73	Close to 1

Table 22: fit indices of the measurement model across both countries

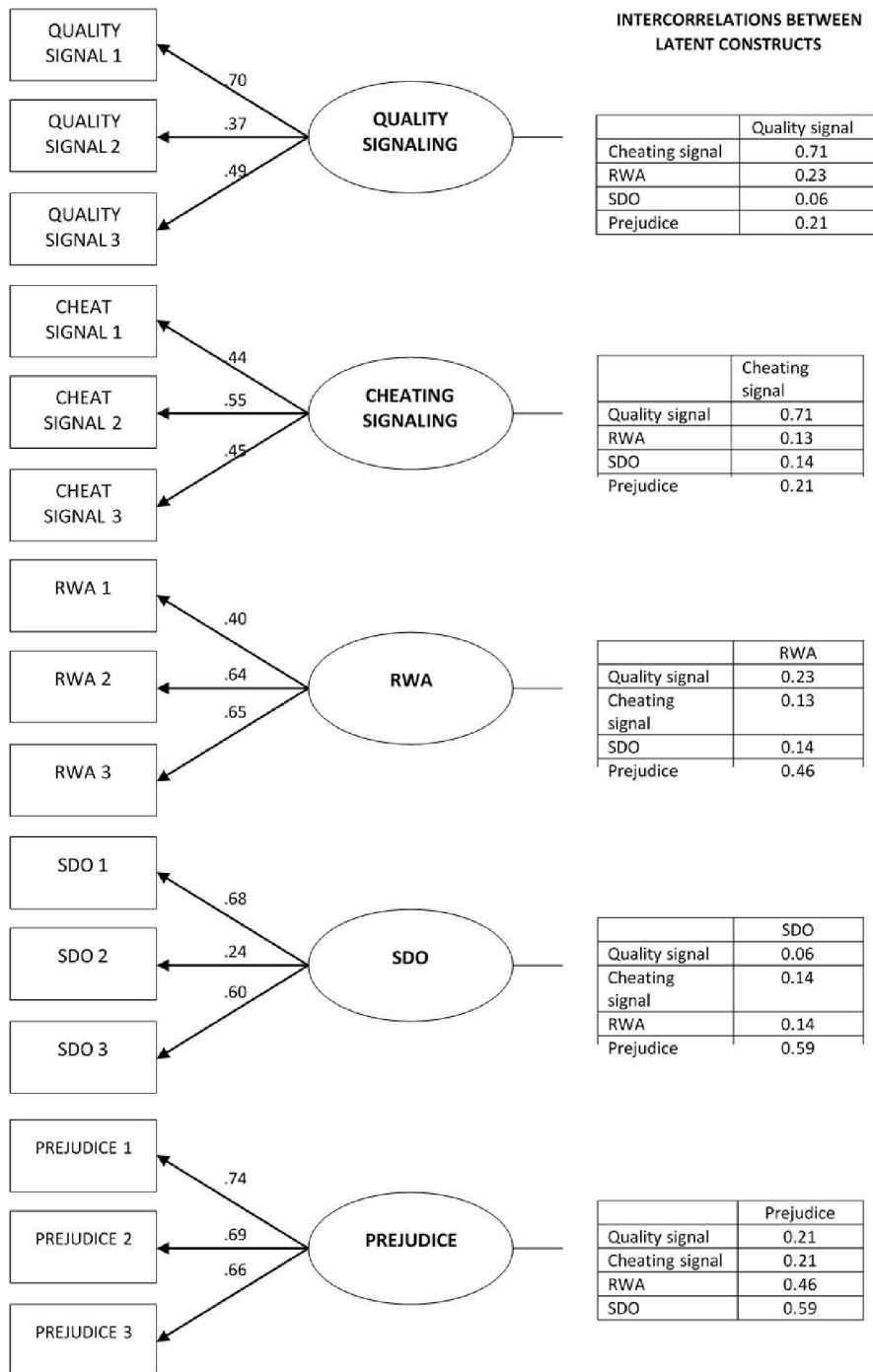


Figure 7: measurement model in the comparative sample.

2.2. Results and comparison across countries

The overall model obtained fits relatively well with the data, as appears from the fit indices which are reproduced in Table 23. Whilst RMSEA has a great score, SRMR, TLI, CFI and PCFI are a bit on the border of representing a good fit. This can be expected, however, taking

into account the selection of the variables, which had to be done in a relatively pragmatic way, due to translation issues.

<i>Fit Index</i>	<i>value</i>	<i>threshold</i>
χ^2	619.93	> 0.05
Df	196	
<i>p</i> -value	0.00	
RMSEA	0.03	< 0.08
SRMR	0.05	< 0.05
TLI	0.93	> 0.95
CFI	0.94	> 0.95
PCFI	0.77	Close to 1

Table 23: fit indices of the comparative study

The model is visually represented in Figure 6. As appears, largely the same results (regarding sign and direction of the paths) are obtained compared to the individual samples derived from each country. Both mediated and theoretically expected paths emerge in the group comparison across countries, which provides further corroborating evidence for the theory under scrutiny in this study. Let us now inspect, in a piecemeal fashion, the extent to which the model is identical across context, in both a factorial and structural way.

When applying the same stepwise procedure as with the group comparisons based on sex, the following image emerges. It is immediately clear that the measurement model is not equivalent across contexts, and this is the case for *every* indicator, as can be inferred from Table 24.

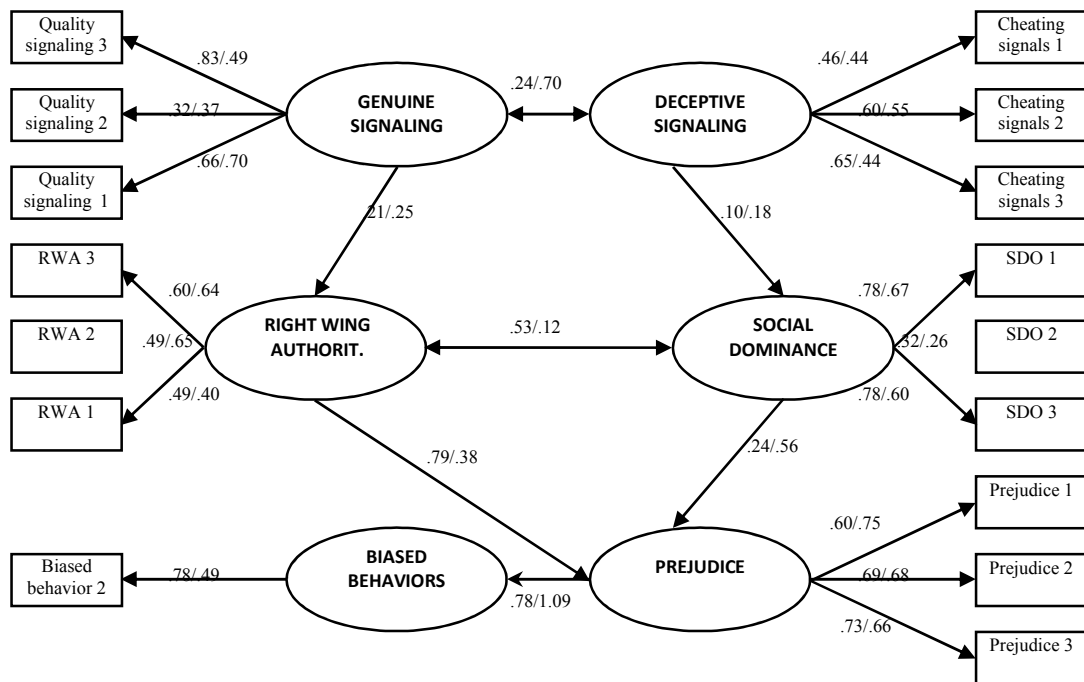


Figure 8: model rendered by the group comparison between countries. In the diagram, all values on the left are the values for the Belgian sample, and values on the right are those of the Spanish sample. For all coefficients $p < 0.001$, except for the coefficient cheating deceptive signaling - social dominance, with $p < 0.05$ in the Spanish subsample.

Model	Comparative model	Df	χ^2	p
All factor loadings constrained	Unconstrained model (Model 1)	10	137.41	0.00
Model 1 with factor loadings on genuine signaling constrained	Model 1	2	21.24	0.00
Model 1 with factor loading of parcel 2 on quality signaling constrained	Model 1	1	12.54	0.00
Model 1 with factor loading of parcel 3 on quality signaling constrained	Model 1	1	17.53	0.00
Model 1 with factor loadings on deceptive signaling constrained	Model 1	2	13.43	0.00
Model 1 with factor loading of parcel 2 on deceptive signaling constrained	Model 1	1	8.81	0.00
Model 1 with factor loading of parcel 3 on deceptive signaling constrained	Model 1	1	10.21	0.00
Model 1 with factor loadings on RWA constrained	Model 1	2	36.19	0.00
Model 1 with factor loading of parcel 2 on RWA constrained	Model 1	1	34.07	0.00
Model 1 with factor loading of parcel 3 on RWA constrained	Model 1	1	24.29	0.00
Model 1 with factor loadings on SDO constrained	Model 1	2	17.95	0.00
Model 1 with factor loading of parcel 2 on SDO constrained	Model 1	1	7.97	0.00
Model 1 with factor loading of parcel 3 on SDO constrained	Model 1	1	4.18	0.04
Model 1 with factor loadings on prejudice constrained	Model 1	2	260.01	0.00
Model 1 with factor loading of parcel 2 on prejudice constrained	Model 1	1	4.18	0.04
Model 1 with factor loading of parcel 3 on prejudice constrained	Model 1	1	21.75	0.00

Table 24: measurement models for comparative study.

In a second step, the structural weights were compared across national groups, whilst the factor loadings were set to vary freely (as there is no measurement equivalence across contexts). This yields a mixed picture, in which a part of the model is equivalent whilst another part is not. The results of this exercise are displayed in Table 25. The equivalent part contains the coefficients accompanying the paths quality signaling – RWA, deceptive signaling – SDO, and RWA – Prejudice. The non-equivalent portion of the model contains the coefficients of the paths SDO – prejudice and prejudice – bias motivated aggression.

Model	Comparative model	Df.	χ^2	<i>p</i>
All structural weights constrained	Unconstrained model (Model 1)	5	154.67	.021
Model 1 with coefficient 1 constrained	Model 1	1	0.55	.46
Model 1 with coefficients 1 and 2 constrained	Model 1 with coefficient 1 constrained	1	0.33	.57
Model 1 with coefficients 1, 2 and 3 constrained	Model 1 with coefficients 1 and 2 constrained	1	0.11	.75
Model 1 with coefficients 1, 2, 3 and 4 constrained	Model 1 with coefficients 1, 2 and 3 constrained	1	139.40	.00
Model 1 with coefficients 1, 2, 3, and 5 constrained	Model 1 with coefficients 1, 2 and 3 constrained	1	25.48	.00

Coefficient guide:

- 1: genuine signaling → RWA
- 2: deceptive signaling → SDO
- 3: RWA → prejudice
- 4: SDO → prejudice
- 5: prejudice → bias motivated behaviors

Table 25: structural models in the comparison between countries.

Inspection of the z-values of the critical ratio's for difference with regard to the unconstrained model renders the same image. From Table 26 it can be inferred that differences exist between both countries in terms of the coefficients accompanying the paths *SDO* → *prejudice* (z-score = 9,23 > |1,96|) and *prejudice* → *bias motivated behaviors* (z-score = -4,77 > |1,96|). Inspection of the coefficients shows that all coefficients are significant in both countries, but that the coefficient of the path *SDO* → *prejudice* is significantly larger in the Spanish sample (.56) compared to the Belgian sample (.24), and the coefficient accompanying the path *prejudice* → *bias motivated behaviors* is significantly larger in the Spanish sample (1.09)⁸⁶ compared to the Belgian sample (.78).

⁸⁶ Note that the coefficient is larger than 1. This is often assumed to indicate a problem in the data, but, as Jöreskog (1999) discusses, this is not always problematic, given that a path coefficient, which in essence is a regression weight and not a correlation, can be larger than 1. To make sure there is no problem in the data, multicollinearity was checked for by running a correlation table and checking the tolerance and variance inflation factor in linear regression. Neither of those procedures revealed a problem with multicollinearity.

	<i>Group comparison country</i>		
	Spain	Belgium	z-score
Quality → RWA	.25	.21	.73
Cheating → SDO	.18	.10	.64
RWA → prejudice	.38	.79	.09
SDO → prejudice	.56	.24	9.23
Prejudice → aggression	1.09	.78	-4.77

Table 26: comparison of coefficients across countries based on z-scores in the unconstrained model

To conclude this section, it can be said that notwithstanding differences in measurement – i.e. the measurement tools operate differently in both national contexts – the paths theoretically expected still hold across both countries, and it fits very well with the data. Whereas some differences do exist between both countries with regard to the size of two path coefficients, results do go in the same direction in both countries, and the very same paths of the strict theoretical model hold in both contexts. Furthermore, the differences that do exist, are not to be located in the “evolutionary part” of the model, i.c. the paths between both forms of signaling and the ideological attitudes RWA and SDO, but in the “social psychological part” of the model. This indicates that the evolutionary logic underpinning the model is sound, as there is no difference between coefficients between both countries. That differences exist in the social psychological part is to be expected, given cultural variation across both countries that may account for these differences. That is, even though the evolutionary origins of the behaviors may be the same, cultural evolution and horizontal transmission mechanisms may impact upon the concrete size of the coefficients in the social psychological part of the model.

3. Conclusion

In this chapter, the results of three studies intended to test the theoretical model with regard to the evolutionary roots of contemporary manifestations of prejudice have been reported. In general, the theoretical model was upheld in both studies. In both studies, a glimpse of the pro-social roots of prejudice can be seen: in both there are significant paths between quality signaling and RWA, cheating signaling and SDO, which in turn are connected to prejudice, and prejudice to bias motivated behaviors. The significant total effects of both signaling measures on bias motivated aggression confirm the cross-cultural validity of the model tested.

Even though differences exist between both contexts where the study was conducted, they are not of a nature to reject any of the hypotheses in the study. For, the direction of the results is

An additional check for anomalies in the data did not yield any result. Therefore, it can be assumed there is no problem with the data.

the same in both samples. As discussed earlier, differences in sizes of effects are absolutely permissible when testing evolutionary hypotheses. However, if the nature of the relationships would differ (e.g. a positive effect in sample A and a negative effect in sample B), the evolutionary origin of the hypothesis tested ought to be rejected. This is clearly not the case, however, in the current study.

In addition to the theoretical model, paths between cheating signals and bias motivated aggression, cheating signals and prejudice, can be found. The direct path between cheating signals and prejudice can in principle be due to measurement, as both are measures that probe certain behaviors rather than attitudes. However, testing for this, CFA points out that both constructs are nicely separable statistically speaking, ruling out the possibility that this is a statistical artifact. This way, both the direct paths between deceptive signaling and prejudice and bias motivated aggression are more than what was theoretically expected, strengthening the overall study.

Basically the same holds for the small negative, but significant relationship between RWA and bias motivated aggression found in the Spanish sample. Rather than disconfirming an evolutionary hypothesis, it provides support for it. In this sense, RWA reflects a need for stability and in-group cohesion, which results in rule-abiding behaviors. In our contemporary society, however, non-discrimination and non-violence have become predominant norms, by which people high in RWA presumably abide as well. Without the specific targeting/neutralizing mechanism of prejudice, then, these norms should not be breached. It exactly is the way in which prejudice is conceived of in this study, that allows for a breach of these norms: it puts the target group outside of the “expanding circle” of empathy, and thus excludes them from the field of application of those norms. As this particular relationship was not found in the Belgian sample, it can only be regarded as evidence in the sideline, however.

As an additional test, a multiple group comparison was conducted to detect any differences between sexes in the results. The reasoning is that human in-group sociality, among other things, was an essential element in the formation of our species, and that for this reason a domain specific cognitive module evolved to solve problems related to dangers or competition presented by out-groups or out-group members. Given the fundamental importance of such a module for all members of a species, fundamental differences between men and women should be nonexistent. At the very least, results need to point into the same direction. In the Spanish study no significant differences were found, and in the Belgian sample three significant

differences, at least in terms of z-scores in the unconstrained model, were found: the path coefficient of *quality signaling* → *RWA* is stronger for women, the coefficient of the path *prejudice* → *bias motivated behaviors* is stronger for women, and the coefficient of the path *deceptive signaling* → *prejudice* is stronger for men. Given the fact that the direction of the results remains unaltered, i.e. the sign of the coefficients is the same, and that both paths have a significant coefficient, this cannot be regarded as a refutation of the base model that was tested.

To conclude, it can be safely stated that the base model developed in this study is corroborated in both samples. Of course, there are also some limitations to the current study. These will be considered in the general discussion.

Chapter VII. General discussion

In the previous chapters, the evolutionary backdrop of contemporary manifestations of prejudice have been theorized and tested. As appeared from the results of the empirical studies, the theoretically expected model holds in two different contexts, which gives it a certain degree of robustness. However, what does all this mean, then? To appreciate the results of the previous chapter, it is necessary to evaluate the theory from a logical-philosophical point of view, to clearly indicate the weaknesses of the study and how these weaknesses may be translated into further research initiatives, to draw some links with other research areas where the theory might be applicable in a fruitful way, and, finally, to indicate some policy relevant issues that may be uncovered by the theory at hand.

1. Logical evaluation of the theory

As indicated in the introductory part to this study, a critical-rationalist evaluation of theory in comparison to other theories mainly relies on its *empirical content* in comparison to other theories. That is, the more a theory says about reality, in the sense that it forbids more, the larger its class of potential falsifiers is.⁸⁷ This implies that the higher a theory's empirical content is, the better it is testable or susceptible to falsification, a key element in critical rationalism. Even though empirical content is not the same as logical content⁸⁸, Popper shows that as the empirical content of a theory increases, so does its logical content (2002 [1959], p. 103-105). It is the latter that will be used in order to evaluate the theory, as it allows to base such an evaluation on deducibility relationships, levels of universality and degrees of precision of the theory. Even though this is not an exact undertaking in the sense of cardinality, a good way to go about this is by means of subclass relationships (Popper, 1959 [2002], p. 98).

Let us now consider the subclass relationships between the theories discussed in this study. The main theory used is the dual process model of Duckitt et al (2001), incorporating theories of Right Wing Authoritarianism, Social Dominance Orientation and applying those to the

⁸⁷ Empirical content is not to be confused with the number of positive statements a theory posits. For a theory that say everything about reality in this sense is a tautology and cannot be refuted by any means. With "positive statements", I mean non-prohibitory statements in the sense of forbidding certain outcomes. Unfortunately, contemporary social science does not approach theories often in this way, and, as a consequence, remains largely inductive or at least verificationist/confirmationist in nature, whatever the efforts researchers put in the theoretical grounding of their claims may be.

⁸⁸ i.e. the class of non-tautological statements derivable from the statement under scrutiny as opposed to

ideological concept of prejudice. Apart from this, an evolutionary complement to these theories has been elaborated and tested in this study. Of course, a certain degree of abstraction is necessary to show this – logic is abstract reasoning. For the purpose of this exercise, let us consider two variables, prejudice and bias motivated behaviors (the intermediary outcomes in the model), and two predicates, expressions of sociality and expressions of dangerous or competitive worldviews. For the sake of clarity of the reasoning, both forms of signaling (deceptive and genuine) are collapsed into one, as are the two ideologies of RWA and SDO. Logically speaking, however, they can be considered to be subclasses in their own right of the sets “expressions of sociality” and “expressions of threatening and competitive worldviews. Further, only the strict mediation model is under consideration here. Consider the following four statements, following Popper but applied to the current study:

P: all prejudice is an instance of the evolution of human sociality.

Q: all bias motivated aggression is an instance of the evolution of human sociality.

r: all prejudice is an expression of a competitive/dangerous worldview.

s: all bias motivated behaviors are an expression of a competitive/dangerous worldview

Now, moving from *P* to *Q*, the level of universality decreases, as bias motivated aggression forms a subclass of prejudice. Even though this may be contested by pointing out the difference between an attitude and a behavior, the strict mediation model depicts prejudice as a necessary condition of bias motivated behaviors. Thus, what this subclass relation states is that all forms of bias motivated behaviors are an integral part of prejudice, but not vice versa. This corresponds to the intuitive difference between attitudes and behaviors motivated by them. For the purpose of evaluation of the theory, it follows that when statement *P* is falsified, statement *Q* is automatically falsified as well. This also means that statement *P* says more about reality than does statement *Q*.

Moving from *P* to *r*, the precision of the statements (the predicates) decreases. This is so, because the dangerous and competitive worldviews are in themselves a result of the evolution of human sociality: people are susceptible to these worldviews as they have been constitutive in our evolutionary past, and people may share them through transmission mechanisms. However, the evolution of human sociality also gave rise to entirely different ideologies, such as those of tolerance and non-violence. Therefore, the dangerous/competitive worldviews can be considered a subclass of the evolution of human sociality. It follows that, when the evolution

of human sociality is falsified, so are the ideologies, but not vice versa. Therefore, statement P is more precise than statement r in terms of predicate.

Now let us compare the theory set out in this study to the fields of study it has drawn upon. Thus, it needs to be assessed in light of theorizing on both prejudice and bias motivated aggression – two fields of study that are generally quite separated from one another. First, with regard to the study of bias motivated aggression, the theory set out in this study has clearly linked it with the field of prejudice by depicting bias motivated aggression as a subclass of prejudice. This clear theoretical link provides the theory with a higher degree of universality with regard to bias motivated aggression. As said before, however, it would be overly enthusiastic to claim this is the only study which draws this link, and often such a link is implicitly present in theorizing on, for example, hate crime. For this reason I deem it safer to say that the theory developed in this study has a *higher or at least identical* degree of universality. With regard to prejudice, it can be claimed that prejudice is a proper subclass of parochial altruism, in itself a proper subclass of human sociality. Put differently, if the theory on the evolution of human sociality is falsified, so is the consequence thereof, i.e. prejudice (as operationalized here). Therefore, it can be said that the theory is of a higher degree of universality as its competing theories.

The most obvious merits of this study, however, are in the *degrees of precision*. For both prejudice and bias motivated aggression, the current study has a higher degree of precision. In this sense, a move from P to r as well as from Q to s implies a decrease of the precision of the statement, given that the dangerous/competitive worldviews are a proper subclass of the evolution of human sociality. If the latter is falsified, so is the former, but not vice versa. By the same token, a move from P to s implies a decrease in universality as well as precision of the statements. Put differently, statement s is fully derivable from statement P. Even though this reasoning is quite abstract and takes away a lot of the *précis* of the theory, it does allow for an evaluation of the theory in comparison to other theories. As indicated in the introduction of this study, most current studies on prejudice and derived phenomena such as hate crime, focus on quite specific instances thereof. Intuitively, it can be easily seen that the theory developed in the current study unifies – or at least allows to do so – these various and more specific accounts of prejudice and bias motivated aggression in the overarching theoretical framework of evolutionary theory. As prejudice and bias motivated behaviors are just one possible instance of the evolution of human sociality, it ought to be clear that the theory explains more than do most current studies on prejudice.

To summarize, the merits of the theory as it stands now are presented in the brief overview below.

	Level of universality	Degree of precision
Theorizing on prejudice	Higher	Higher
Theorizing on bias motivated behaviors	Higher	Higher

Table 27: merits of the theory from a logical point of view

This way, in its core, the theory developed in this study can be regarded to perform well in terms of both levels of universality and degrees of precision. Even though abstraction has been made from the theoretical précis of the study in order to clearly indicate the theory’s performance, the logic set out in this section can be easily extended to include more variables and predicates by means of simple logical transformations. For example, take the predicate “instance of coalitional computation”, a central element in the current study. Let the basic statement a be “all forms of prejudice are instances of coalitional computation” and let basic statement b be “all forms of bias motivated behaviors are instances of coalitional computation. the latter is fully derivable from the former, and the earlier mentioned statements r and s are derivable from statements a and b respectively. In turn, statements a and b are derivable from statements P and Q above. This way, the logic can be extended to include a great variety of elements, through the subclass relationship: bias motivated behaviors are a subclass of prejudice, which is in turn a subclass of the ideologies RWA and SDO; which are in turn a subclass of coalitional computation, which is, finally, a subclass of human sociality.⁸⁹

Another way to compare theories in respect of their degree of testability is the notion of *simplicity*.⁹⁰ Popper’s notion of logical simplicity (2002 [1959], sect. 41-46) is akin to his conception of levels of universality, but allows – at least in my opinion – to hold a more intuitive discussion on the merits of a theory. Simplicity in this sense, as opposed to “elegance” or any

⁸⁹ By the same token, the logic can be extended to include deceptive signaling and genuine signaling of sociality (subclasses of human sociality), and RWA and SDO specifically. In such a case new concepts would need to be introduced to discern between the types of prejudice represented by the two paths present in the diagram.

⁹⁰ In itself a derivate from the dimensionality of a theory, or the number of parameters needed in order to obtain a potentially falsifying statement, i.e. the conjunction of initial conditions and the negation of the predicate.

other pragmatic rule such as Ockham's razor⁹¹, is logical insofar as it can be considered to be based on the *dimensionality* of theories (i.e. the number of parameters necessary in order to create a potential falsifier) and the subclass relationship between various statements. This way, simplicity refers to the fact that a number of statements may be subsumed under a more general statement, with a lower degree of dimensionality and thus one of greater testability.

Applying this notion to the current theory, it can be said that the ideological attitudes RWA, SDO and prejudice as well as bias motivated behaviors are unified under this theory, thus bringing together statements which are often, or at least have been, regarded as independent to a certain degree, of each other. Furthermore, it is possible to show that the unification potential of the theory is certainly not limited to the theories tested in this study. As this unification potential is not tested de facto, what follows in the following paragraphs are just conjectures which ought not to be interpreted as corroborated in any sense, rather as highly plausible candidates for unification from a strictly theoretical point of view.

As indicated in the introduction, one aim of this study was to provide a framework in which various theories on a variety of "-isms" can be brought together (unified). Many theories exist that depict certain instances of the coalitional computation discussed in the evolution of human sociality, and which appeared to be of essential importance in the prediction of prejudice. A central element in this particular context is the existence of threatening out-groups, either in the sense of competition or danger. This way, a mechanism was developed which may eventually lead to bias motivated behaviors. From the point of view of simplicity it is important to note that this mechanism is of a more universal nature than, say, a theory on "anti-black prejudice in the United States".⁹² The same holds for other specific theories on instances of prejudice or bias motivated aggression which can all be subsumed under the general mechanism of coalitional computation.⁹³

⁹¹ Which is in principle not compatible with Popper's account of scientific progress, as it implies that if one observes 1000 white swans, the most parsimonious law to be derived from this is that all swans are white. It is at the core of Popperian philosophy to be weary of such instances of inductivism as they are psychologically appealing yet can easily be misleading in the search for an approximation of truth.

⁹² Which can be shown through the subclass relation or dimensionality of the statement. The statement "anti-black prejudice in the United States" would imply certain parameters to be set to a specific value, indicating that the dimensionality of this particular statement is higher than that of coalitional computation where these parameters are not to be met. This way, the dimensionality of the latter is lower, its testability greater, and it says more about reality. Anti-black prejudice in the United States can thus be subsumed under the more universal concept of coalitional computation.

⁹³ With the exception of those animated by either exclusion of bad reciprocators or parasite aversion, which are functionally different mechanisms from coalitional computation.

In this sense, the discussion on simplicity provides a link with the discussion on law-like regularities in the social sciences. For, the higher the degree of logical simplicity, the less variant the mechanisms or regularity is with regard to time and space. Even though this link was not explicitly made by Popper when discussing simplicity, it does elucidate what the concept may mean for the social sciences, where “the particular” is often theorized on and, I am afraid, the search for regularities has oftentimes been given up, especially by those social scientists which refer to themselves as “critical”, “postmodern” or “constructivist”. In terms of the current study, this approach to the concept of simplicity means to search for regularities which are less variant to time and space compared to predecessor regularities. For example, a theory on “hate crimes against black Muslim teenagers in new wave party scenes in southern Texas” is far less invariant to time and space than a theory on “effects of threat perception on bias motivated aggression”, to give just a random example. In this sense, the former theory is of greater dimensionality as more parameters need to be explicated to obtain a potential falsifier, it is situated on a lower level of universality, and has a lower degree of precision than the latter; it is *simpler*.

Thus, with regard to simplicity it can be said that the theory developed in this study performs equally or better than the theories it was based on, i.e. RWA, SDO, and prejudice. The reason for this is that all of these theories can be subsumed under the evolutionary theory on human sociality. When the theory on human sociality is falsified, so are those subsumed under it. In this sense, it integrates distinct theories – or unifies them – under one broad theoretical framework, the evolutionary theory on human sociality. Further support for the theory’s higher degree of simplicity can be found in the fact that those instances of human sociality studied in this project are certainly not the only ones that can be deduced from it, by means of the same initial conditions. To state it simply, for example, if no threat is perceived with regard to a certain out-group but rather a positively valued characteristic, such as diligently contributing to the common good, prejudice will not be the consequence but rather acceptance or coalition formation.

There are theories in which the case is even clearer. I do not wish to enter into an in-depth debate on specific theories, as this would rightfully require a lot of more work to dissect them into their composing hypotheses, and as a consequence I will only refer to a type of theory. There are approaches which are to be called “hard constructivism”, which state that many things, including prejudice and the behaviors resulting from it, are fully socially constructed. As a consequence, they ought to be fully deconstructed as well (see, inter alia, Boghossian,

2006, for an explanation of and critique on this point of view). Apart from common criticisms leveled to such approaches, in the context of the current discussion this would amount to saying that only very local phenomena can be theorized on. As the number of parameters to be provided in order to provide a potential falsifier for such a theory is, in principle, innumerable (one can always protect such a theory with auxiliary hypotheses), the dimensionality of such theories would be quasi infinite. As a result, the theories would be of a far lesser level of universality, would have a far lower level of specificity, and would be practically untestable: they are *highly complex*.⁹⁴ The same, but to a somewhat lesser degree, holds for soft constructivist approaches such as critical race theory, postmodernist approaches, and the so-called “critical approaches” in criminology. Especially for the latter, which is often more a political agenda than explanatory theorizing, the involvement of ideology is so great, that the dimensionality of the theory would be infinite. Not to mention the measurement problems one would encounter when applying such approaches. For all of the reasons above, it can be concluded that the theory presented in this study is at least equally, but generally more simple than its competing theories.

This concludes the logical evaluation of the theory in light of other existing theories. Even though the discussion remained at surface level in what regards theories outside of the scope of the study, i.e. those that were actually included in the model, the logic in the reasoning is quite transparent. Comparing all existing theories that acclaim to have a bearing on prejudice and bias motivated aggression would indeed be an interesting exercise, yet a time consuming one insofar as they all need to be thoroughly dissected, but falls outside the scope of this study. This brings me automatically to the next section, where some suggestions for further research will be suggested.

2. Challenges and further research

Even though the theory has received a certain degree of corroboration in the present study, this can most certainly not be regarded as an endpoint. It is within the logic of science – at least that logic set out at the onset of this study – that all corroboration is relative to the number and degree of criticality of the tests it is subjected to. In this respect, some obvious weaknesses can be pointed out, and, based on those weaknesses and the logical evaluation of the theory, some avenues for further research in order to further critically test the theory at hand will be suggested.

⁹⁴ And by the same token inapplicable in the sense of providing general mechanisms to be applied in given a particular context.

One such recommendation is in line with the foregoing remarks on precision of the theory. Whereas the theory was corroborated in the context of coalitional computation, the test was not extended to other groups which would fall within the domain of parasite aversion. This would provide a crucial test in the logic of critical rationalism, as it would directly appeal to the class of potential falsifiers that the theory posits. Therefore, future research ought to test the same model in a context of parasite aversion as well as coalitional computation in a quasi-experimental design. The theory predicts that the model will hold in case of coalitional computation, but that it will not hold in case of parasite aversion.^{95,96} If it does, this would pose serious challenges to the theory of coalitional computation as the specific functionality of the mechanism derived from evolutionary theory would be challenged.

A second obvious weakness of the study is the *measurement of quality signaling*. Even though this measure performed rather well in a Spanish context, it did not perform equally well in the Belgian context, where only three items could be retained. Given the interesting psychometric properties of this measure (especially its relationship with RWA), it ought to be further developed in subsequent research, to reach a higher standard of quality. This is a logical consequence of the demand for higher degrees of testability. If testability is the main criterion for selecting theories, it follows that the precision in measurement ought to be as high as possible, for otherwise differences between theories would be impossible to detect due to imprecise measurement (Popper, 1945: 108-109).

Next to this, measurement can also be more *diverse*. That is to say, different operationalizations of variables in order to see whether or not the effects studied are due to how a variable is operationalized or not. Also, it can be interesting to try to conceive of new variables on the basis of the same theory, which convey the same sort of information. In this context, for example, it might be interesting to make use of the concept *empathic concern*. As various social and evolutionary psychologists have argued, Peter Singer (1981) and Steven Pinker (2011) up front,

⁹⁵ In fact, it was originally planned to extend the study with such a quasi-experimental design. After the studies in Belgium and Spain, it was planned to conduct a study in the U.S. which would provide further materials to culturally cross-validate the results, and provide an opportunity to conduct a quasi-experimental design, on the condition that measurement of the signaling scales was precise and statistically sound enough. The latter is not entirely true, however, as discussed earlier. This, in combination with grave delays due to IRB (institutional review board) procedures and other practical obstacles (some universities wouldn't even allow a survey by non-students/staff), it was decided to postpone this study to a later stage. This will enable the refinement of the signaling scales, and a more robust planning of the study, as well as the incorporation of other suggestions for further research discussed in this chapter.

⁹⁶ It can, however, be argued that parasite aversion is also based on a sense of "danger". The main difference, however, lies in the fact that parasite aversion is expected to operate independently from any link with the evolution of human sociality, and can thus be considered a self-preservation mechanism.

the “circle of empathy” of people has expanded over the years. The sociologist Sawyer (1964) argues that empathy or empathic concern is not a stable personality trait, but that it is dependent on the object of empathy and the context. Consistent with the theory set out in this study, it could thus be argued that in the presence of threat (danger and/or competition), people’s empathic concern becomes limited to the in-group only. This way, a new variable could be created, which could fittingly be called “parochial empathic concern”. This suggestion, which is only one of many potential inventive research approaches, is also based on the evolutionary theory set out in this study, and may provide for additional tests, from a slightly different angle, on the same subject or problem. In the end, testing until the theory fails is the main idea⁹⁷.

Further, in the context of measurement, it is also noteworthy that a survey in itself is just one out of many approaches to the social sciences. Even though it allows for a cheap and practical measurement of certain concepts, it is doubtful it is the best measurement tool available. The main reason for this is that respondents are active thinkers, and they do not necessarily objectively convey what the situation is like. This is partly so because of well-known phenomena such as social desirability, but an important aspect of this type of research – evolutionary theory – is that the reasons why some kind of behavioral propensity evolved need not be known by the person exhibiting that particular behavior, as his or her motivation is more proximal and often based on emotions. In line with this, Popper also asserted that people’s subjective perception of an objective problem situation need not coincide, and when they do, people need not be aware of the objective problem to be addressed (1979, 206-56). Given this discrepancy, it is advisable to make use of types of measurement in which the import of the conscious person is eliminated as much as possible. For the purpose of the investigation of evolutionarily acquired behavioral propensities, in my opinion the best way to go about this is to uncover the neurobiological basis for this behavior (in this case the module of coalitional computation), and extend the theory to include these elements as well. Prediction as to which neural paths will or will not be activated when coalitional computation is activated, will shed a more objective light on whether or not the theory holds. This setup, in combination with an

⁹⁷ As a matter of fact I had included such a measure in the Belgian sample for exploratory purposes. Respondents were asked to fill out a regular empathic concern scale. At the end of the questionnaire, they were asked to fill out an empathic concern scale targeted towards immigrants. The latter score was subtracted from the former, thus obtaining a numeric index of “parochial empathic concern” (PEC). When this was entered in a linear regression, PEC had a beta coefficient of the same magnitude as RWA and SDO, and contributed significantly to the variance explained.

experimental design, would challenge the theory far more directly than the indirect cross-sectional approach applied in the current study.

A third possible weakness is that the study was conducted on students only. This was done for practical reasons to get a wider coverage – which has proven to be successful. Even though it has been argued that the usage of the “W.E.I.R.D.” people is not a problem as such when it comes to RWA, SDO and prejudice (e.g. Sibley & Duckitt, 2008), this remains unknown with regard to the signaling measures. For one, they are specifically designed to probe situations students face (for example the items relating to group tasks). So, in order to further test the theory, it is necessary to develop similar measures for adults, and test the model in adult samples as well to assess its robustness.

In principle, all of the above mentioned weaknesses and suggestions for further research concern, the further testing of the theory. In this context, the current research can only be regarded as a first and modest exploration of the subject matter, which is in dire need of further testing to see where the theory fails. It is the falsification of the theory or parts thereof in a given setting that provides for the most valuable information and which allows for theoretical growth. Next to this overall purpose, the study at hand values to a great extent unification – which essentially is explanation in the Popperian critical rationalist view. For this reason, a further general suggestion for further research would be to see how it relates to other fields of study. In the sections that follow, a few of these areas with which the theory is compatible and for which the evolutionary theory on sociality and prejudice may provide an overarching theoretical frame for theoretical unification, will be discussed. The theories selected are current research on radicalization and violent extremism, the broad field of restorative justice, the broad field of transitional justice, and legal theory on criminal justice.

3. Links with other research areas

The choice for the research areas with which the theory developed in this study will be brought into connection is not arbitrary. The choice for radicalization and violent extremism is quite straightforward, as the current study also dealt with bias motivated behaviors. As I will intend to show, a lot of the concepts used in this field are substantially similar or even identical to those used in the current study. Even though the name of something as such usually is matter of consensus in a particular field of study, I do hope to show that the evolutionary framework developed in this study is equally applicable to radicalization and violent extremism. Therefore, I will try to identify privileged variables for cross-fertilization between both theories. The

choice for the two other research areas, restorative (and indirectly transitional justice), is in principle reminiscent of my own academic interest some years ago, where I was usually working on themes within these two broad fields of study. Nonetheless, the fact that these two fields of study are located within the more legally oriented approaches in social science, the ostensibly great gap between them makes the exercise all the more interesting. Finally, I will also apply the theory to enforcement of legal norms.

3.1. Connections with radicalization and violent extremism

In criminology, attention is increasingly given to the topic of radicalization. A variety of concepts are brought into relationship with radicalization or other aspects thereof such as moral support for political violence, and active political violence. Often, the theoretical frameworks used in this approach share some elements with the evolutionary approach set out in this study.

One such concept – which is gaining in popularity in criminological theorizing in general – is *morality* (e.g. De Waele & Pauwels, 2014; Lilly, Cullen & Ball, 2010; Wikström et al. 2012). The main hypothesis there is that *“individuals with law-relevant morality do not conceive of crime as a possible action whereas for individuals with non-law-relevant morality crime is a possible action”* (De Waele & Pauwels, 2014: 365). Certainly, the theory set out in the current study is no stranger to morality and moral rules, as they are the very fundament of human sociality. Therefore, it would be an interesting enterprise to include measures of morality in the current framework as well, as they may prove to be a significant predictor for prejudice and bias motivated aggression.

With regard to the two signaling measures developed for this study, I would hypothesize that morality in general would be related to genuine signaling of commitment to the in-group, but not to deceptive signaling. The simple reason for this is that “genuine” sociality implies a certain norm-compliance, as this is the backbone of human group living from an evolutionary point of view. Apart from that, deceptive signaling represents the cheating side of human sociality. Acting pro-socially there only serves self-interested purposes, and, by implication, noncompliance to the norms of group living. Thus, for genuinely prosocial people, morality could lead to moral support for bias motivated aggression, as this is an imperative of social living as well when norms are breached (i.e. punishment of cheaters). As elaborately discussed in this study, however, this dynamic is subject to the presence of a perception of conflict or competition between groups.

A second element often used in radicalization research is *perceived injustice*, derived from Tyler's theory on law-obedience (Tyler, 2006). This element, again, reminds of the notion of fairness which is a central element in the evolutionary theory developed in this study. Fairness is at center stage in all forms of reciprocity, and it is exactly this notion which demarcates between norm-conform individuals and cheaters. In criminological theory, perceptions of injustice also have a place in general strain theory (Agnew, 2011), which may thus be linked to the theoretical framework developed in this study. Even though perceived injustice was not used in the current study, a very similar idea gave rise to the modeling of SDO and RWA as mediators, i.e. a perception of competition or conflict (this link will be clearly explained in the next section). Furthermore, the measurement of prejudice itself includes some statements that are very akin to perceived injustice. One such example is "immigrants have jobs that actually belong to natives".

In the original framework of Tyler (2006), however, the role of perceived injustice usually relates to the functioning of the police and the courts. This element of perceived injustice is entirely absent from the theory set out in this study, and it would indeed be an interesting exercise to incorporate it. Given the domain specific nature of a mechanism such as coalitional computation, I would hypothesize that the role of perceived injustice operationalized as injustice in the operation of courts and police only plays a minor role, especially in the presence of more salient predictors such as RWA, SDO and prejudice.

Further, an important element in current theorizing on radicalization and crime in general, is *anomie*. This concept may be divided into three dimensions, being political powerlessness, social powerlessness and social isolation (De Waele & Pauwels, 2014), resulting in a "subjective feeling responding to societal dysfunctions" (Van de Velde & Pauwels, 2010). Theoretically, this concept is closely related to the concept of RWA, which also centers around the notions of social cohesion, obedience to rightful authorities, and exclusion or aggression towards individuals threatening the social fabric of a group. The only difference seems to be social isolation, which is not explicitly present in RWA, except for the fact that people high in RWA usually crave cohesive social groups with clear norms (e.g. Altemeyer, 2006). Thus, it seems that the three dimensions of anomia can be brought into the theoretical framework set out in the present study through the concept of RWA. Modeling this, however, is tricky. Caution is warranted insofar as one needs to be very clear if the dimensions of anomia differ from RWA as a concept, and whether they are empirically discernible. At least to me, it seems likely that

all of the above revolve around one single latent construct. This remains speculation, however, and is need of further theorizing and research.⁹⁸

A largely similar reasoning can be put forward with regard to *ethnocentrism*, a concept that is quite predominant in research on vigilantism (e.g. Van Damme & Pauwels, 2012). This concept indicates that an in-group identity, so defined on the basis of “ethnic markers”, is often the result of an antagonistic process between two competing groups or groups in conflict with each other. This way, the in-group is glorified, whereas the out-group is demonized so to speak. This basically comes down to the very core of the present study, where parochial altruism – an exclusive in-group orientation of sociality – is the result of competition and/or conflict between different groups. The concept of ethnocentrism thus is easily reconcilable with the evolutionary framework. The only difference is that the evolutionary framework logically incorporates all this in a much broader theoretical framework, which has a higher degree of universality and precision with regard to the predicates (see above).

An often used concept in general criminological theory and radicalization in particular, is the notion of *social learning* (e.g. Akers, 1998; Higgins, 2010; Rodriguez-Garcia & Wagner, 2009), most often translated into the concept of “peer attitudes” or “peer behaviors”. Again, these relate to a single concept in evolutionary theory: transmission mechanisms. Other variables often included in research are different measures of “exposure” (e.g. music, movies, etc.), or “parental attitudes/behaviors”, different variables measuring school context, and so on. They all form part of the pool of transmission mechanisms, and evolutionary theory can structure this variety of variables in a theoretically informed way, for example dividing them into “horizontal” and “vertical” transmission mechanisms. This not only opens up the opportunity to develop new, more integrated measures of it, but it equally allows to integrate a rather large variety of theoretical insights into one single theoretical framework. Just to think of some, it can integrate elements of subculture theories, differential association theories, moral bonds, and insights from environmental theories.

To conclude, various disciplines have been working on the same subject at the same time, with little cross-fertilization. As many concepts used in the various studies concerned with the broad themes of prejudice, radicalization and bias motivated aggression, it seems time has come to

⁹⁸ It is, however, within the ambit of critical rationalism to strive for higher universality and precision, or greater simplicity. By creating many concepts which all revolve around the same latent construct, the dimensionality of a theory increases and as a consequence also its complexity.

look for potential unification in this increasingly popular research area. In this sense, future research might want to look for more universal concepts to which the diversity of concepts available in the field can be reduced. This would increase the levels of universality and degrees of precision, increase the simplicity of theories, and make them better testable. With regards to the current study, the evolutionary framework is able to pin a variety of these concepts in a specific place in the general theoretical framework. In short, the relative simplicity and clarity of evolutionary theory provides a great guide to start such an exercise, and initiate the interdisciplinary and theoretically sound integration of various research traditions.

3.2. Connections with the fields of victimology and alternative sanctioning

Insofar as criminology is defined as the study of crime (or rule-breaking), consequences of crime, and how we can deal with crime, an interesting conceptual link can be made with the broad field of victimology. More precisely it seems useful to reflect one moment on the usefulness of the legal categories of “victim” and “offender” (Fattah, 2000) in cases of bias motivated aggression. This will no doubt be a more controversial exercise, as in both legalistic discourse (or representation of reality), and public opinion, these categories are clear cut in the sense that it is usually believed that one person is the absolute victim and one is the absolute offender. There is, however, a relatively large scholarship that tends to disagree with this position. Consider the following quote by one of the founding fathers of what is generally referred to as victimology⁹⁹:

Those among you who are in daily contact with offenders have surely noticed that a large number of them feel and behave like a victim. They suffer from heightened and acute feelings of injustice. These feelings of injustice, this firm conviction that they are victims, whether the victimization is real (as it is in many cases) or perceived, there seems to be little doubt that it plays a significant role in offending. Fattah (2000: 79).

This quote immediately casts a huge amount of doubt on the usually sharp legal distinction between “victim” and “offender”. However, the position, if not from a legal then at least from a behavioral point of view, is certainly compatible with many existing criminological and psychological theories. For example, the very well established strain theory (Agnew, 1992) always points out toward “stressors”, such as job loss, may easily be experienced as a certain

⁹⁹ Even though I know for sure – his being my mentor in part and a long time ago – that he would not agree at all with such a division criminology-victimology. In his view, the two were inseparable, just as the quote suggests.

degree of “victimization”. Similarly, in psychological research on prejudice, often reference is made to conflict, e.g. realistic conflict theory (Jackson, 1993), or varieties of threats, e.g. integrated threat theory (Riek et al., 2006). Even though the terminology differs quite a lot, given that “victim”, “offender”, and even “crime” are normative concepts *par excellence*, this does not preclude the fact that linkages can be drawn.

How, then, does this relate to the theory set out in this study? In the case of the path ranging from RWA to prejudice the logic is most straightforward. As explained in the theoretical exposition, RWA refers to a perception of the world as being an unsafe, dangerous place, resulting in a heightened need for security and social cohesion. As a result, people high in RWA tend to favor groups with strict norms and an efficient enforcement of these norms. When these norms are threatened, people are willing to go far in effectively enforcing them, as history shows (ranging from posse’s to compliance with gross violations of human rights such as those that occurred in the Nazi regimes and other genocides worldwide).

Of course, such attitude does not come out of the blue. A theory that finds close connection with the concept of RWA is integrated threat theory (e.g. the meta analysis by Riek et al., 2006). There, both realistic (e.g. threats to economic wellbeing, to physical integrity) and symbolic (e.g. values, customs) threats are considered to be the prime situational trigger for prejudice and, eventually, bias motivated behaviors. This theory does not only apply to people high in RWA, but extends to all people. Whether or not RWA is a personality trait, and whether or not a perception of realistic or symbolic conflicts leads to RWA, in all possible scenarios the central notion is a sense or perception of *threat*.

This notion can be closely connected to bias motivated behaviors and prejudice more in general: threats or a perception thereof do imply a *sense of* passed or expected victimization, which one wishes to avoid. Interestingly, the threat does not necessarily need to be directed towards the individual perpetrator; it suffices that it be directed to one of his or her fellow in-group members. This phenomenon strikingly resembles the *in terrorem* aspect of hate crime offending on part of the group to which the victim of a hate crime belongs. For, there too, the results of the crime, spread to other in-group members, experiencing shock, anger, fear/vulnerability, inferiority and a sense of the normativity of the violence (Perry & Alvi, 2012). Perry and Alvi discuss some effects which seem, at least at first sight, to be specific of hate crime victims – most notably the sense of inferiority – this does not preclude the possibility that this is merely

a specific instance of a more general effect, and that a similar *in terrorem* effect may actually be happening with hate crime offenders.

The main theoretical innovation of this study was to link RWA to the evolution of human sociality, following Kessler and Cohrs (2008). It was connected with the phenomenon of *signaling one's quality as a group member* to fellow group members. The intricate links between RWA and this form of signaling are to be explained on the basis of *norms and their transgression*, as discussed in the literature overview. In this sense, bias motivated behaviors can, in part, be explained as a form of *moralistic violence*, i.e. violence directed at *norm-transgressors*. Further, the current study showed that RWA in itself will *not* lead to bias motivated behaviors, for which a neutralizing and targeting mechanisms is needed; it will only do so if a certain danger or threat is perceived and attributed to a certain out-group. In the Spanish study, there even was a negative path between RWA and bias motivated behaviors, bolstering this conjecture. All of this indicates that the conjecture that bias motivated behaviors are, at least in part, motivated by a sense of injustice or victimization, real or perceived, imminent or past, is plausible.

Let us now turn to the second path, that originating in SDO. As discussed earlier, the worldview accompanying SDO is *hierarchical* and *competitive* (Duckitt, Wagner, du Plessis & Birum, 2002, p. 92). That is, different groups in society are organized along hierarchical lines, and there is considerable competition over the relative hierarchical position of one group compared to another. In short, the world is perceived as a “dog-eat-dog” competitive jungle. Members of higher hierarchical groups will try to defend their position and the privileges associated therewith, and consequently withstand (group) equality as this would mean a threat to their earned, privileged hierarchic position – at least as they perceive it (e.g. Quist & Resendez, 2002). A central concept in SDO is that of *legitimizing myths*. These are shared ideologies, such as nationalism, cultural elitism, sexism, political-economic conservatism, noblesse oblige and meritocracy (see Pratto et al., 1994, pp. 742-743), that justify the hierarchies in society by depicting subordinate groups as deserving of their status. This way, group privileges are secured.

However, can it be said that in case of SDO there is an underlying sense of (real or imagined, acute or expected) victimization? Intuitively, it can be said that people high in SDO do subjectively perceive that “something is wrong” or not “as it should be”, and that they will experience a *disadvantage* at the hands of certain out-groups. That is, they do seem to be

necessarily motivated by (real or imagined) negative personal or others' experiences, quite consistent with general strain theory (e.g. Agnew, Brezina, Wright, & Cullen, 2002), where the removal of positively valued stimuli plays an important role. As the quote of Fattah (2008) suggests, “*they suffer from heightened and acute feelings of injustice*”¹⁰⁰, which could in fact be transposed to SDO as well: out-groups can be perceived to threaten the “just” order or hierarchy of the world, thus infringing on the benefits associated with that (hierarchical) order. Even though it may thus seem counterintuitive and maybe controversial, it would make sense to incorporate this specific lesson of victimology in SDO.

3.3. Reflections on the enforcement of anti-bias legislation

The fact that a sense of victimization may play an important role in the etiology of hate crime has implications for strategies designed to combat prejudice and bias motivated behaviors. It certainly is not my intention to have an in-depth debate on legal theory here, but I do want to point out some fundamental dynamics with regard to anti-discriminatory and anti-hate crime legislation that are implied by the theory developed in this study, be it in a more modest way than any legal scholar could.

In the logic described above, the key is in principle an experience of something that “is bad” or “unjust” by a group, in short: a sense of victimization. To draw this line of reasoning through to everyday behaviors, the work of the legal scholar Van Schilfgaarde (2008) can be mentioned. In a – highly enlightening – attempt to reveal what “justice” is, he discerns between two types of justice: law-linked justice and existence-linked justice. *Law-linked justice* is the kind of justice relating to formalized norms or what is generally called “the law”. In principle, it is about the correct application of the law (this way, this type of justice is not only related to law, but governed by it). The more important notion for the purpose of this discussion is *existence linked justice*. This notion refers to people’s ability to form judgments on their own, apart from the law. They inevitably always make judgments in their everyday lives, based on their own experiences and interactions with other citizens or institutions. This notion is very consistent with the evolutionary framework discussed in this study, as norms and their transgressions

¹⁰⁰ Whether or not this injustice can actually be qualified as an injustice from the point of view of, for example, equality, does not matter. When talking about behavior, the main motivation is what the perpetrator individually and subjectively believes to be the case. So if he is subjectively convinced that there are righteous hierarchical positions in society which are threatened by outgroups – or are already taken in by them – then this can easily qualify as an injustice in his or her personal perception.

basically formed the backbone of the evolution of sociality. Van Schilfgaard states that it is not as much experiences of justice that people react to, but experiences of *injustice*:

My thesis is that this justice, which is not a legal norm, is not a social norm either, but a personal experience in which irrational and existential element always plays a role. It finds its origin in human reason as much as law-linked justice, but in its ultimate form it is often [...] beyond human reason. If it is a norm as well, it is not a legal or social norm, but a highly personal one and as such it can be quite “absolute”. “Absolute” not in the sense that it is valid for everybody, but in the sense that it is hard to shake the personal belief in this norm (Van Schilfgaard, 2008, p. 132).

The two notions cannot be seen apart from each other: existence linked justice precedes law-linked justice in the sense that one cannot have institutionalized norms without having social norms first.¹⁰¹ As such, this notion can be linked to the above discussion on victimology, more precisely the insight that many criminal acts are inspired by a subjective perception of victimization. Van Schilfgaard points in this direction too:

The moment is there when a citizen finds it hard to accept the judgment [of a formal court]. For him there is no or little legal “discours” to level out his unhappiness. Just as the judges and lawmakers involved he will be – or ought to be – looking for justice. But – and this is the big difference – his search for justice will not follow the path of law but of his own personal rationality. (Ibid., p. 133)

The implication of this view, which is consistent with both the evolutionary framework and Fattah’s assertion regarding of victimization, is that criminal law’s ability to fulfill its functions would be severely undermined in cases of bias motivated behaviors, taking into account perceived victimization or injustice as a motivating factor. Let us now look into this in more detail by deriving some implications. First, the inability of law to provide for deterrence and rehabilitation will be discussed as these are the predominant ways in which Western societies tend to deal with crime (e.g Taylor, 2009). Second, this argument will be nuanced by making a case for the non-abolition of anti-hate legislation, which will rest largely on the symbolic function of law. Finally, an alternative means of dealing with hate crime, restorative justice, will be advocated on the basis of the discussion to be held.

As indicated earlier, a widely assumed modality to achieve the social regulation and conflict resolution functions of criminal law, is to operationalize them in terms of deterrence and retribution respectively. From both the behavioral and legal analyses discussed above, this

¹⁰¹ Interestingly, this notion can be easily linked with the extensive scholarship on collective memory and the rule of law available in transitional justice scholarship. In this sense, the current study can also be linked to this broad domain (which will be done elsewhere).

seems dubious however. With regard to *deterrence*, an important element of Van Schilfgaarde's (2008) analysis is that existence-linked justice precedes law-linked justice. Thus, from a logical point of view, deterrence can only work if the legal rule under consideration is in line with the personal judgments of the potential offender. But, as discussed in the victimological approach to bias motivated behaviors, there is, in all of the main explanations of the phenomenon, an underlying sense of victimization or fear thereof which takes up a central part in the process leading up to bias motivated behaviors. Insofar as this can be equated with an existential sense of injustice, I reckon it is less likely that this person will regard the law as it pertains to bias motivated aggression as legitimate, thus lessening the chances he or she will abide by the legal rule. Hence, the effects of deterrence in regard bias motivated behaviors can at most be relative, as a function of the degree to which one experiences an injustice. To state it: the greater the sense of victimization (and consequently injustice), the lesser the cost of the punishment will weigh up against the relative benefits of "justice be done".¹⁰²

Furthermore, it should be borne in mind that *signaling* was an important element of the theory outlined in this study. Signaling refers to the phenomenon where someone bears a cost in order to improve his or her status in the group. For the purpose of this study, signaling of one's sociality or commitment to the in-group was the focal point. This might complicate things further, in the sense that a punitive response might bring along some unintended consequences, opposite to the intention of that reaction. As discussed earlier, an in-group is defined as such by an individual, and should not be equated with the idea of "mainstream society". Indeed, often people interact with likeminded people (e.g. Page et al., 2005), as discussed earlier in the sections on horizontal transmission and sociality. If a shared conception of injustice emanating from a specific out-group exists within a certain in-group, acting upon this in the form of investing energy and resources to punish norm-transgressors would count as a form of signaling which heightens one's status in the in-group. It is, however, an essential element of signaling that the strength and quality of the signal is a function of the cost of that signal. In this sense, a punitive response might actually heighten the cost of the signal, thus making it a *stronger* signal. In the logic of costly signaling, this might actually lead to an increase of status rather than a decrease, in the eyes of the in-group *as defined by the person sending the signal* (see Heylen & Pauwels, 2015).

¹⁰² Which is basically a rational choice (e.g. Clarke & Felson, 2004) approach.

But does this logic hold for both types of pro-social people? This certainly is not a clearly demarcated issue, given the flexibility and versatility of people. For, all people have deceptive and genuine pro-social tendencies, to differing degrees, depending on the specific circumstances one finds him- or herself in. Even if abstraction is made from this, and only full cheaters and fully genuinely pro-social people are considered, the case is not clear. So, inevitably, what follows is mere speculation and to further, preferably qualitative, research.

With regard to *genuinely prosocial people*, I conjecture that it really depends on the type of the threat, the intensity of the threat, the group one finds him- or herself in, the subjective value of that group and the time spent in that group. On the one extreme, if someone perceives a threat to the core values of the group, which is imminent and grave, and if that person spends a lot of time in the group whose values are threatened and shares those values personally, then it is very likely that prejudice and, if the opportunity presents itself, bias motivated behaviors will occur. On the other hand, if there only is a slight threat to a quite arbitrary custom of the in-group, that emanates from a distant out-group, and if the person does not spend a lot of time in the group whose custom is threatened and if, in addition, this particular custom or value is not very important to that person, it is highly unlikely prejudice and bias motivated behaviors will occur.

Whilst the above reasoning is quite straightforward, it must be borne in mind that in reality someone does not belong to just one in-group. People define themselves along a wide variety of dimensions¹⁰³, and the total “amount” – for want of a better term – of threat or competition emanating from out-groups one is confronted with across domains and over time, will presumably also matter. This way, estimation of the likelihood that prejudice and/or bias motivated behaviors will instantiate should take into account the total exposure to threats outside of the specific case under investigation, as a weighting factor. This way, if a person is exposed to a relatively low threat to a value that is relatively unimportant to him or her, but at the same time has a high overall exposure to threats in other domains, will most likely be more prone to resort to prejudice and/or bias motivated behaviors. The effect of the weighting factor is not at all irrelevant. For people that are genuinely pro-social will tend to uphold norms from their environment. So, someone who is generally exposed to tolerance norms and nonviolence norms, will have a greater resistance to prejudice and bias motivated aggression, consistent with

¹⁰³ For example, one can be a father, a soccer player, a university professor, an actor, and so on at the same time. Along these lines other values and customs are supposedly upheld to differing degrees.

the findings of the empirical study (especially the Spanish study where a negative path was found between RWA and bias motivated aggression)¹⁰⁴.

Let us now take a look at people prone to deceptively signal their commitment to the in-group. There is a big conceptual difference between this type of person and the genuinely pro-social people, insofar as they are much more self-interested, and are less concerned with the rest of the in-group. They will tend to signal their commitment to the in-group only to avoid being unmasked as a cheater, and consequently face punishment, or to increase their own power and status in the in-group as they define it subjectively. Again, whether or not deterrence and retribution will work depends on a few factors. A first dynamic one would expect here, is that people inclined to deceptively signal their commitment to the in-group will try to avoid personal injury, and that deterrence as a consequence might work for them. However, a lot will depend on the particular in-group (as defined by them) again. If there is quite a widespread consensus on the inferiority of certain out-groups, it might actually enhance their status to act upon this. It is very well possible that, in case of deceptors, a rational choice model (e.g. Clarke & Felson, 2004) is more suited compared to the more emotional model one finds in case of genuine sociality and RWA. If the status benefit outweighs the cost of the sanction, than it is unlikely they will be effectively deterred.

Even though the above is a matter of speculation and ought to be subject to further (qualitative) research, a few core elements which play a vital role can be pointed out nonetheless. First, again two different logics are present. What they do share, however, are the two core elements in the reasoning. The first element is the in-group. As stated, people have differing degrees of membership in different groups, and it is about *how the person in question defines this group*, not what outsiders might consider to be this person's in-group. Second, it is always about *subjective perceptions of threat or competition*, whatever the objective situation may be like. As these are not static entities but completely dependent on the context and not stable over time, it seems a very personalized way of dealing with prejudice and bias motivated behaviors is to be preferred over generic, large scale initiatives. In the section on policy recommendations, one of such approaches, i.e. restoratively inspired approaches, will be discussed. Before doing so, however, I deem it necessary to explicitly state the necessity of legislation aimed at reducing

¹⁰⁴ In this sense, the study is compatible with situational action theory (e.g. Wikström & Treiber, 2009) and rational choice theory (e.g. Clarke & Felson, 2004).

prejudice and bias motivated aggression, for the above reasoning can in no way be interpreted as entailing any such thing.

For the sake of clarity, a note on the non-abolition of anti-hate crime legislation is in order. One could easily see (as has happened in the past) some elements in support of penal abolition in the above argumentation. I do not want to go that far however, for several reasons. One of the reasons is that in some cases deterrence and retribution will work, as they are a function of the degree of perceived victimization in the eyes of the offender. But, more importantly, one ought not to forget the *symbolic function of law* (see, inter alia, Claes, Devroe & Keirsbilck, 2006). As has been extensively and convincingly argued by Pinker (2011), hate crimes have not increased over time, but we have witnessed a steep decline in hate motivated violence over time.^{105,106} That is, even though the problem persists in both non-Western and Western countries, a kind of public awareness – a collective memory (e.g. Czarnota 2001) – seems to have emerged, enshrined in various formal, national as well as international, rules and laws that counteract the commission of hate crimes. Thus, criminal law has come to symbolize this moral stance. Furthermore, even though everyone is presumably prejudiced (as the vast psychological literature since Allport tells us), by far not everyone commits, or is even prone to bias motivated behaviors. People, under normal circumstances do follow the rules, be it in a deceptive or genuine way, and those rules often need to be made explicit by the stroke of a pen so to speak. Notwithstanding the fact that this offers no guarantees to the future, it does highlight the importance of the symbolic function of law in society.

4. Policy implications

The policy implications that result from the current study and discussion, can be divided in two main clusters: alternative sanctions on the one hand, and prevention on the other. I will limit the discussion to the elements below, as they form with a framework which can be used to

¹⁰⁵ The very fact that the term “hate crimes” has only emerged in the 80’s, presumably in the wake of the rights revolutions triggered by events such as the second World War, is an indication of this. In other words: the explicit and formal criminalization of hate crime – thus the inclusion of the subjective element of intent to specific already existing crimes – indicates a shift in public and political awareness to these issues.

¹⁰⁶ This does not preclude the possibility of variations in the levels of hate motivated violence; the trends Pinker talks about are general trends over a larger span of time (e.g. the last century). Of course, locally certain spikes are possible in the trend. Neither does this mean that attention should shift away from hate crime legislation. It does not preclude the fact that hate crime and prejudice in general might present themselves in different, more subtle forms these days, compared to the overt racism in the past – the so called “modern” or “symbolic” racism (see, inter alia, Sears & Henry, 2003; Tarman & Sears, 2005), even though this may be a consequence of the criminalization of hate crime and the underlying societal shift in attention rather than a distinct form of racism.

assess a wide variety of existing preventive initiatives. Furthermore, they are, at least in my opinion, by far the most important implications that are revealed by the current study.

4.1. A plea for conferencing

As appeared from the above, retribution may not be the most appropriate response to violations of anti-discriminatory law, mainly because of the aspect of costly signaling involved therein. This is especially the case for genuine signaling of sociality, where other measures apart from deterrence can be considered. One such approach would be to find inspiration in the broad field of restorative justice as a mode of alternative sanctioning. Even though not a lot of scholarship exists on the application of these procedures to bias motivated behaviors and prejudice, the current research suggests that it may be a fruitful avenue to consider when confronted with such crimes (see also Walters & Hoyle, 2012; 2014).

The main reason is that the dynamic described in this study are largely based on perceptions, which in part are conveyed through various transmission mechanisms. The idea, then, would be to change the perception of the out-group to a less hostile one, using those very same mechanisms. In this context, a variety of mechanisms could be considered, which all share one thing: *involvement of the broader societal groups* involved, and a confrontation aimed at understanding both of the parties involved.

Involvement of all groups is an obviously very important element (see, inter alia, Sullivan & Tifft, 2006; Johnstone & Van Ness, 2007). As research continues to show the importance of positive contact (see, inter alia, Hodson & Hewstone, 2013; Pettigrew & Tropp, 2006) in reducing prejudice and by consequence bias motivated behaviors, it is but logical that such a contact be part of the process dealing with the aftermath of bias motivated aggression. This way, involvement of all groups refers not only to the group of the victim (in the juridical sense) but also the group of the offender. With regard to the latter, inclusion of his or her peers – that may share his or her attitudes or convictions – might seem dangerous at first glance. However, if one also includes members of the imagined “in-group”, which usually is quite large and ideologically diverse in its own right, this might have a considerable destabilizing effect on the offender and his peers. It may show them that there is no real in-group to be defended, no wrongs to be righted, or that support of his/her/their actions is far less than they would have imagined. This way, the use of bias motivated aggression as a means of signaling may be seriously undermined and, in an ideal case, even be eliminated altogether.

Inclusion of the victim and the community basically serves the same purpose in this context. There, too, the aim is to *debunk the signaling mechanism*. For, if it can be convincingly shown to the perpetrator that there is no real threat going out from this group, there really is not anything to base a signal on according to the evolutionary theory set out in this study. For, in the case of RWA (which is the mediator for quality signaling), a perception of threat is a central element. A courtroom process, which usually strictly deals with guilt and proof of one particular act (thus, a snapshot in time), will not be able to show how other social groups are not a threat in some symbolic or realistic way. An alternative process, as there exist in the wide array of restoratively inspired modes of conflict resolution (e.g. Johnstone & Van Ness, 2007), may be of help here. It must, however, be borne in mind that attitudes towards out-groups usually work by generalizing certain traits towards all the members that share a common marker such as skin color (e.g. Macrae & Bodenhausen, 2000). A process in which a variety of members of this community take part, can show the offender that this community is not a solid block of similar individuals, but actually shares the same diversity as does his own perceived in-group. And again, it is exactly by diminishing the threatening character of the perceived out-group, that the value of signaling is lowered.

So, both of these processes may work hand in hand in one single superordinate project. If a dynamic can be achieved between the two social groups involved, i.e. a non-hostile collaborative dynamic, the process may be significantly reinforced. As social psychology already has investigated thoroughly, a good way to deal with intergroup conflict, is to provide superordinate goals, in which two formerly hostile groups have to collaborate to achieve a higher goal that benefits them both (e.g. Jetten et al., 2004; Sherif, 1988). If this is the case, being in a situation where one sees two social groups perceived to be at conflict with each other collaborating in one and the same process, this might shed another light on the perceived threatening character of the out-group.

In line with the above discussion on victimology, it can be added that a perception of victimization (real or perceived, passed or expected), is most likely present on both sides of the conflict. As most restoratively inspired processes are aimed, in first instance, at *understanding* (e.g. Sullivan & Tifft, 2006), they seem to be of use in this particular, ideology and morally laden type of conflict. Even though things like understanding and the like cannot be predicted with any certainty, it could possibly result in a more natural resolution of the conflict, which traditional court proceedings are far less likely to obtain. There, victims are usually left behind not understanding why they have been victimized, whilst the attitude of the offender goes

unchanged, even maybe bolstered by the strong and costly signal an official punishment equips him with. For such punishments will not go unnoticed by the offender's peers. If anything, the theory developed in this study suggests that his or her status will increase in such a scenario because of the costly signal.

To summarize: whilst traditional court proceedings may well result in an adverse effect for both parties, restoratively inspired processes may at the very least provide an opportunity to end the conflict in a more fundamental way by addressing the very mechanisms that give rise to these behaviors in the first place. With regard to the core thesis of this study, one thing they will for sure do, is take away the opportunity to create a costly signal on the basis of bias motivated behaviors.

What about people inclined to deceptively signal their commitment to the in-group, then? Whilst the dynamics described above may prove successful in the case of genuinely social people (in principle by changing the initial conditions that model their social behavior), this is less likely to be the case for deceptive signalers, who are more self-oriented: they are expected to attach far less importance to what others think of them if it does not serve their own purposes. However, one very important element remains true, disregarding the type of signaling: the fact that a restoratively inspired process as described above *takes away the opportunity to signal* one's commitment to the in-group through bias motivated behaviors. In this sense, it is unlikely that someone self-interested would carry the burden of bias motivated aggression, if it does not result in any apparent advantage for him or her. This would mean he or she only bears costs, which is in contradiction to the principle of self-interest. Of course, such a process takes places *post factum*, so it will not result in an effective prevention of this type of behavior. On the other hand, it may result in desistance. This is important insofar as bias motivated aggression usually is not a single incident, but a process which may eventually escalate into serious aggression. Early detection and early intervention may therefore halt this process.

Also, in the case of deceptive signalers, it may be worthwhile to consider the following option. Signals do not only come in a positive variant, but equally so in a *negative variant*. A possible strategy may then be to turn the signal that is once hoped for to be positive (towards the perceived in-group of the offender), into a negative one. This way, no reputation can be built, and the experience that this type of behavior may result in a negative rather than a positive reputation, may result in desistance on behalf of the offender. One possible way to do so is a process proposed by Braithwaite (1989): *reintegrative shaming*. This is a type of shaming in

which a community or social group explicates its disapproval of certain modes of behavior (and *not* the offender as a person), without being disintegrative (stigmatizing). In order to achieve this, as Tyler (2006) suggests, the procedure through which this is achieved must be guarded at all times. Only a sense of procedural justice in combination with reintegrative shaming can achieve the desired effect of lowering recidivism rates.

In addition, a restoratively inspired process may address a key element in the mechanism leading to bias motivated behavior as discussed in this study: prejudice. Prejudice was conceived of as the targeting mechanism and the prime predictor of bias motivated behaviors. It is the result of an out-group being cast out of Singer's expanding circle (1981), thus justifying aggression towards that out-group. This "casting out of the expanding circle" really refers to an aspect of de-humanizing (e.g. Haslam, 2006). Whilst people generally tend to be kind towards fellow humans, in the conditions of conflict and/or competition, this may easily become limited to what is perceived to be the in-group. A restoratively inspired process such as a conference may allow for the perpetrator to understand that the "dehumanized other", in reality is an equally valuable part of society, with the same social embeddedness, needs, reactions, fears, and ambitions as any of us. Especially the acceptance and (empathic) concern of members of the offender's perceived in-group towards this person, may bolster this phenomenon. This way, one of the necessary conditions to speak of bias motivated aggression may be efficiently tackled.

The question that imposes itself then, is where to draw the line between shaming and the constructive processes. In reality, it will always have to come down to a mixture of both, I think. Even though the two paths to prejudice and bias motivated aggression have been considered separately above, research indicates that they may well be intertwined to a large extent. This is certainly the case for the two attitudinal dimensions SDO and RWA, but presumably equally so for the two signaling measures. In this context, the process needs to find a balance between shaming and the constructive processes, on a case-by-case basis. Therefore, it also seems a necessary step to make sure the process is monitored and coordinated by a team of professionals on the matter, in close and constant dialogue with the different parties involved.

4.2. Critical remark to the plea for conferencing

A critical remark may be in order here, in order not to paint to nice a picture of the way prejudice and bias motivated aggression are to be dealt with. The process described in the previous section only focuses on the *individual level* processes that may play an important role in the etiology

of prejudice and bias motivated behaviors. However, evolution is about the *person in the environment*. Consequently, any successful strategy needs to address the environment as well. In this sense, critical criminology has unveiled certain structures that may also contribute to the etiology of prejudice and bias motivated aggression, which have not been discussed in this study. One such theory is critical race theory (see Crenshaw, 2011 for an overview). This theory focuses on the structurally embedded character of race relations and oppression in society, and often reacts against the psychometric – or empirical in general – approaches outlined above. In this sense, it has an explicit normative focus, as questions pertaining to race are rooted in ideology, with a view to change social reality (e.g. Lipsitz, 2011). It has its historical roots in legal scholarship, but is finding its way into a wide array of other disciplines, including psychology (see Adams & Salter, 2011 for an overview). CRT tends to be self-reflexive and challenges mainstream conceptions of race, more precisely the methodologies, individualistic approaches, and atomistic conceptions of race applied in a variety of social scientific research. That is, racism (and presumably generalized prejudice) is not considered to be an individual bias, but a *sociocultural problem* reproduced in the everyday experiences of people and both professional and academic praxis.

Another such theory, which attaches great importance to the notion of reproduction of a culture of hate, is Perry's theory of "doing difference". Perry (2001, 2002) theorizes that modern state hierarchies are based on *dominance over difference*. A range of hierarchies based on differences with respect to race, gender, sexual orientation and others characterizes modern society. Another key concept in the theory is "*belonging*": individuals will consider them to be part of a groups that share similar characteristics with respect to the various dimensions social stratification is based on. These groups are referred to as in-groups. In the formation of in-groups, it ought to be noted that a process of *antagonism* plays an important role as well: belonging in this sense entails a clear depiction of what one is not: the out-group. Further, according to Perry the creation of the in-group is *hegemonic*: those who are not like the in-group are *feared* and thus resisted. In principle, thus a binary classification system along certain dimensions such as sexuality and race is created in which the antagonistic out-groups are excluded given the threat they pose to the in-groups' identity. This is in essence what Perry means by "doing difference": difference is actively sustained in a process of antagonistic and hegemonic identity construction, through labor, power, sexuality and cultural relations. Thus, hate is reproduced throughout society, structurally, culturally, as well as institutionally.

Whilst these theories and approaches fall outside of the scope of this study, which is essentially focuses on individual-level mechanisms, it must be pointed out that the general context that these and like theories describe will in large part determine the success of the processes and practices discussed in the previous section (i.e. conferencing and shaming). The more a culture of hate exists, the less efficient these strategies may be. The message to take away from this section is, not surprisingly, that an efficient strategy to deal with prejudice cannot be based on the individual alone. In the next section, I will briefly consider a rather holistic preventive approach to crime in general, and apply it to the subject matter of this study.

4.3. The fundamental importance of social crime prevention

The second general recommendation regarding policy is to stress the importance of crime prevention programs. This type of program is all the more important taking into account the difficulties that have been discussed regarding classical approaches to bias motivated aggression. Furthermore, so-called “micro-aggressions” (Constantine, 2007) can be mentioned here as well; these are the type of bias motivated behaviors that are not necessarily covered by any form of criminal law, but can nevertheless have a devastating impact on people’s lives, given the fact that any form of bias motivated behavior is targeted at the very essence of what one is. In this same vein, a chain of tiny events that may seem not so important to the outside world, can easily result in the same devastating effects as does one more serious incident. In a criminal justice system that usually deals with a snapshot, these types of matters are increasingly difficult to deal with, especially if the “perpetrator”¹⁰⁷ is not clear, or if more than one perpetrators are involved (e.g. Walters & Hoyle, 2012). Finally, it ought to be remembered that the binary classification of “offender” and “victim” may not hold in many real-life cases of bias motivated behaviors, but that both parties violate one another in a spiral of events. For all of these reasons, it is obviously better to prevent than to cure, as the cure might be more complicated than what our justice systems are equipped with.

When preventing crime, a plethora of different strategies may be followed. Even though social crime prevention may seem the best way to go about the prevention of prejudice and bias motivated behaviors, given the largely social nature of the process and the heavy thumb it places on subjective perceptions and transmission mechanisms, this alone hardly ever suffices as these strategies tend to be overly broad (Tilley, 2009). Instead, a holistic approach to the prevention

¹⁰⁷ I intentionally put the word perpetrator between brackets as micro aggressions are not usually criminalized forms of behaviors. It follows in the logic of criminal justice that one cannot speak of a perpetrator in such cases.

of bias motivated behaviors is in order. An expert in this particular domain is Tore Bjørgo, who identifies nine preventative mechanisms, which all interact with each other. Below, all of these preventative mechanisms will be discussed (Bjørgo, 2013). For the main mechanisms (from the point of view of the theory developed in this study), the following elements will be discussed: the group(s) targeted by the mechanism, the actors involved, the part of the model described in this study it acts upon, the strengths and benefits of the mechanism, and the limitations. For certain other mechanisms, such as the disruption of bias motivated acts, the discussion will be limited, as this type of mechanism does not relate to the theory developed in the current study. Given the rather complex nature of prejudice and bias motivated behaviors, some of these mechanisms will seem to be in contradiction with each other when applied to the theory developed in this study, a fact that is mostly due to the group or individual targeted by the mechanism. In any case, devising a concrete and holistic prevention strategy aimed at successfully reducing bias motivated behaviors and prejudice will prove to be all but a simple task.

4.3.1. Creating normative barriers against and preventing the emergence of bias motivated behaviors

The first mechanism concerns the creation of normative barriers which will help people refrain from performing certain acts. In this section I will also deal with Bjørgo's second mechanism, i.e. the prevention of the emergence of prejudice and bias motivated behaviors, as the two are intrinsically linked theoretically. It has become a widely accepted notion in contemporary criminology that crime in principle is a form of "moral rule breaking" (Wikström & Sampson, 2006; Wikstrom & Svensson, 2010; Wikstrom & Treiber, 2009). In the current study, it also appeared that norms and their maintenance were fundamental elements in the evolution of human group living, which, in turn, entails prejudice if this sociality becomes limited to the in-group in the face of threat or competition ascribed to certain out-groups.

Mechanism and measures. In light of the current study, aggression directed towards out-group members can be considered to be sanctioned when the in-group is at risk, either in the form of threat (especially for genuinely pro-social people) or competition (especially for deceptively pro-social people). Through this process, the general norm of non-violence may become limited to the in-group, whilst the out-group in question may face either exploitative or defensive violence. So regarding prevention, the key is to avoid the out-group being excluded from this non-violence norm, which can only be done if there is no perception of threat or conflict that can be ascribed to this out-group. Thus, the question is not so much *creating a new norm*, but

rather *extending the field of application* of an existing norm (when prejudice and bias motivated behaviors are already present), or *preventing its limitation* to a certain group of people (when it is not)¹⁰⁸. Measures to achieve this are targeted at eliminating the separation of a specific group from the notion “in-group”, and should have a broad scope. In principle, this comes down to a visible inclusion of out-group members in everyday life activities, such as political life, tv-shows, presenters, community initiatives, and so on, so the out-group is not perceived as a threat to values or resources, or as a competitive group in the hierarchy of society.

Target group. The target group of this preventative mechanism should be both broad and specific. Society at large may obviously benefit from this type of measure, as it may provide for more resilience towards pressures that might otherwise lead them towards prejudice or bias motivated behaviors. However, it can also be targeted at risk groups (which are more prone to prejudice and bias motivated behaviors, e.g. because of a more intensive exposure thereto) or problematic groups (which are already prejudiced and/or involved in bias motivated behaviors). Building normative barriers for problematic groups will prove to be more difficult, but restoratively inspired processes such as the conferencing approach described above may prove to be helpful in this context. For at risk groups, a more targeted approach may be desirable, for example in the form of bringing them in close contact and cooperation with potential (at risk) out-group members in order to achieve a superordinate goal. The latter has been proven to be successful in social psychological studies (e.g. Sherif, 1988), and may be as simple as putting different people together in a football team, as suggested by the research of Kurzban and colleagues (Kurzban, Tooby & Cosmides, 2001).

A final group which should not be forgotten are the victims, for two reasons. The first reason is quite obvious: because of the harm suffered. The second reason is less obvious, and relates to the above discussion on the (relative) interchangeability of the labels “victim” and “offender”. For, if victims are left without, there is a risk they will become equally biased towards the perpetrator’s group (e.g. Walters & Hoyle, 2012) This might at first seem a strange reasoning, but remember that one of the main sources of prejudice is threat, accompanied by a sense of (existence linked) injustice. Therefore, victims – so perceived by the person in question

¹⁰⁸ In this context it is also possible that well-intended campaigns combating prejudice and/or bias motivated aggression may have the unintended consequence of actually separating an out-group from an in-group, or at least draw attention to what differentiates the out-group from the in-group.

– should be attended to *on both sides of the conflict* at hand, again consistent with restorative justice theory as discussed above.

Actors involved. The actors involved are a broad group of people, in part depending on the target groups. In case of the general population, the actors involved are, *inter alia*, politicians, NGO's, media, community initiatives, religious leaders, producers of music/television/film, all the way down to the man in the street (e.g. family members, peers, “random” people). When talking about more specialized groups (risk and problematic groups), the level of specialization of actors involved should increase as well. There, one would need assistance of social workers, psychologists, prison staff, etc. It must be borne in mind, however, that inclusion of community members is always a good idea – as the core animating principle in the model generated in this study finds its origins in human sociality – be it that the process itself be guided by professionals.

Strengths and weaknesses. An obvious strength of this approach is that it is targeted at the core animating principle (or “social regularity” or “social law” if you want) in the model developed in this study. As indicated earlier, the aim is not to install new norms or eliminate certain norms in people's minds – which is difficult – but rather to change the field of application of a norm. That is, alter the perception of the person involved, that is, changing the initial conditions by which this norm of pro-sociality instantiates, which will automatically bring about a change in the social phenomenon at hand. Furthermore, the field of application of this strategy is broad, ranging from entire populations (primary), to risk groups (secondary), problem groups (tertiary), and even victims. With regard to the latter two groups, installing moral barriers ties in nicely with the restoratively inspired processes described earlier, which were also aimed at changing the offender's perception of conflict/competition, not so much at installing an entirely new kind of morality.

The weaknesses in this approach are rather straightforward. When altering the perception of someone, it all depends on the strength of the social bonds this individual has with certain groups, and how he or she defines his or her own identity in terms of membership in certain groups. If, for example, someone is highly socialized in an extremist group, this strategy is not likely to yield a positive outcome, if no additional measures are taken (i.e. removal from that group and resocialization for an extended period of time). To put it short, this strategy is most likely to yield the best results for groups of people that have no to weak social bonds with biased groups, which are at lower risk of committing bias motivated aggression in the first place. On

the bright side, it is preventative *pur sang*, as it might prevent people from developing such bonds over time. So, this strategy alone will be too general to really make difference, and more is needed.

With regard to the two different types of pro-sociality described in this study, the mechanisms of creating normative barriers and preventing the emergence of prejudice and bias motivated aggression, should theoretically be relatively invariant. Whilst it is certainly true that genuinely pro-social people will be more efficiently dealt with in this way, deceptively pro-social people also have a stake in mimicking pro-sociality. For both, however, the key is to redefine their in-group and to change their perception of threat or competition emanating from a certain out-group.

4.3.2. (Perceived) deterrence

Mechanism. Even though at first sight it might seem strange to talk about deterrence when this has just been questioned severely given the unintended consequences it can result in, it may be an important element in picture holistic preventive strategy. The mechanism involved relates to the quintessential role punishment has played in the evolution of human sociality, and more precisely the *bystander effect* (and, by extension, transmission mechanisms). As discussed in the literature review, looking at people getting punished has a positive effect on bystanders in terms of norm obedience. That is, when people see rule-breakers getting punished, this incites them to follow the rules as well. For this reason, strong legislation and strong responses (not necessarily punitive ones!) to bias motivated behaviors are desirable in order to maintain compliance to non-discriminatory norms by the wider public. This has to be balanced, however, with the earlier discussion on possible adversary effects of a punitive response (where a restorative response might have the same impact while taking away the benefit of committing the act in terms of signaling).

Actors involved. The actors involved in this process are primarily the police, and the criminal justice system. However, as the process leading to prejudice cannot be regarded as an all-or-nothing game, some kind of social control would be desirable as well, in the sense that a “deterrent” or at least a disapproving response to early signs of prejudice has the best results. Criminal justice can only intervene when the person already is severely biased, and/or when certain morally reprehensible acts have been committed. Social control is something, however, that can only grow in a bottom-up fashion given that it is executed by the public at large, and is

therefore dependent on the first preventative mechanism, i.e. building normative barriers against prejudice and bias motivated aggression.”

Strengths and weaknesses. The main strength of this mechanism is that it may reinforce the moral barriers to prejudice and bias motivated aggression of third parties, i.e. parties not involved or with low degrees of membership in prejudice/bias motivated aggression. In this sense, the mechanism is also firmly rooted in the theory tested in this study, as it relates directly to the bystander effect. The flipside is that it will be relatively inefficient towards people highly socialized in prejudiced groups which are prone to bias motivated behaviors. The bystander effect only works when the punishment is carried out by one or more members of one’s perceived in-group. Specifically for the case of prejudice and bias motivated behaviors, if someone finds him- or herself in such a group, punishment by an “outside group” is likely to have no to little deterrent effect, and may even have an adversary effect insofar as it may incite more bias motivated behaviors through the mechanism of costly signaling. So, as a form of primary prevention it may well work, but, as a stand-alone measure, not for secondary or tertiary prevention.

4.3.3. Disruption of bias motivated acts

This mechanism aims at preventing planned actions to take place, thus preventing victimization and third-party negative consequences of bias motivated behaviors through an *in-terrorem* effect. Even though this mechanism may prove to be especially useful in case of large-scale organized bias motivated groups, it may not be of primary importance in individual cases of bias motivated aggression – the focus of this study. For the process leading up to bias motivated behaviors is a gradual one, and it may be impossible for law-enforcement officials and investigators to uncover all the “hot spots” in society in this respect, especially if it concerns individuals which do not have explicit ties to more organized biased groups.

4.3.4. Protecting vulnerable targets and reducing harmful consequences of bias motivated behaviors

Protecting vulnerable targets can be considered to be of primary importance in cases of imminent bias motivated behaviors. Whilst this strategy, again, is more likely to yield results in cases of well-organized prejudiced groups, it may prove difficult to implement in isolated cases of bias motivated behaviors and prejudice. The reason is the same, i.e. that it is not always possible to foresee individual bias motivated behaviors. On the basis of this study, a good way to (indirectly) protect vulnerable targets is to change the perception of potential offenders

regarding the competitive or threatening character of specific out-groups, as this is a root cause of both prejudice and bias motivated behaviors. Such initiatives should have a broad as well as a specific scope, and should be initiated as soon as possible. One possible strategy to obtain this is to work through superordinate goals, as these have proven to eradicate prejudice against out-groups, or to target the mechanism of coalitional computation by changing the marker one is associated with as was the case in the experiment by Kurzban and colleagues (2001).

If bias motivated behaviors have taken place, it is of the utmost importance that the victims are attended to. In this sense, it is important that they feel accepted by the broader community, and that they also learn to see that not all members of the perpetrator's in-group are likely to behave in a biased way. The benefits of this are twofold. First, it can provide for a barrier against the *in-terrorem* effect bias motivated behaviors often result in by depicting the act as an isolated event rather than a structural phenomenon. Second, it can stop a spiral of prejudice to occur. For, once bias motivated behaviors have occurred, the perpetrator's group is likely to be perceived as threatening as well, which, in turn, may result in prejudice. In this sense, a restoratively inspired process may be of interest, as this type of intervention is explicitly aimed at the victim and its inclusion in the community (e.g. Walters, 2014; Walters & Hoyle, 2012).

4.3.5. Reducing rewards

Even though the potential rewards of bias motivated behaviors have been theorized on at some length above, it is worth mentioning them briefly again here. As discussed, insofar as bias motivated behaviors can be considered to be an instance of signaling one's commitment to the in-group (or pro-sociality), the main reward is *status* or *reputation* from fellow in-group members, the in-group being defined subjectively by the perpetrator. This means a punitive response from society at large may not render the result hoped for as this is not necessarily the in-group as perceived by the offender. The same holds for deterrence. It may even well be so that a punitive response increases the cost of the signal the offender wishes to send to his fellow group-members, thus rendering it more powerful. This, in turn, leads to a higher status or reputation rather than a lower one. Caution is thus warranted when implementing this strategy.

One alternative way is described restoratively inspired process as described above. An important element to take into account when trying to implement a strategy aimed at reducing the rewards for bias motivated behaviors is the in-group as perceived by the offender. People usually are not part of just one social group, but many. Further, people also often tend to simplify notions such as their "in-group" (*pars pro toto*), and may not be aware of the fact that

other members of that same group may well think entirely differently. This way, when organizing a restoratively inspired intervention, it is of the utmost importance to guarantee a fruitful composition of the audience present. These ought to include as many people as possible that are close to the offender, but condemn his acts. Then, and only then, will it result in a potential successful change of behavior through effective removal of rewards (in this case a positive reputation or higher status). Obviously, this cannot come in a prefabricated formula, but needs to be determined on a case-to-case basis.

4.3.6. Incapacitation

The idea of incapacitation is appealing in the case of crime prevention as it renders offenders incapable of doing further harm. Again, I think this is foremost applicable to well-organized and relatively small groups, but may be less efficient in non-organized cases of prejudice and bias motivated aggression. First, the idea stands in contradiction to the above mentioned rewards for bias motivated behaviors, for which alternatives can be sought such as a restorative approach. Apart from that, it seems again that an indirect form of incapacitation seems to be preferable over what might be called “hard” incapacitation. With this, I am pointing towards a more efficient “policing” of hate speech and potential sources of incitement, such as internet fora, social events, and especially political speech, as the latter is often a source of legitimization of biased speech and acts.

4.3.7. Disengagement

Of course, disengagement is a primary aim of any prevention strategy. With regard to the current study, disengagement centers around the same two basic elements of the theory: a perception of danger and/or competition, and what is perceived to be the in-group. From the point of view of the theory discussed in this study, both can be considered to be necessary conditions for bias motivated aggression to occur. Alterations to these perceptions may, as a consequence, lead to an alteration in behaviors (different instantiation of pro-sociality). Again, a restoratively inspired process may provide for a good template to achieve the goal of disengagement. This type of process may be used as a stage on which the alleged “competitive” or “dangerous” out-group is presented as an allied group to the offender’s perceived in-group, preferably in the sense of contributing to a superordinate goal, as the latter strategy has already proven to be very successful in reducing prejudice and bias motivated behaviors (e.g. Sherif, 1988).

5. A final thought: no “myth of pure evil”

The above discussion has shed more light on important theoretical issues and possible avenues to combat prejudice and bias motivated aggression. Even though these can be considered to be valuable findings, perhaps the most important finding of this study has not yet been discussed in depth. What the evolutionary backdrop of prejudice and bias motivated behaviors clearly suggests, is the fact that *everybody is susceptible to it*, to differing degrees depending on their perception of the in-group and their perception of threat and/or competition. This absolutely does not imply that “racism is inborn” or anything of the like, leave alone that bias motivated behaviors can be excused on the basis that it is “only natural”. The only thing that is natural about it, is the fact that the mechanism that *may* lead up to prejudice is inborn. This mechanism, however, does not automatically lead to prejudice, for this is entirely dependent on the initial conditions which instantiate it.

This is an important message. All too often, prejudice and bias motivated behaviors are seen as a distinct category of behaviors, as a “myth of pure evil” to use the expression of Baumeister’s (1997). Rather opposed to that idea stands the idea developed in this study, an idea that has become mainstream among criminologists and victimologists alike, i.e. that many “evils” are mainly reactions to specific situations, or perceptions thereof, rather than inspired by a purely malevolent intention on behalf of the perpetrator. Of course, this might sometimes seem rather strange when looking upon specific instances of bias motivated behaviors, which are often of a heinous and incomprehensible nature. Insofar as the theory developed in this study holds, these behaviors might be considered to be morally justified¹⁰⁹ in the eyes of the perpetrator, rather than being considered to be a breach of a moral rule. This idea was derived from the evolution of human sociality, as well as current thinking in victimology as well as legal theory.

However, that moral rule – essentially being based on reciprocity – has been essential in the evolution of human sociality. Therefore, it is a fundamental dynamic in contemporary society to which all of us, notwithstanding our moral beliefs, are susceptible. This implies that everyone of us is equally susceptible to prejudice and bias motivated behaviors, given that they are specific instances of an inborn sense of right and wrong, bound by certain initial conditions.

¹⁰⁹ This will especially be the case for genuinely pro-social people (and, as a consequence, people high in RWA). As discussed at length in this study, deceptively pro-social people have a different motivation to present themselves as pro-social. Nonetheless, it may still be that they react upon what they perceive to be a moral imperative of the in-group they are part of, otherwise their (deceptive) behavior would not count as an instance of signaling pro-sociality to that in-group.

The message basically is a simple one: “the prejudiced” is not a different kind of person from any of us, all of us bear in ourselves the inherent capacity for prejudice and bias motivated behaviors. This was already suggested by Gordon Allport (1979), and has once again been corroborated in this study from a different theoretical point of view.

While people often tend to think of themselves as “not prejudiced” and “good group members”, the risk on prejudice is still equally great. In the modular mind approach (Kurzban, 2010), different specialized modules co-exist at the same time. Within these modules, contradictory information can exist at the same time. From this, it can be derived that it is perfectly possible that people may seem very altruistic and caring in many situations, but may be prejudiced nonetheless in other situations. It really depends on the context and how certain out-groups are perceived. Further, it is not because people genuinely reject prejudice and bias motivated behaviors, that they de facto are not prejudiced in one way or the other. How many times does one not hear the phrase “I am not prejudiced, but...”, a typical instance where such contradiction comes to the surface. Oftentimes, however, it remains hidden, and may provide for a seed of further and more intensified prejudice in the future, if, and only if, the initial conditions are right.

Taking stock of the entire discussion above, I think the most efficient way to deal with prejudice and bias motivated behaviors starts with *each individual person*. An awareness of the innate dynamics that may give rise to prejudice and bias motivated behaviors, may enable (empower) people to take them into closer account. Evolved mechanisms often operate in an unconscious way, but this does not preclude the fact that people can be made aware of them, which may in turn affect their behavior. Dealing with prejudice and bias motivated behaviors should not be left to officials alone, it is a shared responsibility of all of us. The first place where prejudice should be eradicated or contained, is us ourselves. This may ripple through society (*inter alia* through horizontal transmission mechanisms), and provide for a much more solid barrier against prejudice and bias motivated behaviors.

Chapter VIII. General Conclusion

The idea that lies at the basis of this study is the observation that prejudice and bias motivated aggression remain widespread in our contemporary society, notwithstanding the great efforts that have been taken to combat or reduce it. Those efforts consist of policy measures as well as research investigating the phenomenon, primarily in social psychology. This indicates that the phenomenon prejudice might not be understood well enough yet; that certain lacunae exist in theorizing on the topic. As a consequence, the general and primary goal set out in this study was to further the study of prejudice and bias motivated aggression, by expanding the theoretical underpinnings of the phenomenon. This general goal was specified in terms of philosophy of science in the first chapter, where it was considered to be a *conceptual problem*, in the sense that current theorizing on prejudice and bias motivated aggression “*fails to utilize concepts from other, more general theories to which it should be logically subordinate*” (Laudan, 1977: 146).

The latter claim, that current theorizing fails to utilize concepts of more general theories to which they should be logically subordinate, has its roots in the observation that (i) prejudice and bias motivated aggression occur in every society worldwide, to differing degrees, (ii) that prejudice and bias motivated aggression are of all times, and (iii) that current theorizing is spatiotemporally localized, which may explain the lack of rooting in a more general theory. The first two observations give a clear indication of the “more general” theory to which current theorizing should be logically subordinate: *evolutionary theory*. The rationale for this is that the phenomenon is so widely spread and so omnipresent throughout history, which makes it extremely unlikely to be a random mutation. Prejudice and bias motivated aggression can thus be considered to have been functionally adaptive in the evolution of mankind.

In chapter two, the evolutionary backdrop of contemporary prejudice and bias motivated aggression was discussed. There, the main argument was that human sociality is, to a large extent, forged in conflict and competition. Two theoretical strands are of importance here. The first is *parochial altruism* (e.g. Choi & Bowles, 2007), according to which human sociality is in large part the result of intergroup conflict. In the human ancestral past, hunter-gatherers were obliged to move from place to place in order to secure the scarce resources available to them. This inevitably leads to encounters with other hunter gatherers, in search of the same scarce resources. In such a competitive environment, in-group cooperation is favored by selection, as it increases the chances on securing the scarce resources available. Thus, cooperation is

parochial in a context of conflict or competition, as people will cooperate with the in-group, but exclude out-group members. In a similar vein, Kurzban et al. (2001) argue that, in that very same hostile and competitive environment, a specific cognitive module evolved, which they call *coalitional exploitation*. This specific module is designed to identify the in-group, competing out-groups, and allied out-groups on the basis of arbitrary markers (markers that only have coalitional meaning). Both use the same background, the Late Pleistocene living conditions of humanity, as a starting point, and are complementary even though they evolved in quite different theoretical terms (whilst the former adopts a group-selection model, the latter does not).

In the evolution of sociality, *signaling* is of great importance. As group living cannot be sustained unconditionally, penalizing mechanisms are necessary for it to thrive (e.g. Bowles & Gintis, 2011). These come down to *punishment and/or exclusion of bad reciprocators*. As people will only tend to interact with people that will reciprocate, directly or indirectly, the status of being a good reciprocator gains in importance. For this reason, people *will signal their commitment to the in-group* in various ways, for example by “taking one for the group”. The quality of such a signal, which contributes to reputation, is dependent on the cost that one bears for the group, without eventually benefitting from this “investment” him- or herself: the greater the cost, the stronger the signal. Quite similar to the peacock’s tail.

However, not all signals are genuine signals of commitment to the in-group. As people evolved, detection of defectors or cheaters became more refined. Cheaters or defectors themselves, however, also evolved more refined cheating strategies, making it more difficult to detect them. Cheating without being detected has a great evolutionary advantage, as one can enjoy the benefits of group-living, without investing heavily in it. In principle, this is an instance of what Trivers (1971) called *subtle cheating*. As a consequence, two distinct types of signaling related to group-living emerged: *genuine* signaling of commitment to the in-group, and *deceptive* signaling of commitment to the in-group.

Whilst both forms of signaling in principle are an intra-group affair, they can be easily transposed to the inter-group level through the mechanism of *coalitional computation*. For, if the in-group is threatened by or in competition with a certain out-group, this provides for signaling opportunities. In this sense, one can signal commitment to the in-group by standing up for the in-group in the face of danger or competition. Both forms of signaling apply. Those who have an inclination to genuinely signal their commitment to the in-group, will do so

because they feel it is the right thing to do; they *like* it. Throughout evolution, in-group cooperation has become a salient and enforceable norm, and people that genuinely care about this norm will be happy to apply it. On the other hand, those inclined to deceptively signal their commitment to the in-group, will also be provided with opportunities to enhance their status in the face of out-group threat or competition. Even though their motive is more selfish, they will tend to avoid being exposed as a cheater. By doing so, they enhance their reputation, which enables them to reap more benefits of in-group cooperation. This way, both forms of signaling can be linked back to the two forms of signaling that emerged from the evolution of human sociality.

Even though this mechanism makes sense from an evolutionary point of view, it needs to be translated to contemporary society before it can be actually tested. In the third chapter, the main theories that are invoked to explain prejudice and bias motivated aggression in social psychology were reviewed. From the field of social psychology, the main player in explaining prejudice, Duckitt's (e.g. 2001) dual process model which consists of right wing authoritarianism and social dominance orientation, and integrated threat theory (e.g. Stephan & Stephan, 2000). All of these approaches are highly compatible with the evolutionary explanation of prejudice and bias motivated aggression. For right wing authoritarianism and social dominance orientation, literature already indicated that they may have their roots in evolved psychological mechanisms. The theoretical framework in this study has clearly elaborated and exposed these evolutionary roots in detail.

As was argued in the fourth chapter, the dual process model was selected for the empirical test of the study, for a variety of reasons. The main reasons were that this theory is the most widely used in the study of prejudice, and that it makes explicit reference to evolutionary theory. With regard to the latter, the main point of attachment is a theoretical piece by Cohrs and Kessler (2007), in which right wing authoritarianism is conceptualized as being a result of the evolution of human sociality. The current study can be regarded as the first empirical test of this conjecture. Further, the theoretical model to be tested was also deduced in this chapter. The main variables included in the model are deceptive signaling of sociality, genuine signaling of sociality, social dominance orientation, right wing authoritarianism, prejudice and bias motivated aggression. In this model, two main paths are present. One path leads from genuine signaling of sociality to right wing authoritarianism (as predicted by Cohrs and Kessler, 2007), then from right wing authoritarianism to prejudice, and from prejudice to bias motivated aggression. The second path runs from deceptive signaling of sociality to social dominance

orientation, from social dominance orientation to prejudice, and from prejudice to bias motivated behaviors. Both paths were predicted by the theory, and the empirical study supports them.

To further challenge the model, group comparisons were conducted. For each study, a *group comparison based on sex* was conducted. This is an important test of the model, given that the cognitive mechanism that underlies prejudice and bias motivated behaviors have evolved because of a functionally adaptive reason – dealing with group conflict and competition – that is sex-invariant. In other words, it is not related to sex-specific roles such as parental investment and the like. Notwithstanding slight variations in effect sizes, presumably due to interference from other biologically determined factors such as violence, and cultural variation, the direction of the results should be the same for both contexts. The empirical studies supported this claim, providing corroborating evidence for the theory and the hypotheses derived from it.

A second group comparison was conducted on the basis of the *country* where the study was conducted. Given the evolutionary nature of the mechanism studied, the theoretical model should be upheld in different national settings. The rationale behind this is that the module that gives rise to, *inter alia*, prejudice and bias motivated aggression is so fundamental in the evolution of human sociality, that it should be found everywhere. The group comparison corroborated this prediction, lending support to the theory developed in this study. Notwithstanding slight differences in effect sizes, all predicted paths were present in both countries.

In the discussion of this study, some links were drawn with other research areas, and policy implications were presented. A first interesting field the study can be connected to is the field of *victimology*. Following Fattah (2008), the study suggests that prejudice and bias motivated behaviors are, to a large extent, inspired by a sense of *perceived injustice or victimization* at the hands of certain out-groups. This is especially the case for genuinely pro-social people, where a dangerous worldview plays an important role in the etiology of prejudice and bias motivated aggression. Following this, it was suggested that *restorative approaches* may be better suited to deal with prejudice and bias motivated aggression, as it may temper the root cause of prejudice, i.e. the perception of (i) danger associated with an out-group, and (ii) may present the out-group as allied rather than hostile.

It has been argued, however, that restorative approaches such as conferencing can also be beneficial for those inclined to deceptively signal their commitment to the in-group. For these

people, their own status and power are the primary reasons to act pro-socially. A restorative process can actively remove this reward, and expose them as defectors to the community. Again, this strikes at the very heart of the study, where signaling played an important role.

The central element of signaling further revealed that a strictly punitive response can possibly result in an *unintended consequence*. Even though punitive enforcement of anti-discriminatory legislation in principle aims at reducing rates of bias motivated aggression or deterring potential offenders, the current study suggests an adversary effect can be the result thereof. For, the success of signaling correlates strongly with the cost of the signal. As *punitive responses significantly increase the cost of a signal*, such as an act of bias motivated aggression, it is dubious if this will really deter any “convinced” bigot. Notwithstanding the deterrent effect it may have on moderately prejudiced people, those already socialized in a prejudiced environment are deemed to be less susceptible to deterrence.

In this regard, *prevention* is a far more advisable strategy in dealing with prejudice. Prevention was discussed along the lines set out by Tore Bjørgo (2013), who discusses nine preventive mechanisms which interact and complement each other in order to achieve a successful, integral preventive strategy. Even though all of the nine preventive mechanisms can be applied to prejudice and bias motivated aggression, the one mechanism that strikes at the core of the current study is the mechanism of *creating moral barriers* against prejudice and bias motivated aggression. In the current study, *norms* have been theorized as being central to the evolution of human sociality. In our contemporary world, norms of equality and non-violence have become predominant, which appears from the lowering levels of violence throughout history, which is extensively illustrated by Pinker (2011). But, the mechanisms of parochial altruism and coalitional psychology may result in a limited application of these norms. That is, whenever danger or competition are perceived from an out-group, those norms may get neutralized through prejudice. For this reason, it is of the utmost importance to ensure that out-groups are not perceived as being either dangerous or competitive. This type of prevention relates to one of the core principles outlined in the study, and provides a platform on which many other preventive strategies can be built.

Apart from these substantive aspects of the study, a secondary goal was to apply the work of Karl Popper as it was originally formulated in *The Logic of Scientific Discovery* (2002 [1959]) to the social sciences. Overall, I think it is clear that it can be applied, in the sense that it can serve as a guiding light through research. Throughout the entire study, from problem

formulation over theory, methodology, results and their interpretation, and the evaluation of the theory once tested, the work of Popper has proven to be useful. Personally, I was at first struck by the logical simplicity and rigor of Popper's Logic of Scientific Discovery some years ago. I am also happy I have had the chance to apply it to the social sciences, and I hope this proves to the reader that philosophy of science can indeed be a great ally in the social sciences. It is especially in the social sciences, where concepts and measurement are often vague, personal interpretations and expectations trouble the researcher's vision, and ideological considerations often provide for nuisance in the research trajectory, that a clearly delineated scientific-philosophical framework can be of great use (Popper's or any other for that matter).

Further, given that the logic of Popper's epistemology could in fact be applied to the social sciences also shows that the gap between the natural sciences and the social sciences is not as big as it is usually presumed to be. Even though it is true that the subject matter of the social sciences differs to some extent from the natural sciences, this need not imply that the same *logic of scientific enquiry* cannot be applied. This is more about an attitude and a way of working than the subject matter at hand. Surely, our measurements are often less precise than those in the natural sciences, and surely we cannot use certain research designs as do natural scientists in laboratory settings, but does this really imply that we cannot follow the same logic in the research process? I am absolutely convinced the same logic can be applied, and I hope the reader concurs on the basis of the exploratory application of Popper's work to the social sciences in this study. In this context, it is my hope that the social sciences (and criminology in particular) will embrace similar principles to those in the natural sciences, in order to strengthen their overall research capacity.

On a final note, and now I turn back to the substance of the study, I would like to end with some commonsensical advice. Looking back at the results of the study, prejudice and bias motivated aggression should not be regarded in the sense of a "myth of pure evil". Rather than thinking of it as what "others" are, or as a stable personality trait, or as a characteristic of "bad" people, it ought to be conceived of as the result of a very fundamental cognitive module that is present in all people all over the world. This does imply that everyone, without any exception, is *susceptible to* prejudice and bias motivated aggression *if the conditions are right*, and, as an extension, that everybody does display prejudice to a certain degree, how small it may be. On the bright side, it has also been clearly stated that there are no "innate" grounds for prejudice; the markers are arbitrary and completely depend on the context, more precisely a *subjective perception* thereof. This also means that prejudice need not remain present in our world; indeed,

as Kurzban et al. state, “race can be erased” (2011), and the best place to start erasing prejudice, is us ourselves. First by becoming aware of possible prejudices we hold ourselves, and second, by addressing prejudiced speech and acts in our own environments, how little they may be. The only way to deal with prejudice, is through a form of collective responsibility.

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Appendix M.1. Pretest of the study

The pretest of the first version of the survey was conducted in Belgium. A paper and pencil version of the survey was administered to a class of criminology students during the class of quantitative research methods. The total number of students was 124, which is sufficient to test the reliabilities of the measurement scales and to conduct some preliminary analyses. The pretest will be described in detail in this section. In this pretest report, some measures are reported that are not included in the final study making up this PhD. The reason for this is that they either performed poorly in terms of internal consistency, or that they were included for experimental/exploratory purposes, for later usage.

1. Pro-social tendencies measure

The measure used is a translated version of the “pro-social tendencies measure” as developed by Carlo et al. (Gustavo Carlo, Hausmann, Christiansen, & Randall, 2003; G. Carlo & Randall, 2002). This measure is the main predictor of the study, in which the relationship between pro-sociality and prejudice is examined. This measure was chosen because it reflects six different kinds of pro-social tendencies, and thus provides a greater analytic potential than, say, a standard measure on altruism.

The table below lists the factor solution of the pro-social tendencies measure.

<i>Factor scores pro-social tendencies</i>						
	Factor					
	1	2	3	4	5	6
1. Ik help andere mensen vooral als er anderen op staan te kijken	0.05	0.09	-0.06	-0.14	-0.13	0.48
2. Als anderen in de buurt zijn, is het makkelijker voor mij om mensen in nood te helpen	-0.06	-0.11	-0.22	-0.15	-0.17	0.55
3. Anderen helpen voelt goed wanneer er anderen in de buurt zijn	0.14	0.07	-0.31	-0.74	-0.06	0.62
4. Als anderen me vragen hen te helpen, doe ik dit direct	0.30	0.10	0.35	0.20	0.82	-0.30
5. ik reageer direct als anderen me om hulp vragen	0.39	0.13	0.55	0.17	0.74	-0.23
6. Een van de beste dingen aan anderen helpen is dat het me er goed doet uitzien	-0.08	-0.18	0.11	0.69	0.29	-0.50
7. Ik denk dat geld of goederen doneren beter werkt als men hier zelf ook een voordeel kan uithalen	-0.17	-0.15	0.03	0.49	0.20	-0.18
8. Als ik iemand help, moeten ze mij in de toekomst ook helpen	-0.38	0.17	0.23	0.49	-0.12	0.00
9. Ik heb de neiging mensen te helpen die in een crisissituatie zitten	0.34	0.04	0.43	0.08	0.34	-0.22
10. Doorgaans help ik mensen die zich ernstig verwond hebben	0.19	0.19	0.37	-0.01	0.16	-0.07
11. Het doet me plezier als anderen me complimentjes geven als ik iemand geholpen heb	0.09	-0.11	0.13	-0.40	0.03	-0.15
12. Ik help anderen snel als ze in nood verkeren	0.24	0.11	0.97	0.10	0.33	-0.24

13. Ik doneer geld het liefst anoniem	-0.02	0.44	0.03	0.03	0.27	0.01
14. Ik help het liefst mensen in nood als ze niet te weten komen dat ik hen geholpen heb	-0.10	0.83	0.23	-0.01	-0.12	0.08
15. Als ik iemand help, heb ik liever dat de persoon in kwestie dit niet weet	-0.01	0.77	0.18	-0.03	0.11	0.01
16. Het is niet belangrijk dat mensen weten wie hen geholpen heeft	-0.07	0.38	0.13	0.31	0.28	-0.03
17. Het geeft me een goed gevoel iemand die verdrietig is te troosten	0.46	-0.16	0.17	-0.05	0.31	-0.14
18. Ik help anderen vooral als ze triest of depressief zijn	0.64	0.09	0.26	-0.19	0.21	-0.02
19. Ik reageer het best op vragen om hulp als de situatie erg emotioneel geladen is	0.64	-0.00	0.05	-0.26	0.15	0.17
20. In emotionele situaties krijg ik een drang om mensen in nood te helpen	0.69	-0.20	0.14	-0.13	0.31	-0.08

The factor structure yielded does reflect the six categories of behavior, but the factor scores are relatively low for the majority of variables. Furthermore, three items (16, 20 and 22) had to be excluded from the analysis as they yielded communality > 1, resulting in the failure to yield a solution.

Inspecting the Cronbach's alpha's yields the following solution:

	Translated scale (Dutch)	Original scale (U.S.)
Public pro-social behavior	0.52	0.78
Altruistic pro-social behavior	0.52	0.74
Emotional pro-social behavior	0.70	0.75
Anonymous pro-social behavior	0.70	0.85
Dire pro-social behavior	0.59	0.63
Compliant pro-social behavior	0.83 ¹¹⁰	0.80

2. empathic concern and perspective taking

The empathic concern and perspective taking scales were those available from the Davies Personal Reactivity Index. A Dutch version of the scales is available on the website. The items were forced into two factors, based on theoretical grounds (Davies Personality Reactivity Index). A free solution yields two more factors, both considerably smaller than the principal ones, and both corresponding to either PT only or EC only. Internal consistency is acceptable,

¹¹⁰ It should be mentioned that only two items measured this subtype, and that it is likely that the alpha is an overestimation of the real consistency.

with an alpha value of 0.715 for empathic concern and an alpha of 0.706 for perspective taking. The two factor structure is presented in the table below.

<i>Factor scores empathic concern and perspective taking</i>		
	Factor 1	2
1. Ik geloof dat er twee zijden zijn aan elke vraag en probeer te kijken naar beide	0.72	-0.01
2. Ik probeer naar ieders kant van een meningsverschil te kijken alvorens ik een beslissing neem	0.60	-0.24
3. Ik probeer mijn vrienden soms beter te begrijpen door me in te beelden hoe de dingen eruit zien vanuit hun perspectief	0.59	-0.03
4. Alvorens iemand te bekritisieren, probeer ik mij voor te stellen hoe ik mij zou voelen mocht ik in hun plaats zijn	0.58	0.13
5. Wanneer ik overstuur ben door iemand probeer ik mezelf meestal voor een tijdje in zijn schoenen te plaatsen	0.52	0.02
6. Als ik zeker ben dat ik over iets gelijk heb, verspil ik niet veel tijd aan het luisteren naar andermans argumenten	0.32	0.12
7. Ik vind het soms moeilijk de dingen te zien vanuit andermans standpunt	0.31	0.06
8. Ik voel me vaak bezorgd over mensen die minder gelukkig zijn dan ik	0.19	0.58
9. Wanneer ik iemand zie waarvan wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	0.10	0.37
10. Ik ben vaak nogal geraakt door de dingen die ik zie gebeuren	0.06	0.61
11. Andermans ongelukken verstoren me meestal niet veel	0.03	0.50
12. Ik zou mezelf beschrijven als een vrij teerhartig persoon	0.02	0.51
13. Soms heb ik niet veel medelijden met andere mensen wanneer ze problemen hebben	-0.12	0.56
14. Wanneer ik zie dat iemand unfair wordt behandeld, voel ik soms weinig medelijden met hen	-0.15	0.50

The two factors correlated weakly with another (i.e. $r=0.20$).

3. Right wing authoritarianism scale

The RWA scale does not load on one specific factor nicely. A solution of three (even four in the unrestricted solution in which item 7 is a single item) factors was adopted given that the scale theoretically consists of three dimensions. In the original version, items 3, 5, 9 reflect the authoritarian aggression dimension, items 1, 2, 4, 6, 11 reflect the authoritarian submission dimension, and items 7, 8, 10 reflect the conventionalism subscale. Unfortunately, these dimensions are not reflected in the factor structure yielded by the factor analysis. The reason for this may be the lack of diversity in the sample (I did note frequent responding patterns while coding the questionnaires), or the small sample size. Cronbach's alpha for this scale is acceptable at 0.66, which is rather low but acceptable.

Factor scores right wing authoritarianism

	Factor		
	1	2	3
1. Onze samenleving heeft nood aan vrije denkers die het aandurven de gevestigde waarden in twijfel te trekken, ook al bevalt dit vele mensen niet	0.78	-0.19	-0.06
2. Onze traditionele waarden volgen is nog steeds de beste manier van leven	0.56	0.02	-0.09
3. Eerder dan zomaar aan te nemen wat gevestigde autoriteiten zeggen, zou onze samenleving meer openheid moeten hebben tegenover mensen die voor zichzelf durven denken.	0.51	0.04	0.35
4. Om de vrijheid van meningsuiting te verdedigen, moeten we zelfs de publicatie van literatuur die tegen onze ideeën indruist, toelaten	0.38	-0.17	0.03
5. Veel mensen bekritisieren de gevestigde autoriteiten en negeren de normale manier van leven, hoewel deze net goed zijn	0.37	0.19	0.15
6. De normen van onze samenleving moeten strikt nageleefd worden. Overtredingen van deze normen moeten streng bestraft worden	0.45	0.41	-0.16
7. Men zou meer respect en bewondering voor onze voorouders moeten hebben voor wat ze voor onze maatschappij hebben gedaan, zeker in deze tijden waar er krachten aan het werk zijn om onze maatschappij kapot te maken	0.09	0.27	0.06
8. Er zijn vele radicale of immorele personen die de zaken willen verpesten voor ons. De samenleving moet hen tegenhouden	-0.04	0.56	0.06
9. Elke goede burger zou mee moeten helpen om het kwaad dat onze samenleving bedreigt uit te roeien als dit nodig blijkt te zijn	-0.12	0.62	-0.07
10. Onze samenleving heeft nood aan sterke leiders om onruststokers, criminelen en perverse types tot de orde te roepen	-0.18	0.55	0.09
11. Onze samenleving zou er beter uitzien als we wat meer tolerantie en begrip aan de dag zouden leggen voor niet-conventionele opvattingen	0.02	0.04	0.30
12. Onze samenleving zou er op vooruit gaan moesten we oproerkraaiers menselijk behandelen en zo tot inzicht trachten te brengen	-0.08	0.00	0.78

Even though some factor have small loadings on the factors, internal consistency cannot be increased by deleting items from the list:

<i>Item-Total Statistics</i>	
	Cronbach's Alpha if Item Deleted
1. Onze samenleving heeft nood aan sterke leiders om onruststokers, criminelen en perverse types tot de orde te roepen	0.65
2. Onze samenleving heeft nood aan vrije denkers die het aandurven de gevestigde waarden in twijfel te trekken, ook al bevalt dit vele mensen niet	0.64
3. Onze traditionele waarden volgen is nog steeds de beste manier van leven	0.64
4. Onze samenleving zou er beter uitzien als we wat meer tolerantie en begrip aan de dag zouden leggen voor niet-conventionele opvattingen	0.65
5. De normen van onze samenleving moeten strikt nageleefd worden. Overtredingen van deze normen moeten streng bestraft worden	0.61
6. Eerder dan zomaar aan te nemen wat gevestigde autoriteiten zeggen, zou onze samenleving meer openheid moeten hebben tegenover mensen die voor zichzelf durven denken.	0.61
7. Veel mensen bekritisieren de gevestigde autoriteiten en negeren de normale manier van leven, hoewel deze net goed zijn	0.62
8. Men zou meer respect en bewondering voor onze voorouders moeten hebben voor wat ze voor onze maatschappij hebben gedaan, zeker in deze tijden waar er krachten aan het werk zijn om onze maatschappij kapot te maken	0.64
9. Er zijn vele radicale of immorele personen die de zaken willen verpesten voor ons. De samenleving moet hen tegenhouden	0.63
10. Om de vrijheid van meningsuiting te verdedigen, moeten we zelfs de publicatie van literatuur die tegen onze ideeën indruist, toelaten	0.66
11. Onze samenleving zou er op vooruit gaan moesten we oproerkraaiers menselijk behandelen en zo tot inzicht trachten te brengen	0.65
12. Elke goede burger zou mee moeten helpen om het kwaad dat onze samenleving bedreigt uit te roeien als dit nodig blijkt te zijn	0.65

The three factors extracted correlate moderately: there is a correlation of .30 between factors 1 and 2, and a correlation of 0.31 between factor 3 and 1, and a correlation of .22 between factors 2 and 3.

4. Social dominance orientation

The SDO scale performs well in a one factor structure. However, a free exploratory factor analysis yields a three factor structure. In the three factor structure, the third factor only contains one item with a factor score >0.4. The two factors seem to revolve around a distinction between “group equality” and “dominance”. It is notable that the factors consist of either the inversely scored items (marked grey), or the regularly scored items (no marking). Both elements are valid dimension of social dominance theory. Cronbach’s alpha does very well for the scale: 0.88.

<i>Factor scores SDO</i>			
	Factor 1	2	3
1. Alle groepen van personen zouden gelijke kansen moeten krijgen in het leven	0.82	-0.06	-0.11
2. Het zou goed zijn als alle groepen van personen gelijkwaardig zouden zijn	0.73	0.01	0.05
3. Gelijkheid tussen de verschillende groepen van personen in de samenleving zou ons ideaal moeten zijn	0.68	0.05	0.18
4. We zouden minder problemen kennen als we alle groepen van mensen meer gelijk zouden behandelen	0.66	-0.25	0.26
5. We zouden er naar moeten streven de inkomens tussen leden van verschillende groepen met gelijkwaardige kwalificaties zo gelijk mogelijk te maken	0.65	-0.04	-0.27
6. Ik ben voorstander van een toegenomen sociale gelijkheid	0.58	0.21	0.02
7. We zouden al het mogelijke moeten doen om de lat gelijk te leggen voor de verschillende groepen	0.47	0.06	0.23
8. Soms moeten bepaalde groepen van personen op hun plaats gehouden worden	0.28	0.40	-0.01
9. Het is waarschijnlijk een goede zaak dat sommige groepen aan de top van de ladder staan en andere groepen onderaan	0.18	0.56	0.13
10. Inferieure groepen zouden op hun plaats moeten blijven	0.16	0.70	-0.180
11. Om vooruit te komen in het leven, is het soms nodig om andere groepen van mensen de pas af te snijden	0.05	0.36	0.20
12. Superieure groepen zouden inferieure groepen moeten domineren	0.02	0.64	0.11
13. De waarde van sommige sociale groepen is groter dan die van andere	-0.08	0.67	-0.10
14. Als sommige groepen op hun plaats zouden blijven, zouden we minder problemen kennen	-0.19	0.61	0.13
15. Soms is het nodig geweld te gebruiken tegen leden van andere groepen om de doelstellingen van de eigen groep te bereiken	-0.24	0.39	0.35
16 Geen enkele groep van mensen zou mogen domineren in de samenleving	0.21	0.02	0.67

5. Threat perception

The threat scale performs excellent in terms of internal consistency, which appears from the Cronbach's alpha value of 0.92. With regard to the factor structure, the scale is unable to discern between symbolic and realistic threat. Items one through 4 are deemed to be symbolic threat, whilst items 5 through 13 are deemed to be realistic threat, according to integrated threat theory. The free exploratory factor analysis shows a different picture, however. There are two clearly distinct factors, i.e. items 1 through 9 on the one hand, and 10 through 13 on the other. From a theoretical point of view, this is interesting, given that items 10 to 13 usually are not included in threat scales, and the fact that both types of threat cannot usually be discerned. On the basis of this structure, one could argue that the "real" realistic threats consist of threats to physical

evidence, rather than those usually deemed to be realistic threats. One possible explanation is that most people do not have issues with, for example, access to health care, but can think immigrants pose a risk thereto. This basically renders the threat symbolic in the true sense of the word.

<i>Factor scores threat perception</i>		
	Factor	
	1	2
1. Educatieve waarden (bv. waarden die in scholen worden aangeleerd, de invloeden waaraan kinderen in scholen worden blootgesteld)	0.74	<i>0.03</i>
2. Familiale waarden (bv. waarden t.a.v. bejaarden, gelijkheid tussen mannen en vrouwen, opvoeding)	0.40	<i>0.30</i>
3. Religieus geloof (bv. religie, geloofsbeleving)	0.47	<i>0.30</i>
4. De tradities van onze cultuur (bv. vieren van nationale/Vlaamse feesten, Belgische/Vlaamse gewoonten)	0.51	<i>0.09</i>
5. Toegang tot werk	0.64	<i>0.10</i>
6. Toegang tot de gezondheidszorg (bv. beschikbaarheid van artsen, mogelijkheid om de nodige zorgen te krijgen in het hospitaal)	0.73	<i>-0.09</i>
7. Toegang tot het onderwijssysteem (bv. beschikbare plaatsen in scholen, bijstand bij onderwijs, kwaliteit van onderwijs, beschikbaarheid van leerkrachten)	0.77	<i>-0.01</i>
8. Toegang tot sociale bijstand (bv. huishoudhulp, werkloosheidsvergoedingen)	0.79	<i>-0.08</i>
9. De economische stabiliteit van ons land (bv. de werkm Markt, werkloosheidscijfers, pensioensysteem)	0.60	<i>0.21</i>
10. Gezondheid (voorbeeld gevaar: blootstelling aan ziekten)	<i>0.14</i>	0.45
11. Uw persoonlijke veiligheid (voorbeeld gevaar: waarschijnlijkheid om slachtoffer te worden van een misdrijf)	<i>0.06</i>	0.87
12. De openbare orde (voorbeeld gevaar: misdadcijfers, mafia)	<i>-0.12</i>	0.99
13. De veiligheid van het land (voorbeeld gevaar: de waarschijnlijkheid dat een grootschalige aanval voordoet)	<i>-0.02</i>	0.93

6. Blatant prejudice

The blatant prejudice scale performed well in terms of internal consistency, and in terms of the factor structure. Item 13 has a significantly lower factor score compared to the other items. The scale performs well in terms of Cronbach's alpha, with a value of 0.79 that cannot be increased by removing (an) item(s).

<i>Factor scores blatant prejudice</i>		
	Factor	
	1	2
1. Ik zou er geen probleem mee hebben als een allochtoon van een gelijkaardige socio-economische status door huwelijk deel zou gaan uitmaken van mijn naaste familie	0.99	-0.18
2. Ik zou er geen probleem mee hebben een seksuele relatie aan te gaan met een allochtoon	0.82	-0.06
3. Als ik later kleinkinderen krijg, zou het me niet storen dat deze er fysiek (bv. huidskleur) anders uitzien dan de mensen van mijn kant van de familie	0.59	0.13
4. Ik zou er geen probleem mee hebben als een goed gekwalificeerde allochtoon mijn overste (baas) zou worden	0.52	0.18
5. Allochtonen zijn even eerlijk als autochtonen	<i>0.37</i>	<i>0.37</i>
6. Allochtonen en autochtonen zullen nooit echt met mekaar kunnen opschieten, ook al zijn ze soms vrienden	<i>0.32</i>	<i>0.27</i>
7. Allochtonen hebben jobs die eigenlijk aan autochtonen toebehoren	<i>0.27</i>	0.47
8. De meeste allochtonen zouden perfect kunnen leven zonder overheidssteun als ze een beetje hun best deden	<i>0.20</i>	0.57
9. De meeste politici in België geven meer om allochtonen dan om autochtonen	<i>0.02</i>	0.38
10. Het feit dat allochtonen van minder goede rassen afstammen verklaart waarom ze doorgaans minder goed af zijn	<i>-0.18</i>	0.75

The two factors that emerge in this exploratory factor analysis are rather strongly correlated ($r = 0.68$). The distinction between both is compatible with the distinction Pettigrew and Meertens make with regard to the “threat and rejection” subscale (items 1 through 6) and the “intimacy” subscale (items 7 through 10). Only item three loads on the other subscale, and item 6 has cross loadings on both. The scale can thus be used as one composite scale.

7. Subtle prejudice

The subtle prejudice scale (variant of McConahay) scores good in terms of internal consistency, with a Cronbach’s alpha of 0.86, which cannot be increased by removing one or more items from the scale.

In the two factor solution, two items stand out on the second factor: 1 and 6. While coding it was clear that almost everyone responded to these items in a similar fashion. This might be an effect due to the specific group to which the pretest was distributed, and might disappear once the group is made more heterogeneous and larger. The two factors correlate rather strongly, with an r of 0.56.

Factor scores subtle prejudice

	Factor	
	1	2
1. Allochtonen krijgen te weinig aandacht in de media	0.63	-0.20
2. De multiculturele maatschappij is een vooruitgang	0.60	0.01
3. Allochtonen worden te veeleisend in hun streven naar gelijke rechten	0.58	0.20
4. Het is gemakkelijk om de woede van allochtonen hier in België te begrijpen	0.57	0.10
5. Er zijn speciale programma's nodig om jobs te creëren voor allochtonen	0.52	-0.05
6. De vraag voor gelijke rechten vanwege allochtonen is gemakkelijk te begrijpen	0.52	0.16
7. Er werden reeds genoeg programma's uitgedokterd om allochtonen aan het werk te krijgen	0.34	0.14
8. Discriminatie tegen allochtonen is geen probleem meer in België	0.11	0.50
9. Racistische groepen zijn geen bedreiging meer voor de allochtonen	-0.15	0.91

8. Empathic concern and perspective taking towards immigrants

Here, the items of the empathic concern and perspective taking scales are reproduced, but geared towards immigrants specifically. This was done by replacing “someone” by “an immigrant” for example. Some items were omitted as they did not allow such a reformulation. Whilst the internal consistency of empathic concern was good, that of perspective taking was simply horrible.

Factor scores parochial empathic concern and perspective taking

	Factor	
	1	2
1. Wanneer ik zie dat allochtonen unfair worden behandeld, voel ik soms weinig medelijden met hen	0.89	-0.15
2. Het ongeluk van allochtonen doet me doorgaans niet veel	0.87	-0.15
3. Doorgaans heb ik niet veel medelijden met allochtonen wanneer ze problemen hebben	0.62	0.17
4. De argumenten van allochtonen met betrekking tot hun situatie doen me niet veel, ik weet beter hoe de vork in de steel zit	0.60	0.14
5. Ik heb vaak tedere, bezorgde gevoelens voor allochtonen die minder gelukkig zijn dan ik	0.45	0.21
6. Wanneer ik zie dat van allochtonen wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	0.33	0.43
7. Ik probeer allochtonen soms beter te begrijpen door me in te beelden hoe de dingen eruit zien vanuit hun perspectief	0.02	0.73
8. Ik vind het soms moeilijk de dingen te zien vanuit het standpunt van allochtonen	0.01	0.13
9. Alvorens allochtonen te bekritisieren, probeer ik mij voor te stellen hoe ik mij zou voelen mocht ik in hun plaats zijn	-0.03	0.73
10. Wanneer ik overstuur ben door een allochtoon probeer ik mezelf meestal voor een tijdje in zijn schoenen te plaatsen	-0.04	0.13

Cronbach's alpha for the empathic concern items is 0.83, which is good, and of the perspective taking scale 0.03, which is non-existent. No factor analysis of this scale will be presented.

9. Bias motivated behaviors

The results for bias motivated behaviors can be found in the table below. First, the results of "peer racism" as measured by concrete behaviors is presented.

<i>Frequencies bias motivated behaviours of peers</i>			
	Responses		Percent of Cases
	N	Percent	
1. Een allochtoon uitgescholden	80	47.6	95.2
2. Gespuwd naar een allochtoon	6	3.6	7.1
3. Gedreigd om een allochtoon te slaan	33	19.6	39.3
4. Iets naar een allochtoon geworpen	7	4.2	8.3
5. Een allochtoon gevolgd of achternagezeten	10	6.0	11.9
6. Goederen van een allochtoon beschadigd (bv. auto)	5	3.0	6.0
7. Een allochtoon geslagen of gestampt	18	10.7	21.4
8. Een allochtoon met een voorwerp geslagen of gestampt	5	3.0	6.0
9. Een allochtoon beroofd	3	1.8	3.6
10. Een allochtoon met een scherp voorwerp gestoken	1	0.6	1.2
Total	168	100.0	200.0

From this table, it appears that the majority of respondents report having friends that have called immigrants names. This is followed by threatening to beat an immigrant and de facto beating an immigrant. If we consider the results of respondents' own bias motivated behaviors, then, we get the following results.

<i>Frequencies Self-reported bias motivated behaviors</i>			
	Responses		Percent of Cases
	N	Percent	
1. Een allochtoon uitgescholden	31	54.4	88.6
2. Gespuwd naar een allochtoon	1	1.8	2.9
3. Gedreigd om een allochtoon te slaan	9	15.8	25.7
4. Iets naar een allochtoon geworpen	2	3.5	5.7
5. Een allochtoon gevolgd of achternagezeten	5	8.8	14.3
6. Goederen van een allochtoon beschadigd (bv. auto)	1	1.8	2.9
7. Een allochtoon geslagen of gestampt	7	12.3	20.0
8. Een allochtoon met een voorwerp geslagen of gestampt	1	1.8	2.9
Total	57	100.0	162.9

Again, scoffing at immigrants is the most frequent behavior, followed by threatening to beat an immigrant and de facto beating an immigrant. If we consider the motives for this behavior, we get the following results.

<i>Frequencies motives for bias motivated behaviors</i>			
	Responses		Percent of Cases
	N	Percent	
1. Ik wou mijn mensen beschermen tegen allochtonen	8	29.6	66.7
2. Ik werd hiertoe aangezet door mijn vrienden	1	3.7	8.3
3. Ik werd hiertoe aangezet door mijn familie	2	7.4	16.7
4. Ik werd hiertoe aangezet door een persoon die ik respecteer. buiten mijn familie of vrienden	1	3.7	8.3
5. Ik wou mijn omgeving tonen dat ik voor hen opkom	6	22.2	50.0
6. Ik wou indruk maken op mijn omgeving	2	7.4	16.7
7. Ik wou gewoon wat plezier maken. en het was een geschikt doelwit	1	3.7	8.3
8. Ik wou wraak nemen voor al wat allochtonen ons aandoen	2	7.4	16.7
9. Ik wou wraak nemen voor al wat allochtonen mijn familie hebben aangedaan	1	3.7	8.3
10. Ik wou wraak nemen voor wat allochtonen mijn vrienden ooit hebben aangedaan	1	3.7	8.3
11. Ik wou wraak nemen voor wat allochtonen mij ooit hebben aangedaan	2	7.4	16.7
Total	27	100.0	225.0

The most frequent motive for doing things to an immigrant is self-protection. This is followed by an interesting motive which is very much in line with signaling theory: showing to one's environment that one stands up *for them*. Frequencies are very low. however; it seems not all respondents who reported bias motivated behaviors indicated a reason thereof. Given the very low prevalence this measure is discarded in further studies.

Appendix M.2. Survey of the pretest

SOCIALE REACTIVITEIT EN DIVERSITEIT

Welkom bij de studie naar sociale reactiviteit en diversiteit. De studie bestaat uit drie delen. In een eerste deel worden enkele vragen gesteld naar uw omgang met de mensen uit uw omgeving. De bedoeling van dit deel van de survey is om enkele nieuwe vormen van interpersoonlijk gedrag in kaart te brengen. In een tweede deel worden enkele vragen gesteld omtrent uw wereldbeeld. Er is immers een enorme diversiteit aan opvattingen, en hier zouden we graag beter zicht op krijgen.

In een derde deel, worden enkele vragen gesteld naar uw mening over diversiteit in België. Vaak ziet men in de media en politiek bepaalde visies naar voor geschoven worden, en u zelf zal ongetwijfeld ook discussies over diversiteit hebben gevoerd met vrienden en familie. De bedoeling is om u een platform te geven om, **op volstrekt anonieme wijze**, uw mening over diversiteit recht voor de raap te geven. In dit tweede deel van de survey willen we ons een beeld vormen van wat er onder de mensen zelf leeft: ***durf spreken!*** Uw mening is immers de mening die telt!

Het invullen van de vragenlijst neemt ongeveer 20 minuten in beslag. Het is niet de bedoeling om over elke stelling lang na te denken, tracht te antwoorden wat bij het lezen van de stelling intuïtief bij u opkomt. De gegevens worden op een volledig anonieme wijze verzameld, het is dus op geen enkele manier mogelijk om u als persoon te identificeren op basis van uw antwoorden.

Graag danken wij u voor uw medewerking,

Het onderzoeksteam

Voor meer informatie en/of vragen met betrekking tot de resultaten: ben.heylen@ugent.be

In dit deel van de vragenlijst worden enkele vragen gesteld met betrekking tot uzelf als persoon. Zoals je weet, kunnen mensen zeer verschillend reageren in dezelfde situaties. We zouden door deze vragen een beter beeld willen krijgen van deze diversiteit. We zouden je willen vragen iedere stelling te lezen en het antwoord dat het eerst in je opkomt te omcirkelen. We willen er ook op wijzen dat er hier geen "juiste" of "foute" antwoorden mogelijk zijn, alle mogelijkheden zijn even goed mogelijk. Het belangrijkste is dat je neerschrijft wat jou als persoon het beste omschrijft in de omgang met de mensen waarmee u dagdagelijks in contact komt (bv. familie, vrienden, ...).

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
1	Ik help andere mensen vooral als er anderen op staan te kijken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Het geeft me een goed gevoel iemand die verdrietig is te troosten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Als anderen in de buurt zijn, is het makkelijker voor mij om mensen in nood te helpen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Een van de beste dingen aan anderen helpen is dat het me er goed doet uitzien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Anderen helpen voelt goed wanneer er anderen in de buurt zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik heb de neiging mensen te helpen die in een crisissituatie zitten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Als anderen me vragen hen te helpen, doe ik dit direct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Ik doneer geld het liefst anoniem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Doorgaans help ik mensen die zich ernstig verwond hebben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Ik denk dat geld of goederen doneren beter werkt als men hier zelf ook een voordeel kan uithalen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Ik help het liefst mensen in nood als ze niet te weten komen dat ik hen geholpen heb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Ik help anderen vooral als ze triest of depressief zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Het doet me plezier als anderen me complimentjes geven als ik iemand geholpen heb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Ik help anderen snel als ze in nood verkeren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Als ik iemand help, heb ik liever dat de persoon in kwestie dit niet weet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Als men tijd en geld aan liefdadigheid spendeert, zou men hier meer erkenning voor moeten krijgen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Ik reageer het best op vragen om hulp als de situatie erg emotioneel geladen is	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Ik reageer direct als anderen me om hulp vragen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Het is niet belangrijk dat mensen weten wie hen geholpen heeft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
20	Ik vind liefdadigheid nuttig omdat het goed op mijn CV staat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	In emotionele situaties krijg ik een drang om mensen in nood te helpen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Ik doneer vaak anoniem geld omdat ik me er goed bij voel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Als ik iemand help, moeten ze mij in de toekomst ook helpen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Als je dan denkt aan de mensen waarmee je dagdagelijks in contact komt (bv. uw vrienden, familie, ...), in hoeverre zijn de volgende stellingen dan van u op toepassing? De antwoordcategorieën zijn ongeveer dezelfde als voorheen. Geef simpelweg het antwoord dat als eerste spontaan bij je opkomt; goede of slechte antwoorden bestaan niet met betrekking tot de stellingen.

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
1	Ik voel me vaak bezorgd over mensen die minder gelukkig zijn dan ik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Ik vind het soms moeilijk de dingen te zien vanuit andermans standpunt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Soms heb ik niet veel medelijden met andere mensen wanneer ze problemen hebben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ik probeer naar ieders kant van een meningsverschil te kijken alvorens ik een beslissing neem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Wanneer ik iemand zie waarvan wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik probeer mijn vrienden soms beter te begrijpen door me in te beelden hoe de dingen eruit zien vanuit hun perspectief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Andermans ongelukken verstoren me meestal niet veel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Als ik zeker ben dat ik over iets gelijk heb, verspil ik niet veel tijd aan het luisteren naar andermans argumenten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Wanneer ik zie dat iemand unfair wordt behandeld, voel ik soms weinig medelijden met hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Ik ben vaak nogal geraakt door de dingen die ik zie gebeuren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Ik geloof dat er twee zijden zijn aan elke vraag en probeer te kijken naar beide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Ik zou mezelf beschrijven als een vrij teerhartig persoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Wanneer ik overstuur ben door iemand probeer ik mezelf meestal voor een tijdje in zijn schoenen te plaatsen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
14	Alvorens iemand te bekritisieren, probeer ik mij voor te stellen hoe ik mij zou voelen mocht ik in hun plaats zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hieronder volgen een aantal vragen in verband met je **wereldbeeld**. Iedereen heeft wel een andere kijk op de wereld, en die diversiteit zouden we graag vatten. Geef voor elk van onderstaande stellingen aan in hoeverre u het daarmee eens bent, door een kruisje in het juiste vakje te zetten. Onthoud dat de vragenlijst volledig anoniem is, en er zeker geen “juiste” of “foute” antwoorden zijn. Antwoord simpelweg wat intuïtief direct bij je opkomt.

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
1	Onze samenleving heeft nood aan sterke leiders om onruststokers, criminelen en perverse types tot de orde te roepen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Onze samenleving heeft nood aan vrije denkers die het aandurven de gevestigde waarden in twijfel te trekken, ook al bevalt dit vele mensen niet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Onze traditionele waarden volgen is nog steeds de beste manier van leven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Onze samenleving zou er beter uitzien als we wat meer tolerantie en begrip aan de dag zouden leggen voor niet-conventionele opvattingen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	De normen van onze samenleving moeten strikt nageleefd worden. Overtredingen van deze normen moeten streng bestraft worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Eerder dan zomaar aan te nemen wat gevestigde autoriteiten zeggen, zou onze samenleving meer openheid moeten hebben tegenover mensen die voor zichzelf durven denken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Veel mensen bekritisieren de gevestigde autoriteiten en negeren de normale manier van leven, hoewel deze net goed zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Men zou meer respect en bewondering voor onze voorouders moeten hebben voor wat ze voor onze maatschappij hebben gedaan, zeker in deze tijden waar er krachten aan het werk zijn om onze maatschappij kapot te maken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Er zijn vele radicale of immorele personen die de zaken willen verpesten voor ons. De samenleving moet hen tegenhouden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Om de vrijheid van meningsuiting te verdedigen, moeten we zelfs de publicatie van literatuur die tegen onze ideeën indruist, toelaten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Onze samenleving zou er op vooruit gaan moesten we oproerkraaiers menselijk behandelen en zo tot inzicht trachten te brengen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
12	Elke goede burger zou mee moeten helpen om het kwaad dat onze samenleving bedreigt uit te roeien als dit nodig blijkt te zijn					
13	De waarde van sommige sociale groepen is groter dan die van andere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	We zouden al het mogelijke moeten doen om de lat gelijk te leggen voor de verschillende groepen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Soms is het nodig geweld te gebruiken tegen leden van andere groepen om de doelstellingen van de eigen groep te bereiken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Als sommige groepen op hun plaats zouden blijven, zouden we minder problemen kennen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	We zouden minder problemen kennen als we alle groepen van mensen meer gelijk zouden behandelen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Om vooruit te komen in het leven, is het soms nodig om andere groepen van mensen de pas af te snijden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Geen enkele groep van mensen zou mogen domineren in de samenleving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Gelijkheid tussen de verschillende groepen van personen in de samenleving zou ons ideaal moeten zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Alle groepen van personen zouden gelijke kansen moeten krijgen in het leven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Ik ben voorstander van een toegenomen sociale gelijkheid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Superieure groepen zouden inferieure groepen moeten domineren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Het is waarschijnlijk een goede zaak dat sommige groepen aan de top van de ladder staan en andere groepen onderaan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	We zouden er naar moeten streven de inkomens tussen leden van verschillende groepen met gelijkwaardige kwalificaties zo gelijk mogelijk te maken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Soms moeten bepaalde groepen van personen op hun plaats gehouden worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Het zou goed zijn als alle groepen van personen gelijkwaardig zouden zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Inferieure groepen zouden op hun plaats moeten blijven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Welk is in uw ogen de meest legitieme autoriteit in België (bv. staat, kerk, ...)? schrijf voluit.	.....			

Zie ommezijde voor vervolg a.u.b.!

C: Uw mening over diversiteit in België

Zoals je weet wonen er in België verschillende bevolkingsgroepen, met elk hun eigen gewoonten en normen, bv. allochtonen en autochtonen. Zowel in de straat als in de politiek wordt er vaak gespeculeerd over hoe men met de verschillen tussen autochtonen en allochtonen dient om te gaan. Hier wordt vaak echter geen rekening gehouden met wat de **mensen zelf** denken over deze kwestie. We willen je hier de kans geven om uw eigen mening te geven, door aan te geven in welke mate je het al dan niet eens bent met een aantal stellingen. Net zoals de vorige keer bestaat er geen juist of fout antwoord, en vragen we je eerlijk en spontaan te antwoorden wat het eerst in je opkomt.

In hoeverre denk je dat allochtonen de volgende zaken in gevaar brengen? Gebruik de volgende schaal om te antwoorden: helemaal niet, slechts weinig, een beetje, redelijk wat, veel.						
		<i>Helemaal niet</i>	<i>slechts weinig</i>	<i>Een beetje</i>	<i>Redelijk wat</i>	<i>Veel</i>
1	Educatieve waarden (bv. waarden die in scholen worden aangeleerd, de invloeden waaraan kinderen in scholen worden blootgesteld)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Familiale waarden (bv. waarden t.a.v. bejaarden, gelijkheid tussen mannen en vrouwen, opvoeding)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Religieus geloof (bv. religie, geloofsbeleving)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	De tradities van onze cultuur (bv. vieren van nationale/Vlaamse feesten, Belgische/Vlaamse gewoonten)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Toegang tot werk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Toegang tot de gezondheidszorg (bv. beschikbaarheid van artsen, mogelijkheid om de nodige zorgen te krijgen in het hospitaal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Toegang tot het onderwijssysteem (bv. beschikbare plaatsen in scholen, bijstand bij onderwijs, kwaliteit van onderwijs, beschikbaarheid van leerkrachten)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Toegang tot sociale bijstand (bv. huishoudhulp, werkloosheidsvergoedingen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	De economische stabiliteit van ons land (bv. de werkmakrt, werkloosheidscijfers, pensioensysteem)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Gezondheid (voorbeeld gevaar: blootstelling aan ziekten)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Uw persoonlijke veiligheid (voorbeeld gevaar: waarschijnlijkheid om slachtoffer te worden van een misdrijf)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	De openbare orde (voorbeeld gevaar: misdadafcijfers, mafia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	De veiligheid van het land (voorbeeld gevaar: de waarschijnlijkheid dat een grootschalige aanval voordoet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Met de volgende stellingen zouden we willen weten hoe je denkt dat de situatie van de allochtonen in België er uitziet. Geef telkens aan in welke mate je het al dan niet eens bent met de stelling, en tracht

zo spontaan mogelijk te antwoorden. De vragenlijst is anoniem, en er zijn geen goede of slechte antwoorden. De antwoordcategorieën blijven dezelfde.

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
1	Discriminatie tegen allochtonen is geen probleem meer in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	De vraag voor gelijke rechten vanwege allochtonen is gemakkelijk te begrijpen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Er werden reeds genoeg programma's uitgedokterd om allochtonen aan het werk te krijgen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Allochtonen krijgen te weinig aandacht in de media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Er zijn speciale programma's nodig om jobs te creëren voor allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Racistische groepen zijn geen bedreiging meer voor de allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Allochtonen worden te veeleisend in hun streven naar gelijke rechten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	De multiculturele maatschappij is een vooruitgang	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Het is gemakkelijk om de woede van allochtonen hier in België te begrijpen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Allochtonen hebben jobs die eigenlijk aan autochtonen toebehoren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	De meeste allochtonen zouden perfect kunnen leven zonder overheidssteun als ze een beetje hun best deden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Allochtonen en autochtonen zullen nooit echt met mekaar kunnen opschieten, ook al zijn ze soms vrienden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	De meeste politici in België geven meer om allochtonen dan om autochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Het feit dat allochtonen van minder goede rassen afstammen verklaart waarom ze doorgaans minder goed af zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Allochtonen zijn even eerlijk als autochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Als ik later kleinkinderen krijg, zou het me niet storen dat deze er fysiek (bv. huidskleur) anders uitzien dan de mensen van mijn kant van de familie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Ik zou er geen probleem mee hebben een seksuele relatie aan te gaan met een allochtoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Ik zou er geen probleem mee hebben als een goed gekwalificeerde allochtoon mijn overste (baas) zou worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
19	Ik zou er geen probleem mee hebben als een allochtoon van een gelijkaardige socio-economische status door huwelijk deel zou gaan uitmaken van mijn naaste familie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Autochtonen zijn beter af dan allochtonen in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Men komt in de straat wel vaak allochtonen tegen, en er wordt ook vaak over gesproken met vrienden, familie en dergelijke. In hoeverre zijn de volgende stellingen met betrekking tot uzelf van toepassing? De antwoordcategorieën zijn:

		<i>Helemaal Eens</i>	<i>Eens</i>	<i>Neutraal</i>	<i>Oneens</i>	<i>Helemaal oneens</i>
1	Ik heb vaak tedere, bezorgde gevoelens voor allochtonen die minder gelukkig zijn dan ik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Ik vind het soms moeilijk de dingen te zien vanuit het standpunt van allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Doorgaans heb ik niet veel medelijden met allochtonen wanneer ze problemen hebben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Wanneer ik zie dat van allochtonen wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Ik probeer allochtonen soms beter te begrijpen door me in te beelden hoe de dingen eruit zien vanuit hun perspectief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Het ongeluk van allochtonen doet me doorgaans niet veel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	De argumenten van allochtonen met betrekking tot hun situatie doen me niet veel, ik weet beter hoe de vork in de steel zit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Wanneer ik zie dat allochtonen unfair worden behandeld, voel ik soms weinig medelijden met hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Wanneer ik overstuur ben door een allochtoon probeer ik mezelf meestal voor een tijdje in zijn schoenen te plaatsen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Alvorens allochtonen te bekritisieren, probeer ik mij voor te stellen hoe ik mij zou voelen mocht ik in hun plaats zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zoals je weet worden allochtonen vaak uitgelachen of uitgescholden, en gedragen mensen zich vaak agressief tegenover hen. Ken je vrienden die ooit dergelijk gedrag tegenover een allochtoon hebben gesteld? Gelieve voor elk gedrag aan te geven of het al dan niet ooit is voorgevallen (door een vriend van u), en hoe vaak dit ongeveer is voorgevallen in de laatste twaalf maanden. Graag benadrukken we nogmaals dat de vragenlijst volledig anoniem is, en dus niemand te weten kan komen wat je geantwoord hebt.

Ken je VRIENDEN die <u>ooit</u> het volgende hebben gedaan		Hoe vaak is dit in de laatste twaalf maanden voorgevallen?
Een allochtoon uitgescholden	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Gespuwd naar een allochtoon	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Gedreigd om een allochtoon te slaan	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Iets naar een allochtoon geworpen	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon gevolgd of achternagezeten	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Goederen van een allochtoon beschadigd (bv. auto)	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon geslagen of gestampt	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon met een voorwerp geslagen of gestampt	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon beroofd	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon met een scherp voorwerp gestoken	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Op een allochtoon geschoten	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon vermoord	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer

En als we dan naar uzelf kijken, hoeveel maal in uw leven hebt u de volgende dingen tegen een allochtoon gedaan? Graag benadrukken we hier nogmaals dat alle antwoorden op een strikt anonieme wijze zullen worden verwerkt, en dus nooit iemand kan te weten komen wat je hebt geantwoord. Het is echter zeer belangrijk voor ons dat je een eerlijk antwoord geeft.

Heb je ooit ZELF <u>ooit</u> de volgende dingen gedaan:		Hoe vaak is dit in de laatste twaalf maanden voorgevallen?
Een allochtoon uitgescholden	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Gespuwd naar een allochtoon	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Gedreigd om een allochtoon te slaan	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer

Iets naar een allochtoon geworpen	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon gevolgd of achternagezeten	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Goederen van een allochtoon beschadigd (bv. auto)	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon geslagen of gestampt	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon met een voorwerp geslagen of gestampt	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon beroofd	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon met een scherp voorwerp gestoken	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Op een allochtoon geschoten	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer
Een allochtoon vermoord	<input type="checkbox"/> nee <input type="checkbox"/> Ja	Ongeveer .....keer

Om verschillende redenen kunnen de bovenstaande gebeurtenissen plaatsvinden? Als u terugdenkt aan de redenen waarom u de bovenstaande zaken hebt gedaan, welke zijn dan van toepassing? (meerdere antwoorden zijn mogelijk)

<i>Waren één of meer van de volgende redenen op toepassing op één of meer van de gedragingen die je hierboven aangaf?</i>		Voor welk incident was dit een reden?
Een allochtoon daagde me uit	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Een vriend van mij werd bedreigd door een allochtoon	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Familie van mij werd bedreigd door een allochtoon	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou mijn mensen beschermen tegen allochtonen	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik werd hiertoe aangezet door mijn vrienden	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik werd hiertoe aangezet door mijn familie	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik werd hiertoe aangezet door een persoon die ik respecteer, buiten mijn familie of vrienden	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....

Ik wou mijn omgeving tonen dat ik voor hen opkom	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou indruk maken op mijn omgeving	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou gewoon wat plezier maken, en het was een geschikt doelwit	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou wraak nemen voor al wat allochtonen ons aandoen	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou wraak nemen voor al wat allochtonen mijn familie hebben aangedaan	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou wraak nemen voor wat allochtonen mijn vrienden ooit hebben aangedaan	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Ik wou wraak nemen voor wat allochtonen mij ooit hebben aangedaan	<input type="checkbox"/> nee <input type="checkbox"/> Ja	.....
Een andere reden (schrijf voluit):		

Concluderende vragen en dankwoord

Vooreerst willen wij u vriendelijk bedanken voor het invullen van deze vragenlijst. Alvorens af te sluiten zouden we nog enkele korte vragen van algemene aard willen stellen.

1	Wat is uw leeftijd?	.....jaar
2	Wat is uw geslacht?	man <input type="checkbox"/> vrouw <input type="checkbox"/>
3	Wat is uw opleidingsjaar? <i>Indien je een aangepast traject volgt, gelieve dan het jaar te geven van het jaar waar je de meeste vakken van volgt.</i>	<input type="checkbox"/> 1 BA <input type="checkbox"/> 2 BA <input type="checkbox"/> 3 BA <input type="checkbox"/> 1 MA <input type="checkbox"/> 2 MA
4	Wat is uw studierichting? 	
5	In welk land ben jij en je ouders geboren?	
	Jezelf	Je vader
	<input type="checkbox"/> België <input type="checkbox"/> Marokko <input type="checkbox"/> Nederland <input type="checkbox"/> Turkije <input type="checkbox"/> Ander land binnen Europa nl.	<input type="checkbox"/> België <input type="checkbox"/> Marokko <input type="checkbox"/> Nederland <input type="checkbox"/> Turkije <input type="checkbox"/> Ander land binnen Europa nl.

Appendix R.1. Survey of the Spanish study

REACTIVIDAD SOCIAL Y DIVERSIDAD

Bienvenido al estudio sobre la reactividad social y la diversidad. El estudio está compuesto de tres partes. La primera parte consiste en algunas preguntas sobre tu interacción con la gente de tu entorno cotidiano. En esta parte, quisiéramos comprender nuevos tipos de comportamiento interpersonal. En la segunda parte, hacemos algunas preguntas sobre tu concepción del mundo. En la tercera parte, te preguntamos sobre tu opinión de la diversidad en España. Así esperamos descubrir la diversidad de concepciones del mundo que existe entre la gente.

Llenar el cuestionario te llevará mas o menos 15-20 minutos. La idea es que no pienses demasiado sobre las preguntas, que simplemente pongas la contestación que se te ocurra espontáneamente. No hay contestaciones “correctas” o “incorrectas”, sólo hay opiniones. Toda la encuesta es **estrictamente anónima**, de modo que nadie pueda descubrir lo que has respondido. En ningún lugar te hacemos preguntas sobre tus detalles personales que podrían identificarte

¡Muchas gracias por tu cooperación!

El equipo de investigadores

Quisieras saber más? Ponte en contacto con ben.heylen@ugent.be!

En este parte del cuestionario te hacemos algunas preguntas sobre ti como persona. Como sabes, cada persona puede reaccionar de forma muy diferente en situaciones parecidas. Quisiéramos comprender más sobre esta diversidad. Por favor, lee las afirmaciones siguientes, e indica si estás de acuerdo o en desacuerdo con la declaración utilizando una escala del 1 (claramente en desacuerdo) al 6 (claramente de acuerdo), pensando en tus interacciones sociales cotidianas con la gente de tu entorno (por ejemplo, familia, amigos, colegas...).

		1 Claramente en desacuerdo	2	3	4	5	6 Claramente de acuerdo
1	Normalmente hago lo que se me pide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Sólo colaboro con otros si yo obtengo algo a cambio; si no prefiero no hacerlo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	A veces, he hecho bullying a otra persona con mis amigos, aunque no estaba en contra de él/ella	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Quiero ser el/la mejor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	A menudo hago cosas que no me gustan, para demostrar que soy parte del grupo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Trabajar en grupo me da la oportunidad de demostrar mi valía sobre los demás	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	A veces he ignorado o excluído a otros por el simple hecho de no ser populares con mis amigos, aunque no les conozca	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Para mí es muy importante no parecer un fracasado/a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	En actividades en grupo me inclino a tomar el mando si esto ayuda a mi grupo a ganar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Si mis amigos me excluyen, me siento mal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Lo mejor de trabajar en equipo es que así puedo mostrar mi valor como persona	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	A menudo, chismorreo de gente con mis amigos/as, aunque no los/las conozca bien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Me gustan los trabajos en grupo sólo si me sirve a mi mismo; los objetivos del grupo me importan poco	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Si mis amigos están haciendo bullying a alguien, normalmente intervengo para que dejen de hacerlo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

De vuelta por favor

Como sabes, hay muchos grupos diferentes en la sociedad. Quisiéramos saber cómo crees que la sociedad trata al grupo al cual perteneces tu mismo, comparado a los otros grupos. Por favor, indique si estas en desacuerdo o de acuerdo con las afirmaciones siguientes.

		1 <i>Claramente en desacuerdo</i>	2	3	4	5	6 <i>Claramente de acuerdo</i>
1	Creo que el grupo al que pertenezco está en una situación más favorable comparado a los inmigrantes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Me enfado cuando me doy cuenta de cómo se trata a los inmigrantes comparado con mi grupo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Creo que los inmigrantes a menudo está discriminado comparado con el grupo al que pertenezco	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Si comparo el grupo al que pertenezco con los inmigrantes, creo que están siendo tratados de forma injusta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Parte 2: tu concepción del mundo

Abajo hay algunas preguntas sobre tu concepción del mundo. Todos tenemos una concepción diferente, y quisiéramos saber más de esta diversidad entre la gente, a diferencia de la concepción presentada por los políticos y los medios. Por favor, lee las afirmaciones siguientes, e indica si estás en desacuerdo o de acuerdo con la afirmación, utilizando la misma escala del 1 (claramente en desacuerdo) al 6 (claramente de acuerdo).

		1 <i>Claramente en desacuerdo</i>	2	3	4	5	6 <i>Claramente de acuerdo</i>
1	Nuestra sociedad necesita líderes fuertes que puedan erradicar el extremismo y la inmoralidad que prevalecen actualmente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Nuestra sociedad necesita libres pensadores, que tengan la valentía para confrontar los convencionalismos, incluso si esto molestase a muchas personas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Las tradiciones y valores antiguos aún nos indican la mejor forma de vivir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Nuestra sociedad sería mejor si mostráramos tolerancia y comprensión por las ideas y valores diferentes (no convencionales)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Las leyes que castigan el aborto y la pornografía, y que contribuyen a proteger el matrimonio deben ser estrictamente acatadas. Las transgresiones deben castigarse severamente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

De vuelta por favor

		1 <i>Claramente en desacuerdo</i>	2	3	4	5	6 <i>Claramente de acuerdo</i>
6	La sociedad necesita mostrar una mayor apertura hacia las personas que piensan por sí mismas y diferente de las autoridades, más que apoyar el que dichas autoridades decidan por nosotros	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Muchas personas desafían al estado, critican a la iglesia e ignoran las formas normales de vida, sin que por ello dejen de ser buenas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Nuestros antepasados deben ser más admirados y respetados por su contribución a la construcción de nuestra sociedad, sobre todo en esta época en que existen fuerzas que tratan de destruirla	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Hay muchas personas radicales o inmorales que tratan de echar a perder las cosas; la sociedad debe frenarlos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	En defensa de la libertad de expresión deberíamos permitir la publicación de literatura que incluso podemos considerar mala o contraria a nuestras ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	La situación de la sociedad actual mejoraría si los agitadores fueran tratados con humanidad e intentando hacerlos entrar en razón	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Cuando nuestro gobierno y autoridades condenan los elementos peligrosos de nuestra sociedad, es el deber de un buen ciudadano ayudar a combatirlos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Deberíamos hacer todo lo posible para igualar las condiciones de los diferentes grupos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	A veces es necesario utilizar la fuerza contra otros grupos para conseguir los objetivos grupales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Ningún grupo debería dominar en la sociedad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	La igualdad entre grupos de personas debería ser nuestro ideal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Todos los grupos de personas deberían tener igualdad de oportunidades en la vida.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Se debe aumentar la igualdad social	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Probablemente es bueno que ciertos grupos estén en una posición superior y otros en una posición inferior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Debemos luchar por conseguir ingresos más igualitarios para miembros de grupos diferentes con competencias parecidas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Los grupos inferiores deberían mantenerse en su posición	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A la vuelta por favor

Su opinión sobre la diversidad en España

Como ya sabes, en España viven muchos grupos sociales extranjeros, con sus propios valores y tradiciones.. Igual en la calle que en la política, se discuten las relaciones entre los inmigrantes y los españoles. Por favor, indica en qué medida sientes que, a causa de los inmigrantes, están en peligro algunas cuestiones. Como antes, no hay contestaciones correctas o incorrectas, solo hay opiniones. Recuerda también que el cuestionario es totalmente *anónimo*.

¿En qué medida siente usted que, a causa de los inmigrantes, están en peligro las siguientes cuestiones? Utilice la siguiente escala para responder: *nada, poco, algo, bastante, mucho*.

		<i>Nada</i>	<i>Poco</i>	<i>Algo</i>	<i>Bastante</i>	<i>Mucho</i>
1	Los valores educativos (por ejemplo, los valores que se enseñan en los colegios, las influencias a las que son expuestos los niños/as en la escuela)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Los valores familiares (por ejemplo, valores hacia personas mayores, la igualdad de género, cómo educar a los hijos/as)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Las creencias religiosas (por ejemplo, creencias, prácticas y cumplimiento o prohibiciones religiosas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Las tradiciones de nuestra cultura (por ejemplo celebración de fiestas, tradiciones españolas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	El acceso a un puesto de trabajo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	El acceso al sistema sanitario (por ejemplo, disponibilidad de médicos, facilidad de recibir el cuidado necesario en el hospital)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	El acceso al sistema educativo (por ejemplo, reservas de plaza en los colegios, número de plazas ofertadas, subvenciones y ayudas al estudio, calidad de la enseñanza, disponibilidad del profesorado)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	El acceso al sistema público de ayudas (por ejemplo, ayudas para la vivienda, ayuda de paro)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	La estabilidad económica de nuestro país (por ejemplo, el mercado laboral, los índices nacionales de paro, el sistema de pensiones)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	La salud (por ejemplo exposición a enfermedades)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	La seguridad personal (por ejemplo, probabilidad de ser víctima de algún delito)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	El orden público (por ejemplo, índices de delincuencia, mafias)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	La seguridad del país (por ejemplo, probabilidad de sufrir un ataque a gran escala)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A la vuelta por favor

En las afirmaciones siguientes, quisieramos saber más de tu opinión sobre la situación de los inmigrantes en España. Por favor, lee las cuestiones siguientes, e indica si estás en desacuerdo o de acuerdo con la afirmación, utilizando una escala del 1 (claramente en desacuerdo) al 6 (claramente de acuerdo)

		1 <i>Claramente en desacuerdo</i>	2	3	4	5	6 <i>Claramente de acuerdo</i>
1	El inconveniente de que los inmigrantes se introduzcan en determinados lugares (pisos, locales públicos, etc.) es que no saben respetar las normas de convivencia establecidas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A menudo siento simpatía por los inmigrantes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Los inmigrantes deberían salir adelante por sus propios esfuerzos sin que se les tenga que dar un trato especial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	A menudo, siento admiración por los inmigrantes que viven aquí en circunstancias duras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Si los inmigrantes se esforzaran un poco más, podrían estar tan acomodados como los ciudadanos españoles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Los inmigrantes que viven aquí enseñan a sus hijos valores y habilidades diferentes a los que se requieren para triunfar en este país	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Los inmigrantes ocupan puestos de trabajo que deberían ser ocupados por ciudadanos españoles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	La mayoría de los inmigrantes que viven aquí y que reciben algún tipo de ayuda social o económica podrían defenderse sin ella si lo intentaran	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Los inmigrantes y los españoles no pueden confiar plenamente los unos en los otros aunque sean amigos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	La mayoría de los políticos españoles se preocupan demasiado por los inmigrantes y no lo suficiente por los ciudadanos españoles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Los españoles son tan "de fiar" (igual de honestos) como los inmigrantes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ahora, algunas preguntas sobre tus amigos. ¿En qué medida piensas que a tus amigos les importa si haces uno o más de los comportamientos que aparecen abajo? Utiliza una escala del 1 (no les importa nada) al 6 (les importa mucho). Recuerda que el cuestionario es totalmente anónimo de modo que nadie puede descubrir lo que has contestado.

		1 <i>Les importa nada</i>	2	3	4	5	6 <i>Les importa mucho</i>
1	...si dices que no quieres tener nada que ver con los inmigrantes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	...si pintaras en un muro "stop inmigración"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Les importa nada</i>	2	3	4	5	<i>Les importa mucho</i>
3	...si te pelearas con un inmigrante sin ningún motivo aparente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	...si pintaras en un muro "stop racismo"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	...si te pelearas con un racista sin ningún motivo aparente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	....si dices que no quieres tener nada que ver con los racistas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acudimos a ti ahora. Por favor, indica si alguna vez has pasado por la situación descrita (tú mismo).. Recuerda que el cuestionario es totalmente anónimo de modo que nadie puede descubrir lo que has contestado. Para nosotros es muy importante que seas honesto.

Has hecho <u>TÚ MISMO</u> las siguientes situaciones contra/por un inmigrante sin motivo aparente? (Solo por el hecho de que es inmigrante)	
me he sentido incómodo cerca de inmigrantes	<input type="checkbox"/> sí <input type="checkbox"/> no
he tenido sentimientos negativos hacia los inmigrantes (por ejemplo, miedo, rencor, rabia...)	<input type="checkbox"/> sí <input type="checkbox"/> no
he evitado un encuentro con inmigrantes	<input type="checkbox"/> sí <input type="checkbox"/> no
he indicado que no quiero tener nada que ver con los inmigrantes, de modo indirecto (por ejemplo poniendo símbolos, pintando un sentencia en un muro, usando ropa específica..)	<input type="checkbox"/> sí <input type="checkbox"/> no
he indicado de modo explícito a inmigrantes que no quiero tener nada que ver con ellos (por ejemplo, insultando a un inmigrante, gesticulando...)	<input type="checkbox"/> sí <input type="checkbox"/> no
he excluido a inmigrantes de actividades (por ejemplo, ir de fiesta, trabajo en grupo, ...) o de lugares (por ejemplo de mi casa, de mi barrio...)	<input type="checkbox"/> sí <input type="checkbox"/> no
he intimidado a inmigrantes, solo o con amigos (por ejemplo, perseguir inmigrantes, amenazar a inmigrantes...)	<input type="checkbox"/> sí <input type="checkbox"/> no
He dañado las cosas de un/a inmigrante (por ejemplo, dañar su coche, echar por tierra un cubo de basura, graffiti, ...)	<input type="checkbox"/> sí <input type="checkbox"/> no
He robado a un/a inmigrante	<input type="checkbox"/> sí <input type="checkbox"/> no
me he puesto agresivo con los inmigrantes, solo o con amigos (por ejemplo, dar empujones a un inmigrante, pegar o patear a un inmigrante,	<input type="checkbox"/> sí <input type="checkbox"/> no
he herido a un inmigrante con violencia	<input type="checkbox"/> sí <input type="checkbox"/> no
he intimidado a un/a inmigrante sexualmente (por ejemplo, bromas sexuales, tocando a un/a inmigrante cuando no quiere, ...)	<input type="checkbox"/> sí <input type="checkbox"/> no

Véase a la vuelta S.V.P

Conclusión

Muchas gracias por tu cooperación! Antes de terminar, algunas preguntas generales.

1	¿Qué edad tienes?	tengo.....años
2	¿Eres chico o chica?	chico <input type="checkbox"/> chica <input type="checkbox"/>
3	¿Cual es tu nivel de formación?	<input type="checkbox"/> 1 de grado <input type="checkbox"/> 2 de grado <input type="checkbox"/> 3 de grado <input type="checkbox"/> 4 de grado <input type="checkbox"/> Master <input type="checkbox"/> Doctorado
4	¿Cual es tu especialidad de estudios?	
5	¿Dónde naciste tú y dónde nacieron tus padres?	
	Tú	Tu padre
	<input type="checkbox"/> España <input type="checkbox"/> Marruecos <input type="checkbox"/> Turquía <input type="checkbox"/> Otro país: <input type="checkbox"/> ns/nc	<input type="checkbox"/> España <input type="checkbox"/> Marruecos <input type="checkbox"/> Turquía <input type="checkbox"/> Otro país: <input type="checkbox"/> ns/nc
		Tu madre
		<input type="checkbox"/> España <input type="checkbox"/> Marruecos <input type="checkbox"/> Turquía <input type="checkbox"/> Otro país: <input type="checkbox"/> ns/nc

MUCHAS GRACIAS POR TU PARTICIPACIÓN

Appendix R.2. Survey of the Belgian study



SOCIALITEIT EN DIVERSITEIT

Welkom bij de studie naar sociale reactiviteit en diversiteit. De studie bestaat uit drie delen. In een eerste deel worden enkele vragen gesteld naar je omgang met de mensen uit je dagdagelijkse omgeving. De bedoeling van dit deel van de survey is om enkele nieuwe vormen van sociaal gedrag in kaart te brengen. In een tweede deel worden enkele vragen gesteld omtrent je wereldbeeld. Er is immers een enorme diversiteit aan opvattingen, en hier zouden we graag beter zicht op krijgen. In een derde deel worden enkele vragen gesteld naar je mening over diversiteit in België. Ook hier zijn we vooral geïnteresseerd in wat je persoonlijk denkt over dit onderwerp.

Het invullen van de vragenlijst neemt ongeveer 15 minuten in beslag. Het is niet de bedoeling om over elke stelling lang na te denken; tracht te antwoorden wat bij het lezen van de stelling intuïtief bij je opkomt. De gegevens worden op een **volledig anonieme wijze** verzameld, het is dus op geen enkele manier mogelijk om je als persoon te identificeren op basis van uw antwoorden. Dit geldt voor iedereen: noch je medestudenten, de onderzoekers of wie dan ook kunnen achterhalen wat je hebt geantwoord.

Graag danken wij u voor je medewerking,

Het onderzoeksteam

Voor meer informatie en/of vragen met betrekking tot de resultaten: ben.heylen@ugent.be

In dit deel van de vragenlijst worden enkele vragen gesteld met betrekking tot jezelf als persoon. Zoals je weet, kunnen mensen zeer verschillend reageren in dezelfde situaties. We zouden door deze vragen een beter beeld willen krijgen van deze diversiteit. We zouden je willen vragen iedere stelling te lezen en het antwoord dat het eerst in je opkomt te omcirkelen. We willen er ook op wijzen dat er hier geen “juiste” of “foute” antwoorden mogelijk zijn, alle mogelijkheden zijn even goed mogelijk. Het belangrijkste is dat je neerschrijft wat jou als persoon het beste omschrijft in de omgang met de mensen waarmee je dagdagelijks in contact komt. Gebruik hiervoor een schaal van 1 (helemaal oneens) tot 5 (helemaal eens).

SCALE: COMPLIANCE AND DOMINANCE SIGNALING BEHAVIORS (SELF-CREATED)

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
1	Ik werk enkel met anderen samen als dit me helpt mijn eigen doelstellingen te halen; anders doe ik dit liever niet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Ik heb wel eens met mijn vrienden meegedaan als ze iemand aan het pesten waren, hoewel ik zelf niet echt iets tegen hem/haar heb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Ik wil de beste zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Soms doe ik zaken die ik eigenlijk niet wil doen, om aan te tonen dat ik bij de groep hoor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	In groep werken geeft me de gelegenheid mijn meerwaarde als persoon aan te tonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik heb wel eens anderen genegeerd of uitgesloten omdat ze niet populair waren bij mijn vrienden, hoewel ik zelf niet echt iets tegen hem/haar heb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Ik doe er veel aan om niet als een “loser” over te komen bij anderen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	In groepsactiviteiten heb ik de neiging om de leiding te nemen als mijn groep op deze manier wint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Het beste aan in team werken, is dat ik op deze manier mijn waarde als persoon kan tonen aan de anderen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Ik roddel wel eens over andere mensen met mijn vrienden, hoewel ik de persoon in kwestie niet goed ken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Ik werk vooral in groep als dit me helpt mijn eigen doelen te bereiken, de doelen van de groep zijn minder belangrijk voor mij	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Als mijn vrienden iemand aan het pesten zijn, komt ik normaal tussenbeide om dit te doen ophouden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Als je dan denkt aan de doorsnee Vlaming (bv. uw vrienden, medestudenten, “de man in de straat”, enz.), in hoeverre zijn de volgende stellingen dan op jou van toepassing? De antwoordcategorieën zijn ongeveer dezelfde als voorheen. Geef simpelweg het antwoord dat als eerste spontaan bij je opkomt; goede of slechte antwoorden bestaan niet met betrekking tot de stellingen.

SCALE: EMPATHIC CONCERN (DAVIES)(SPECIFIEK NAAR IN-GROUP TOE GEFORMULEERD, OM LATER TE KUNNEN HERHALEN NAAR ALLOCHTONEN TOE)

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
1	Ik voel me vaak bezorgd over Vlamingen die minder gelukkig zijn dan ik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Soms heb ik niet veel medelijden met andere Vlamingen wanneer ze problemen hebben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Wanneer ik een Vlaming zie waarvan wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	De ongelukken van andere Vlamingen verstoren me meestal niet veel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Wanneer ik zie dat een Vlaming unfair wordt behandeld, voel ik soms weinig medelijden met hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik ben vaak nogal geraakt door de dingen die ik zie gebeuren met andere Vlamingen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Ik zou mezelf beschrijven als een vrij teerhartig persoon als het gaat over Vlamingen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zoals je weet, zijn er vele verschillende groepen in de samenleving. We zouden je mening willen weten over hoe de samenleving omgaat met de groep waar jij toe behoort in vergelijking met andere groepen. Geef a.u.b. aan in hoeverre je het al dan niet eens bent met volgende stellingen, gebruik makend van een schaal van 1 (helemaal oneens) tot 5 (helemaal eens).

SCALE: INDIVIDUAL (1-4) AND GROUP RELATIVE DEPRIVATION (4-8) (SOURCE: RADIMED).

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
1	Het maakt me boos als ik denk aan hoe ik behandeld word in vergelijking met anderen in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Ik denk dat ik het minder goed heb dan anderen in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Ik heb het gevoel dat ik gediscrimineerd word.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Als ik mezelf met anderen in België vergelijk, heb ik het gevoel dat ik oneerlijk behandeld word	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Ik denk dat de groep waar ik bij hoor het minder goed heeft dan andere groepen in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Het maakt me boos als ik denk aan hoe de groep waar ik bij hoor behandeld wordt in vergelijking met andere groepen in België	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Volgens mij wordt de groep waartoe ik behoor gediscrimineerd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
8	Als ik de groep waartoe ik behoor vergelijk met andere groepen in België, dan heb ik het idee dat wij oneerlijk behandeld worden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Dan zouden we nu enkele vragen willen stellen met betrekking tot uw contact met allochtonen. Gelieve aan te geven hoe vaak u contact hebt met allochtonen, gebruik makende van een schaal van 1 (nooit) tot 5 (heel vaak).

INTERGROUP CONTACT _ QUANTITY

		<i>Nooit</i>	2	3	4	<i>Zeer vaak</i>
1	Hoe vaak heeft u contact met allochtonen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Hoe vaak heeft u een gesprek met allochtonen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Hoe vaak heeft u contact met allochtonen in de buurt waar u woont?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hoe zou u het contact dat u hebt met allochtonen omschrijven? Gelieve voor elke vraag te antwoorden in hoe u het contact met allochtonen hebt ervaren, gebruik makende van een schaal van 1 (helemaal niet) tot 5 (helemaal wel).

INTERGROUP CONTACT _ QUALITY

		<i>Helemaal niet</i>	2	3	4	<i>helemaal wel</i>
1	In hoeverre ervaar je het contact met allochtonen als aangenaam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	In hoeverre ervaar je het contact met allochtonen als vervelend?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	In hoeverre ervaar je het contact met allochtonen als vriendschappelijk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	In hoeverre ervaar je het contact met allochtonen als vijandig?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ZIE OMMEZIJDE A.U.B.

Deel II

Hieronder volgen een aantal vragen in verband met je **wereldbeeld**. Iedereen heeft wel een andere kijk op de wereld, en die diversiteit zouden we graag vatten. Geef voor elk van onderstaande stellingen aan in hoeverre je het daarmee eens bent, door een kruisje in het juiste vakje te zetten. Onthoud dat de vragenlijst volledig anoniem is, en er zeker geen “juiste” of “foute” antwoorden zijn. Antwoord simpelweg wat intuïtief direct bij je opkomt.

Scales: Right Wing Authoritarianism (1-11) and Social Dominance Orientation (12-25) (bron: Van Hiel / D'hondt, pers. communicatie)

		<i>Helemaal oneens</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Helemaal eens</i>
1	Gehoorzaamheid en respect voor het gezag zijn de meest belangrijke deugden die kinderen moeten leren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Jonge mensen krijgen soms opstandige ideeën, maar als zij ouder worden horen zij daar overheen te groeien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Vriendelijkheid zet leeglopers en criminelen aan om van onze zwakheid te profiteren. Het is dan ook beter om met harde en besliste hand met dergelijke lui om te gaan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Tijdens verkiezingen is het toegelaten om zich vragen te stellen en te twijfelen, maar wanneer iemand verkozen is en de leider van ons land wordt, zijn we hem steun en loyaliteit verschuldigd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	In deze onrustige tijden moeten wetten zonder medelijden worden uitgevoerd, speciaal als we met oproerkrakers en revolutionairen te maken hebben die actievoeren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Wanneer iemand de regels verbreekt, is een goede, strenge straf de beste manier om hem/haar het juiste van het foute te leren onderscheiden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Veel van onze omgangsregels over bescheidenheid en seksueel gedrag zijn enkel gewoonten die niet beter of heiliger zijn dan regels die andere mensen volgen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Seksuele vergrijpen zoals verkrachting en aanranding verdienen meer dan alleen maar gevangenisstraf; aan misdadigers die zich hieraan schuldig maken behoren bovendien in het openbaar lijfstraffen te worden toegediend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
9	Ons nationaal erfgoed en onze gewoonten hebben ons groot gemaakt en sommige mensen zouden meer aangezet moeten worden om er respect voor te betonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	In deze gecompliceerde wereld kan je alleen maar leven als je vertrouwt op experts en specialisten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Goede leiders die het volk respecteren en steunen, moeten strikt, streng en veeleisend zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Sommige groepen van mensen zijn gewoonweg inferieur aan andere groepen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Om te verkrijgen wat je wilt, is het soms nodig om geweld tegen leden van andere groepen te gebruiken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Het is niet meer dan normaal dat leden van sommige groepen meer kansen in het leven hebben dan andere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Om vooruit te komen in het leven is het soms nodig om andere groepen de pas af te snijden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Als sommige groepen op hun plaats zouden blijven, zouden we minder problemen kennen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Het is waarschijnlijk een goede zaak dat sommige groepen aan de top van de ladder staan en andere groepen onderaan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Inferieure groepen zouden op hun plaats moeten blijven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Soms moeten bepaalde groepen op hun plaats worden gehouden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Het zou goed zijn als alle groepen gelijkwaardig zouden zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Gelijkwaardigheid van alle sociale groepen zou ons ideaal moeten zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Leden van alle groepen zouden een gelijke kans in het leven moeten krijgen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	We zouden al het mogelijke moeten doen om de lat gelijk te leggen voor de verschillende groepen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Ik ben voorstander van een toegenomen sociale gelijkheid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	We zouden minder problemen kennen als we alle mensen meer gelijkwaardig zouden behandelen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	We zouden ernaar moeten streven om de inkomens zo gelijk mogelijk te maken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Geen enkele groep zou onze maatschappij mogen domineren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C: Uw mening over diversiteit in België

Met de volgende stellingen zouden we willen weten hoe je denkt dat de situatie van de allochtonen in België er uitziet. Geef telkens aan in welke mate je het al dan niet eens bent met de stelling, en tracht zo spontaan mogelijk te antwoorden. De vragenlijst is anoniem, en er zijn geen goede of slechte antwoorden. De antwoordcategorieën blijven dezelfde.

Scales: subtle prejudice (1-8) and blatant prejudice (only Pettigrew's threat and rejection items) (9-14)

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
1	Allochtonen zouden het verstand moeten hebben zichzelf niet op te dringen op plaatsen waar ze niet welkom zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Over het algemeen heb ik een goed gevoel over allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	In het verleden bleek dat Italiaanse allochtonen zich vlot aanpasten aan onze cultuur. Turken en Marokkanen zouden dit ook moeten doen, zonder dat ze hiervoor speciaal beloond worden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ik bewonder de allochtone gemeenschap die hier in harde omstandigheden leeft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Sommige allochtonen doen gewoonweg niet hun best om zich aan te passen. Indien zij dit werkelijk zouden willen, zouden zij even goed af zijn als de Belgen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik voel sympathie voor allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Allochtonen leren hun kinderen waarden en vaardigheden die hun kansen op succes in onze maatschappij beknotten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Ik voel mee met de allochtone gemeenschap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Allochtonen hebben jobs die eigenlijk aan autochtonen toebehoren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	De meeste allochtonen zouden perfect kunnen leven zonder overheidssteun als ze een beetje hun best deden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Allochtonen en autochtonen zullen nooit echt met mekaar kunnen opschieten, ook al zijn ze soms vrienden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	De meeste politici in België geven meer om allochtonen dan om autochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Het feit dat allochtonen van minder goede rassen afstammen verklaart waarom ze doorgaans minder goed af zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Allochtonen zijn even eerlijk als autochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Men komt in de straat wel vaak allochtonen tegen, en er wordt ook vaak over gesproken met vrienden, familie en dergelijke. In hoeverre zijn de volgende stellingen met betrekking tot uzelf van toepassing?

SCALE: EMPATHIC CONCERN BIS (BASED ON DAVIES, FORMULATED TOWARDS IMMIGRANTS)

		<i>Helemaal oneens</i>	2	3	4	<i>Helemaal eens</i>
1	Ik heb vaak tedere, bezorgde gevoelens voor allochtonen die minder gelukkig zijn dan ik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Doorgaans heb ik niet veel medelijden met allochtonen wanneer ze problemen hebben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Wanneer ik zie dat van allochtonen wordt geprofiteerd, voel ik me nogal beschermend tegenover hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Het ongeluk van allochtonen doet me doorgaans niet veel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Wanneer ik zie dat allochtonen unfair worden behandeld, voel ik soms weinig medelijden met hen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ik ben vaak nogal geraakt door de dingen die ik zie gebeuren met allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Ik zou mezelf beschrijven als een vrij teerhartig persoon als het gaat over allochtonen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zoals je weet worden allochtonen wel eens uitgelachen of uitgescholden, en gedragen mensen zich wel eens agressief tegenover hen. Ken je vrienden die ooit dergelijk gedrag tegenover een allochtoon hebben gesteld? Gelieve telkens aan te geven hoeveel vrienden je hebt die dergelijk gedrag wel eens stellen, gebruik makende van een schaal van 1 (geen enkele) tot 5 (de meeste). Graag benadrukken we nogmaals dat de vragenlijst volledig anoniem is, en dus **niemand** te weten kan komen wat je geantwoord hebt.

SCALE: PEER MORALISTIC AGGRESSION (= RESPONDENT'S EXPOSURE TO MORALISTIC AGGRESSION) (SOURCE: SELF-CREATED, BASED ON THEORY – ALLPORT, EVOLUTIONARY FRAMEWORK – AND LAW).

		Geen	2	3	4	De meeste
1	Zich ongemakkelijk voelen als er allochtonen in de buurt zijn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Negatieve gevoelens gehad tegen allochtonen (bv. schrik, afkeer, woede)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Allochtonen vermeden (bv. in de bus op een andere plaats zitten, aan de andere kant van de straat lopen, plaatsen waar vaak allochtonen komen vermijden...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Geen	2	3	4	De meeste
4	Duidelijk gemaakt dat ze allochtonen niet moeten, zonder dit expliciet tegen henzelf zeggen (bv. door een symbool te dragen, door een spreuk op een muur te tekenen, door een bepaalde kledingstijl aan te nemen...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Duidelijk gemaakt dat ze allochtonen niet moeten, door dit expliciet tegen hen te zeggen (bv. door hen uit te schelden, door bepaalde gebaren zoals een middenvinger op te steken...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Allochtonen niet uitgenodigd om deel te nemen aan bepaalde activiteiten (bv. op café gaan, groepswerk,)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Alleen of met vrienden een of meerdere allochtonen geïntimideerd (bv. hen in groep bedreigen, achtervolgen, ...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Bezit van allochtonen besmeurd, beschadigd, of vernietigd (bv. graffiti op een muur, een vuilzak omver werpen, een brievenbus in brand steken...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Iets van een allochtoon gestolen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Agressief met allochtonen omgaan (bv. vechten, er iets naar gooien,...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Een allochtoon of allochtone seksueel geïntimideerd (bv. seksueel getinte opmerkingen maken, seksuele aanrakingen zonder dat zij/hij dit wenste, proberen seks af te dwingen....)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

En als we dan naar jezelf kijken, welke van de onderstaande zaken heb je ooit tegen een allochtoon gedaan? Geef ook aan hoeveel keer dit ongeveer in de laatste twaalf maanden is voorgevallen. Graag benadrukken we hier nogmaals dat alle antwoorden op een strikt anonieme wijze zullen worden verwerkt, en dus nooit iemand kan te weten komen wat je hebt geantwoord. Het is echter zeer belangrijk voor ons dat je een eerlijk antwoord geeft.

SCALE: MORALISTIC AGGRESSION (SELF MADE)

Heb je ooit zelf een van de volgende zaken tegen een allochtoon gedaan of ervaren, omwille van het feit dat hij of zij allochtoon is?			Hoe vaak is dit de laatste 12 maanden voorgevallen?					
			0 keer	1 keer	2 keer	3-5 keer	6-10 keer	Meer dan 10 keer
1	Ongemakkelijk gevoeld als er allochtonen in de buurt zijn	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Negatieve gevoelens gehad tegen allochtonen (bv. schrik, afkeer, woede, ...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

			0 keer	1 keer	2 keer	3-5 keer	6-10 keer	Meer dan 10 keer
3	Allochtonen vermeden (bv. in de bus op een andere plaats zitten, aan de andere kant van de straat lopen, plaatsen waar vaak allochtonen komen vermijden...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Duidelijk gemaakt dat ik allochtonen niet moet, zonder dit expliciet tegen hen zelf zeggen (bv. door een symbool te dragen, door een spreuk op een muur te tekenen, door een bepaalde kledingstijl aan te nemen...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Duidelijk gemaakt dat ik allochtonen niet moet, door dit expliciet tegen hen te zeggen (bv. door hen uit te schelden, door bepaalde gebaren zoals een middenvinger op te steken...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Allochtonen niet uitgenodigd om deel te nemen aan bepaalde activiteiten (bv. op café gaan, groepswerk, ...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Alleen of met vrienden een of meerdere allochtonen geïntimideerd (bv. hen in groep bedreigen, achtervolgen, ...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Bezit van allochtonen besmeurd, beschadigd, of vernietigd (bv. graffiti op een muur, een vuilzak omver werpen, een brievenbus in brand steken...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Iets van een allochtoon gestolen	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Agressief met allochtonen omgaan (bv. vechten, er iets naar gooien,...)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Een allochtoon of allochtone seksueel geïntimideerd (bv. seksueel getinte opmerkingen maken, seksuele aanrakingen zonder dat zij/hij dit wenste, proberen seks af te dwingen....)	<input type="checkbox"/> neen <input type="checkbox"/> Ja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Concluderende vragen en dankwoord

Vooreerst willen wij u vriendelijk bedanken voor het invullen van deze vragenlijst. Alvorens af te sluiten zouden we nog enkele korte vragen van algemene aard willen stellen.

1	Wat is je leeftijd?	.....jaar
2	Wat is je geslacht?	man <input type="checkbox"/> vrouw <input type="checkbox"/>
3	In welk jaar van je opleiding zit je? <i>Indien je een aangepast traject volgt, gelieve dan het jaar te geven van het jaar waar je de meeste vakken van volgt.</i>	<input type="checkbox"/> 1e bachelor <input type="checkbox"/> 2 ^e bachelor <input type="checkbox"/> 3e bachelor <input type="checkbox"/> master <input type="checkbox"/> doctoraat <input type="checkbox"/> andere (specificeer)
4	Wat is uw studierichting? <i>(hier wordt nog een lijst van de opleidingen per faculteit ingevoerd)</i>	.....
5	In welk land ben jij en je ouders geboren?	

Jezelf	Je vader	Je moeder
<input type="checkbox"/> België <input type="checkbox"/> Marokko <input type="checkbox"/> Nederland <input type="checkbox"/> Turkije <input type="checkbox"/> Ander land binnen Europa nl. .....(in hoofdletters) <input type="checkbox"/> Ander land buiten Europa nl. .....(in hoofdletters) <input type="checkbox"/> Weet ik niet	<input type="checkbox"/> België <input type="checkbox"/> Marokko <input type="checkbox"/> Nederland <input type="checkbox"/> Turkije <input type="checkbox"/> Ander land binnen Europa nl. .....(in hoofdletters) <input type="checkbox"/> Ander land buiten Europa nl. .....(in hoofdletters) <input type="checkbox"/> Weet ik niet	<input type="checkbox"/> België <input type="checkbox"/> Marokko <input type="checkbox"/> Nederland <input type="checkbox"/> Turkije <input type="checkbox"/> Ander land binnen Europa nl. .....(in hoofdletters) <input type="checkbox"/> Ander land buiten Europa nl. .....(in hoofdletters) <input type="checkbox"/> Weet ik niet

VRIENDELIJK BEDANKT VOOR UW MEDEWERKING!!!!

Appendix R.3. Correlations between constructs and descriptives

Correlations and descriptives in the Spanish sample.

		Genuine signaling	Deceptive signaling	RWA	SDO	prejudice	bias motivated behaviors
Genuine signaling	<i>r</i>	1	,299**	,209**	,064*	,147**	,177**
	Sig. (		,000	,000	,018	,000	,000
	N	1360	1360	1360	1360	1360	1360
Deceptive signaling	<i>r</i>	,299**	1	-,015	,164**	,136**	,278**
	Sig. (	,000		,572	,000	,000	,000
	N	1360	1360	1360	1360	1360	1360
RWA	<i>r</i>	,209**	-,015	1	,190**	,398**	,142**
	Sig. (	,000	,572		,000	,000	,000
	N	1360	1360	1360	1360	1360	1360
SDO	<i>r</i>	,064*	,164**	,190**	1	,406**	,281**
	Sig. (	,018	,000	,000		,000	,000
	N	1360	1360	1360	1360	1360	1360
prejudice	<i>r</i>	,147**	,136**	,398**	,406**	1	,472**
	Sig. (	,000	,000	,000	,000		,000
	N	1360	1360	1360	1360	1360	1360
bias motivated behaviors	<i>r</i>	,177**	,278**	,142**	,281**	,472**	1
	Sig. (	,000	,000	,000	,000	,000	
	N	1360	1360	1360	1360	1360	1360

Table 28: Correlations between constructs in the Spanish sample.

	N	Mean	Std. Deviation	Variance
Genuine signaling	1360	16,7243	4,81578	23,192
Deceptive signaling	1360	13,7875	4,63324	21,467
RWA	1360	19,6051	5,90263	34,841
SDO	1360	18,9735	4,45227	19,823
prejudice	1360	24,2154	9,23130	85,217
bias motivated behaviors	1360	,9309	1,15007	1,323

Table 29: descriptives of the Spanish sample.

Correlations and descriptives in the Belgian sample

		Genuine signaling	Deceptive signaling	RWA	SDO	prejudice	bias motivated behaviors
Genuine signaling	<i>r</i>	1	,027	,105**	-,007	,021	,032
	Sig. (2-tailed)		,338	,000	,797	,449	,244
	N	1300	1300	1300	1300	1300	1291
Deceptive signaling	<i>r</i>	,027	1	,173**	,286**	,237**	,233**
	Sig. (2-tailed)	,338		,000	,000	,000	,000
	N	1300	1300	1300	1300	1300	1291
RWA	<i>r</i>	,105**	,173**	1	,515**	,599**	,265**
	Sig. (2-tailed)	,000	,000		,000	,000	,000
	N	1300	1300	1300	1300	1300	1291
SDO	<i>r</i>	-,007	,286**	,515**	1	,688**	,375**
	Sig. (2-tailed)	,797	,000	,000		,000	,000
	N	1300	1300	1300	1300	1300	1291
prejudice	<i>r</i>	,021	,237**	,599**	,688**	1	,445**
	Sig. (2-tailed)	,449	,000	,000	,000		,000
	N	1300	1300	1300	1300	1300	1291
bias motivated behaviors	<i>r</i>	,032	,233**	,265**	,375**	,445**	1
	Sig. (2-tailed)	,244	,000	,000	,000	,000	
	N	1291	1291	1291	1291	1291	1291

Table 30: Correlations between constructs in the Belgian sample.

	N	Mean	Std. Deviation	Variance
Genuine signaling	1300	15,0738	3,62662	13,152
Deceptive signaling	1300	9,5885	2,29449	5,265
RWA	1300	29,2692	6,40726	41,053
SDO	1300	34,6469	11,90962	141,839
prejudice	1300	38,3992	9,47838	89,840
bias motivated behaviors	1291	2,0782	1,21141	1,468

Table 31: descriptives of the Belgian sample.

Correlations and descriptives in the comparative sample

		Genuine signaling	Deceptive signaling	RWA	SDO	prejudice	bias motivated behaviors
Genuine signaling	<i>r</i>	1	,282**	,141**	,041*	,090**	,047*
	Sig. (2-tailed)		,000	,000	,033	,000	,015
	N	2660	2660	2660	2660	2660	2660
Deceptive signaling	<i>r</i>	,282**	1	,097**	,145**	,128**	,151**
	Sig. (2-tailed)	,000		,000	,000	,000	,000
	N	2660	2660	2660	2660	2660	2660
RWA	<i>r</i>	,141**	,097**	1	,324**	,383**	,049*
	Sig. (2-tailed)	,000	,000		,000	,000	,012
	N	2660	2660	2660	2660	2660	2660
SDO	<i>r</i>	,041*	,145**	,324**	1	,385**	,059**
	Sig. (2-tailed)	,033	,000	,000		,000	,002
	N	2660	2660	2660	2660	2660	2660
prejudice	<i>r</i>	,090**	,128**	,383**	,385**	1	,367**
	Sig. (2-tailed)	,000	,000	,000	,000		,000
	N	2660	2660	2660	2660	2660	2660
bias motivated behaviors	<i>r</i>	,047*	,151**	,049*	,059**	,367**	1
	Sig. (2-tailed)	,015	,000	,012	,002	,000	
	N	2660	2660	2660	2660	2660	2660

Table 32: Correlations between constructs in the comparative sample.

	N	Mean	Std. Deviation	Variance
Genuine signaling	2660	9,7759	2,74697	7,546
Deceptive signaling	2660	6,6079	2,41750	5,844
RWA	2660	8,7150	3,14379	9,883
SDO	2660	6,3808	2,16447	4,685
prejudice	2660	7,6752	3,19631	10,216
bias motivated behaviors	2660	1,4902	1,31167	1,720

Table 33: descriptives of the comparative sample.

