

Department of Social and Organizational Psychology

**Dehumanization revisited: The Humanization of ingroup and outgroup  
members depends on the perception of social relatedness.**

A Thesis presented in partial fulfilment of the Requirements for the  
Degree of Doctor in Psychology

Ana Filipa de Sequeira Louceiro

Supervisor:

Doctor Sven Waldzus

Associate Professor with Aggregation, Departamento de Psicologia Social e das Organizações  
do ISCTE- Instituto Universitário de Lisboa, Portugal

Co-Supervisor:

Doctor Maria Paola Paladino

Associate Professor, University of Trento, Italy

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Ana Filipa de Sequeira Louceiro

Jury Composition:

Doctor Luís Antero Reto, Full Professor, ISCTE- Instituto Universitário de Lisboa, Portugal

Doctor Nick Haslam, Full Professor, Melbourne School of Psychological Sciences, Australia

Doctor Rodrigo Brito, Associate Professor, Universidade Lusófona de Humanidades e  
Tecnologias, Portugal

Doctor Rui Costa Lopes, Researcher, Instituto de Ciências Sociais (ICS) da Universidade de  
Lisboa (ICS), Portugal

Doctor Elizabeth Collins, Researcher, Centro de Investigação e Intervenção Social (CIS-IUL)  
do ISCTE- Instituto Universitário de Lisboa, Portugal

Doctor Maria Paola Paladino, Associate Professor, University of Trento, Italy

Doctor Sven Waldzus, Associate Professor with Aggregation, Departamento de Psicologia  
Social e das Organizações do ISCTE- Instituto Universitário de Lisboa, Portugal

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## **Resumo**

A ausência de relação com os outros por vezes leva a que estes sejam comparados a objectos ou máquinas. Percebê-los enquanto parceiros relacionais poderia contribuir para o seu reconhecimento enquanto seres humanos.

O principal objectivo desta tese é o de testar a ideia de que as relações sociais constituem uma dimensão fundamental da percepção de humanidade. Hipotetiza-se que perceber o exogrupo como participando em relações com o endogrupo reduz a dehumanização do exogrupo em maior grau do que a ausência de relação. Pretende-se também explorar o grau em que o endogrupo é (des)humanizado de acordo com a sua participação em relações sociais.

Verificou-se que as relações sociais entre o endogrupo e o exogrupo diminuíram a desumanização exogrupal quando comparadas com a ausência de relação. Mostrou-se também evidências sobre o papel moderador do estatuto na humanidade percebida de grupos de alto e baixo estatuto, tanto fictícios como naturais. Adicionalmente, constatou-se que as relações entre membros do exogrupo (nas quais o endogrupo não estava envolvido) também afectaram a humanidade percebida de ambos os grupos. Finalmente, resultados iniciais de estudos usando um paradigma de grupos mínimos foram apresentados. Nestes estudos, ocorreu desumanização do exogrupo mas esta não foi moderada pelas relações sociais (antecipadas) entre os grupos.

Esta tese representa uma nova visão sobre este fenómeno através de uma abordagem relacional sobre a (des)humanização do endogrupo e do exogrupo. As relações sociais são então avançadas como uma dimensão subjacente à forma como percebemos o nosso próprio grupo e outros enquanto humanos.

**Palavras-chave:**

Relações sociais, grupos, desumanização, estatuto, paradigma dos grupos mínimos



## **Abstract**

Others with whom we do not relate are sometimes likened to objects or machines. Perceiving others as relational partners could contribute to their acknowledgment as human beings.

To test the idea that social relatedness constitutes a fundamental dimension of humanness perception is the main goal of this thesis. It is hypothesized that perceiving the outgroup as taking part in relations with the ingroup reduces outgroup dehumanization to a greater extent than when its members are not taking part in such relations. It also aims to explore the extent to which the ingroup is (de)humanized according to its participation in social relations.

It was found that social relations between ingroup and outgroup decreased outgroup dehumanization when compared to the absence of relation. Evidence on the moderating role of status in the perceived humanness of high and low status, fictional and natural groups, was also presented. Additionally, social relations between outgroup members (in which ingroup members were not involved) also had an effect on the perceived humanness of both groups. Finally, initial findings of studies using a minimal groups' paradigm were presented. In these studies, outgroup dehumanization also occurred but was not moderated by (anticipated) social relations between the groups.

This thesis represents a new take on this phenomenon by providing a relational approach to the (de)humanization of ingroup and outgroup. Therefore, social relatedness is advanced as a dimension that underlies how human we perceive our own group and other groups to be.

### **Keywords:**

Social relations, groups, dehumanization, status, minimal group paradigm

American Psychological Association (PsychINFO Classification Categories and Codes)

**3000** Social Psychology

**3020** Group and Interpersonal Processes

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## CHAPTER 1: Introduction

Claiming that other people are animals or objects is probably one of the most outrageous statements one can make. It is not such an uncommon statement though. Our recent history is filled with examples of groups being perceived as not human or at least as less than humans. Slaves were perceived as constituting but a fraction of a full person (U.S. Const., art. I, § 2), Nazi propaganda called Jews "rats" or "vermin" (e.g.: *Der Ewige Jude*, 1940) and Hutus referred to Tutsis as "cockroaches" (e.g.: Ngeze, 1993). Nowadays, immigrants are still likened to invasive pests (e.g. Wing, 2013), sex offenders are often compared to beasts (e.g. Reynolds, 2012) and homeless people are perceived and treated as objects (e.g.: as internet hotspots, Wortham, 2012).

A myriad of research has been developed on dehumanization. In psychology, it was already a topic of interest in its more blatant aspects, connected to violent conflicts between groups (e.g. Staub, 1989; Opatow, 1990). It was only later that the view of dehumanization as a subtle and pervasive phenomenon was proposed (Leyens and colleagues, 2000). Dehumanization was then termed Infracumanization to capture its more subtle aspects and focused on the human animal divide, namely on the attribution of uniquely human emotions.

It appears that throughout history others were always perceived as less human than our own. The Greek divided the world in two categories: themselves and everyone else (i.e. Barbarians). The latter were seen as dangerous, stupid and animal-like (Smith, D. L., 2011). During the Middle Ages, the divide was mostly based on religion. For instance, the Slavs, Pagan Eastern Europeans, were seen as less than fully human and this meant they could be enslaved (Jankowiak, 2012). These are just two examples of what many explorers, scientists and anthropologists have extensively reported: people glorify their own group while vilifying others (for a detailed account on the history of dehumanization see Jahoda, 2014). As long as

one could define an “us”, one could define a “them” and that has seemingly been enough for perceiving others as not human or at least less than fully human. The only distinction that was identified as simultaneously necessary and sufficient for this bias to occur was a meaningful identification with one’s group (Leyens, 2009). Is dehumanization a universal phenomenon then? Provided with such a meaningful distinction would one always dehumanize members of other groups? Variables that moderate the dehumanization of groups have been identified such as boundaries between groups and more socio-structural aspects, such as status. In fact, interactions that cause intergroup boundaries to shift, hence eliciting a recategorization of ingroup and outgroup in a common uniting category have been shown to reduce outgroup dehumanization (e.g. Gaunt, 2009). Moreover, in some cases, status asymmetries between groups have been found to moderate the perceived humanness of ingroup and outgroup members (e.g. Capozza, Andrighetto, Di Bernardo & Falvo, 2012).

But why do these variables affect the perceived humanness of groups? Haslam and colleagues’ (Haslam, Bain, Douge, Lee & Bastian, 2005) approach to subtle dehumanization stated that humanness comprehends not only what is uniquely human but also the core aspects of being human, namely human nature. The latter has been characterized as involving warmth, emotional depth, cognitive openness as well as the ability to form social relations. When others are denied human nature, no social relation is perceived to exist with the dehumanized other. This perceived lack of relatedness leads to likening others to objects or automata, (Haslam, 2006). If so, perceiving others as relational partners would contribute to acknowledging them as human beings possessing needs, desires and thoughts.

To test the idea that relatedness with others may constitute a fundamental dimension of humanness perception is the main goal of this thesis. Therefore, the first objective of this research is to provide such a theoretical basis by the introduction of a relational perspective. Moreover, this relational perspective will have consequences for the specification of



conditions under which one can expect a reduction of the subtle dehumanization bias. It also implies that recategorization might be sufficient but not really necessary for the reduction of dehumanization. We also question the idea that the dehumanization bias must always be in favor of ingroup members. Therefore, a second goal of this thesis is to identify the conditions in which dehumanization of ingroup members, that is, less attribution of humanness to ingroup members than to outgroup members, may occur.

### **1.1. Overview of the Thesis**

In Chapter 2, we discuss recent literature on the subtle dehumanization of groups and some of the variables moderating this particular form of intergroup bias, namely those addressing boundaries between groups and socio-structural variables of relevance for the current work. Moreover, because the focus of this thesis is on social relations and their role in the perceived humanness of groups, we address the four cognitive relational models proposed by Alan Fiske's Relational Models Theory: communal sharing, authority ranking, equality matching and market pricing. In Chapter 3, we provide an integration of the previous theoretical chapters that leads to the main hypotheses.

In Chapter 4, we investigate whether the reduction of outgroup dehumanization occurs through the recategorization of ingroup and outgroup into a common uniting category or due to the relation in which these groups are involved. To address this, three studies were conducted in which participants were presented with a description of one of two types of relation (communal sharing or market pricing) or no relation between an ethnic ingroup and an outgroup of unknown origin (study 1) or between a foreign population and a group of unknown origin (study 2 and 3). Results showed that when the outgroup was a partner in a relation with the ingroup participants dehumanized the outgroup to a lesser extent than when there was no relation with the ingroup. This provided support for our hypothesis that being a

partner in a relation decreases outgroup dehumanization when compared to not being a partner in a relation. However, in studies 2 and 3, being a partner in a relation did not reduce dehumanization of outgroup members when the ingroup was not involved in those relations.

Because we were interested in whether the effect of these two types of relations (communal sharing and market pricing) would generalize to the whole spectrum of relational models proposed by Relational Models Theory, in a further set of studies, here presented in Chapter 5, we used a similar paradigm and tested several intergroup relations (communal sharing, market pricing, authority ranking superior, authority ranking inferior and equality matching). We also added measures of human nature and human uniqueness in order to understand in what dimension groups would be humanized. Therefore, using scenarios with national (studies 4 and 5) and fictional (study 6) groups, we investigated to what extent each intergroup relation involving ingroup and outgroup members reduced outgroup dehumanization when compared to the absence of relation. Results showed that some relations in which the groups were involved reduced the overall dehumanization of outgroup members in all three studies. Contrary to what was expected, market pricing relations did not reduce outgroup dehumanization when the groups were fictional. Interestingly, in authority ranking relations, the dimension in which each group was humanized depended on the relative status position of its members. All studies showed that participants in low status groups in authority ranking relations (i.e., relations with legitimate status asymmetries) attributed more human uniqueness to the higher status outgroup than to their own group. Hence, authority ranking relations provided conditions in which both ingroup and outgroup could be dehumanized depending on their status position.

After having manipulated the groups' status positions in the authority ranking conditions of the previous studies, we were interested in testing if existing status relations between groups would yield similar results. We address these questions in Chapter 6. In a laboratory

study, we presented participants with a description of an authority ranking relation with another national group, in which their national ingroup was either in the superior or in the inferior position. Then participants were asked to name that national outgroup based on this description. After that, participants were asked to rate both ingroup and outgroup in the two humanness dimensions. This (study 7) provided evidence that group status moderates the attribution of humanness to groups on both the human nature and human uniqueness dimensions. High status groups were attributed more human uniqueness and less human nature than low status groups. Moreover, participants also attributed more human nature to the low status ingroup than to the high status outgroup. However, no difference in the attribution of human nature was found between the high status ingroup and the low status outgroup.

In Chapter 7, we further examine the conditions in which outgroup members can be attributed more humanness than ingroup members. When addressing this question we assumed that outgroup dehumanization might result from the fact that people experience ingroup members more often in relations to others than they experience outgroup members. Thus, we hypothesize that, if a condition could be created in which participants have more relational information about outgroup members than about ingroup members outgroup dehumanization should be eliminated or even reversed into ingroup dehumanization. Therefore, in Study 8, using scenarios with fictional groups, we assessed humanness attributions to both ingroup and outgroup when outgroup members were presented as being in relations with each other or not, while no relational information about the ingroup was presented. Results showed that all intragroup relations among outgroup members (but not significantly for the authority ranking relation), in which the ingroup was not involved, sufficed to eliminate outgroup dehumanization. Moreover, all relations reduced outgroup dehumanization when compared to the absence of relation on the human nature dimension.

Only equality matching and market pricing reduced the dehumanization of outgroup members on the human uniqueness dimension.

In two laboratory studies, presented in Chapter 8, we tested whether anticipated relations between ingroup and outgroup members moderated outgroup dehumanization in a minimal group setting. Specifically, in Study 9 we examined if communal sharing, equality matching and market pricing relations reduced outgroup dehumanization when compared with the absence of relation between the groups. Using a similar paradigm, Study 10 also tested whether group status (superior, inferior or equal) moderated the dehumanization of outgroup members. In both studies the subtle dehumanization bias in favor of the minimal ingroup emerged. However, it was not moderated by the relation in which groups would be involved. One could claim that the relational manipulation (anticipation of a relation) was not enough for a moderation to arise. The studies presented in Chapter 8 correspond to initial findings of one more paradigm (minimal groups). Despite its uninformative results, this paradigm is worth further testing, as it allows addressing additional questions on the role that intergroup relations have in the perceived humanness of groups.

In Chapter 9, we present a general discussion of the overall research presented in this thesis, including an overview of the research questions, hypotheses, results and conclusions. Moreover, we address the limitations of the studies, future directions, implications and contributions of the thesis to the state of the art.

## Chapter 2. Dehumanization and Social Relations<sup>1</sup>

Dehumanization is the denial of humanness to others. Beliefs of this sort arise in the context of extreme interethnic conflict and hatred (Bandura, Underwood, & Fromson, 1975; Staub, 1989), and they serve the purpose of justifying groups' violence, legitimizing the intergroup relation's status quo and distancing individuals from potentially stressful events (for a review see Volpato & Andrighetto, 2015).

Schwartz & Struch (1989) proposed that others are dehumanized when they are perceived as lacking prosocial values or when their values are seen as incongruent with those of ingroup members. Another view is that of Bar-Tal (1989), who conceptualized dehumanization as a form of collectively shared delegitimizing belief. Because of this, groups are then labeled as inhuman either by using subhuman categories such as inferior races or animals or by referring to negatively valued superhuman creatures such as demons and monsters (Bar-Tal, 2000).

These early accounts of dehumanization differ in the aspects they emphasize but share some common assumptions. Dehumanization is understood as an extreme phenomenon, observed in conditions of conflict, and it is primarily called upon to explain and enable acts of violence (Volpato & Andrighetto, 2015).

Whereas history has been providing many examples of dehumanization for a long time, social psychology has only recently started to explore the reasons why granting equal humanness to all human beings is so difficult. Indeed, in the last decade several theories have studied the phenomenon of dehumanization, extending its original conception outside the domains of violence and cruelty. By showing that people tend to differentiate others by the degree to which they are human, that is, to scale groups in terms of humanness, this research has emphasized dehumanization as a subtle and pervasive phenomenon in interpersonal and

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<sup>1</sup> Sections of this chapter were presented in a paper under review in the *European Journal of Social Psychology*.

intergroup contexts, which occurs in several social domains (for reviews see Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; Vaes, Leyens, Paladino, & Miranda, 2012; Haslam & Loughnan, 2014).

Two main approaches will be briefly introduced: the Infracumanization theory of Leyens and colleagues (2000) and Haslam's (2006) two-dimensional model of humanness that differentiates between animalistic and mechanistic dehumanization.

Several different terms have been used to refer to this subtle bias (e.g., infracumanization, dehumanization). For the sake of simplicity we will use the term dehumanization to refer to all forms of rejection of full humanness to people, including its more subtle forms. Specific terminology will be used only when referring to specific theories.

## **2.1. Infracumanization Theory**

Leyens and his colleagues (2000, for a recent review see Vaes et al., 2012) were the first to present the idea that humanness is a dynamic dimension of social judgment on which people are differentiated. Infracumanization theory stressed the relative nature of the difference between humanness attributions to ingroup and outgroup, thereby extending the scope of dehumanization beyond the context of cruelty and ethnic hatred (e.g.: Demoulin et al., 2004). Leyens and colleagues (2000; 2001) called this comparatively subtle phenomenon infracumanization and defined it as the tendency of people to consider their ingroup as fully human while considering other groups as less human or more animal-like. Infracumanization does not imply a complete exclusion of other groups from the human category or the explicit likening of others to animals (Volpato & Andrighetto, 2015). It rather describes gradual differences between the humanness that is attributed to outgroup members as compared to ingroup members.

The main emphasis of the research conducted by Leyens and colleagues (2000) was on the distinction between primary or non-uniquely human emotions, those that are considered to be shared with other animals (e.g., surprise and fear) and secondary or uniquely human emotions that are only expressed by human beings (e.g., regret and enthusiasm). In a series of studies using different paradigms, Leyens and colleagues found that people usually attribute more secondary emotions to their ingroup than to outgroups but they do not differentially attribute primary emotions (for reviews see Leyens et al., 2007; Vaes et al., 2012). This bias in emotion attribution reflects people's tendency to attribute more humanness to the ingroup, considering the outgroup as somewhat less human.

Moreover, when outgroups are infrahumanized, both positive and negative secondary emotions are denied to these outgroups (Leyens et al., 2001). This means that people associate both positive (e.g.: enjoyment and delectation) and negative uniquely human emotions (e.g. melancholia and resignation) more with the ingroup than with the outgroup. This finding is important as it implies that infrahumanization is distinct from ingroup favoritism (e.g. Leyens et al., 2000; Viki & Calitri, 2008). Group members do not only favor their ingroup on things that are directly positive for their group, they also attribute more negative secondary emotions to their ingroup as they are uniquely human as well (e.g. Paladino & Vaes, 2009).

Importantly, Infrahumanization theory was extended to include non-emotional human features. Using stimuli other than emotions, such as human (e.g. citizen) and animal related words (e.g. mongrel), Viki, Winchester, Titshall and Chisango (2006), found that participants associated more human words to the ingroup than to the outgroup, but the association was equally strong for animal related words. These authors found similar results when using an Implicit Association Test (IAT) and a word attribution task.

Paladino and Vaes (2009) provided participants with bogus information about the typical traits and emotions of their ingroup and different outgroups. They found that people rated

traits and emotions as more human when these were said to characterize the ingroup comparing to when these were presented as characterizing the outgroup. Hence, people do not only associate more human characteristics to their ingroup but characteristics also become more human when they belong to the ingroup. This provides substantiation to what Vaes and colleagues (2012) suggested: that the specific characteristic that is denied to others is less important than the target to which humanness is attributed or denied to. According to the authors, the humanness of a trait is not a given fact, but it depends at least partially on the target it is attributed to.

In addition, if group members consider their group as distinctive in humanness, they should be attentive to cues that undermine this distinctiveness, and they should react negatively if outgroup members express uniquely human emotions because this expression could be perceived as a threat to the ingroup's distinctiveness on the humanness dimension (Branscombe, Ellemers, Spears, & Doosje, 1999). It was Vaes and colleagues (Vaes et al., 2003; Vaes, Paladino, & Leyens, 2002) who most thoroughly investigated negative behavioral responses to the expression of secondary emotions by outgroup members. They found that while an ingroup member expressing secondary emotions was perceived to be more human, the humanness of an outgroup member who expressed the same emotion was not acknowledged, making human concepts less accessible. People establish a privileged association between their group and secondary emotions because such a link indicates their humanness. When outgroup members attempt the same, expressing uniquely human emotions, they provoke negative behavioral reactions.

Infrahumanization theory has been pioneer in stressing the relative nature of the dehumanization phenomenon by moving it from the realm of intergroup conflict to our everyday lives as a pervasive phenomenon. However, it is limited in the sense that it only focus on the distinction between animals and humans.



## **2.2. Dual Model of Dehumanization**

More recently, a growing body of research has approached subtle dehumanization by focusing on a more comprehensive account of humanness. Although Leyens had been more explicit than previous theorists in defining humanness as that which is unique to our species (focusing on secondary emotions), Haslam proposed that the human-animal distinction is only one of two dimensions on which humanness might be understood. Therefore, going beyond the distinction between primary and secondary emotions, Haslam and colleagues (2005, for a review see Haslam & Loughnan, 2014) have considered human traits. They propose that humanness can be understood as comprised by characteristics that are uniquely human (e.g. rationality) and define boundaries between human and non-human animals and by other characteristics that represent the core of human nature (e.g. warmth), which we share with other species but that set us apart from objects or machines.

Human nature involves a set of core human attributes such as emotionality, warmth, cognitive openness, agency, and depth. Human uniqueness, on the other hand, lists uniquely human characteristics that involve civility, refinement, moral sensibility, rationality and maturity. Two forms of dehumanization result from the denial of each of these two senses of humanness. Mechanistic dehumanization occurs when groups are denied human nature traits and are likened to machines. Animalistic dehumanization refers to when groups are deprived of uniquely human traits and are compared to animals.

Moreover, human nature traits are essentialized (Bain, 2014) and therefore seen as deep, inherent and immutable as well as more universal. Human uniqueness traits are not perceived as inborn and uncontrollable, thus they are less essentialized. Bain (2014) adds the idea that uniquely human characteristics are perceived as a graded category, rather than a dichotomous judgement.

Haslam and colleagues found substantial empirical support for this double view of dehumanization (Haslam & Loughnan, 2014). In one study, Loughnan and Haslam (2007) asked participants to rate categories (e.g.: artists, children, business people) on 20 human nature and human uniqueness traits (sampled from Haslam et al., 2005). These authors used a Go-no Go task to assess implicit associations between social categories exemplifying the two dimensions of humanness, traits representing those dimensions and the two types of non-humans. They found that a social category perceived as high in human nature (i.e. artists) was more associated with human nature than with human uniqueness traits. On the other hand, a social category (i.e. business people) perceived as high in human uniqueness was more associated with human uniqueness than human nature traits. Moreover, social categories that lacked one form of humanness (i.e., uniqueness or nature) were associated with the corresponding type of nonhuman. For instance, artists' lack of uniquely human traits and business people's lack of human nature traits lead to their association with animals and objects, respectively. In sum, associations that were congruent (between artists, human nature traits, and animals; and between business people, human uniqueness traits, and machines) were consistently stronger than incongruent ones.

Haslam and colleagues (2005) found that these traits represented two different senses of humanness, which were either not or sometimes even negatively correlated. Research has often shown that the attribution of one sense of humanness is not correlated with the other sense of humanness, suggesting that both judgments are indeed independent or complementary (e.g. Bain, Vaes, Haslam, Kashima, & Guan, 2012).

Moreover, the denial of both senses of humanness can occur in the same context. Both forms of dehumanization have been found in intergroup relations and can lead to different but not necessarily opposed biases. One example is objectification, a phenomenon closely connected with the denial of human uniqueness as well as the denial of human nature.

Objectification is a central concept in feminist theory and consists in likening others or the self to objects (Nussbaum, 1995). Because of this, objectification is sometimes presented as conceptually connected to mechanistic dehumanization (e.g., Goldenberg et al., 2009; Heflick & Goldenberg, 2009). However, it can also be linked with animalistic dehumanization (e.g. women likened to cougars and panthers). Vaes, Paladino, and Puvia (2011) showed that sexually objectified women were dehumanized on the human-animal dimension. The medical field is another example where both types of dehumanization were shown to occur: in technical dehumanization patients are likened to objects (Timmermans & Almeling, 2009) but recent research has also demonstrated the denial of uniquely human emotions in the medical field (Vaes & Muratore, 2011). Aliens are another group that despite their association with mechanistic characteristics (depicted as emotionless in popular science fiction films and television series, e.g. Vulcans in Star Trek) can also be likened to animals (e.g. Castano and Giner-Sorolla, 2006).

These examples seem to point out to the idea that both senses of humanness may be concomitantly relevant in one and the same context. Both are "...complementary dimensions of social judgement that contribute in specific ways to the way we perceive and behave towards others." (Vaes et al., 2012, p. 42). Groups use one or the other dimension to distinguish themselves, according to the specific context of comparison (Bain, Park, Kwok, & Haslam, 2009; Bain, Vaes, Haslam, Kashima, & Guan, 2012).

Although Infrahumanization theory was key in stressing the subtle nature of this phenomenon, it was Haslam (2006) that clearly stated that extreme forms (in contexts of violence, genocide, war) coexist with more subtle everyday forms and that they are all part of a conceptual continuum called dehumanization. Moreover, by proposing two different senses of humanness, Haslam (2006) broadened the spectrum of dimensions in which humanness (and its denial) could be perceived.

### **2.3. Intercultural Differences**

Although several studies have supported the existence of these two senses of humanness across a variety of cultures (see Haslam, Kashima, Loughnan, Shi & Suitner, 2008; Loughnan, Haslam & Kashima, 2009) and a large similarity between cultures has been observed in how people understand both concepts (Park, Haslam, & Kashima, 2012), recent work on dehumanization has shed some light on the existing cross-cultural differences in adopting these two senses. Bain, Park, Kwok, and Haslam (2009), for example, showed that people in different cultures differ in the dimension they use to dehumanize others. A study with Australian and Chinese participants indicated that Australian participants dehumanized the Chinese only on the human nature dimension, while Chinese participants dehumanized Australians mainly on the human uniqueness dimension. In contrast, Italian participants have been found to dehumanize other groups on both humanness dimensions (Vaes, 2010).

These results suggest that different dimensions of humanness are relevant in different cultural contexts. Bain, Vaes, Kashima, Haslam, and Guan (2012) tested this idea by asking participants from Australian, Chinese and Italian samples to name all the characteristics that came to mind when defining what it means to be human, judging these afterwards on the human nature and human uniqueness dimensions. Australians mainly indicated characteristics that were high on human nature and low on human uniqueness, and the opposite occurred for Chinese participants. Italians selected characteristics both high on human nature and human uniqueness.

Bain and colleagues (2012) speculated on why cultures emphasize each dimension. Emphasizing human uniqueness may be due to an internalization of the countries' history of achievement in education, high culture, art and philosophy (e.g. China, Italy) and also its exportation to other parts of the world. Countries with a younger history, namely those with a colonial background (such as Australia), lack comparable achievements in the human

uniqueness dimension and therefore emphasize human nature characteristics (those invoking symbolic youth such as emotionality and vitality).

These findings help to explain those previously obtained by Bain and colleagues (2009) in which the Chinese denied human uniqueness to outgroups and Australians denied human nature. Therefore, the different emphases given to one or the other dimension correspond to the dimensions on which these groups deny humanness to each other.

According to Bain (2014), these results suggest that different cultures define what it means to be human in different ways, emphasizing the sense of humanness that is most salient to them when making intergroup comparisons. Therefore, humanness attributions may reveal an ethnocentric bias through the selection of the relevant dimension being attributed.

#### **2.4. Dehumanizing Metaphors**

Most of the research described above focuses on the denial of certain characteristics to groups. Whether these are secondary emotions, human nature or human uniqueness characteristics, they are all examples of an attribute-based approach to dehumanization.

However, as we also described above, some authors (e.g. Loughnan & Haslam, 2007) studied the possibility that groups are likened to a nonhuman entity, like animals or robots. This approach is termed metaphor-based. Pérez, Moscovici and Chulvi (2002; 2007) advanced the concept of ontologization as a stage in which groups are represented outside the social map. These authors stressed the link between culture and nature traits and the human and the animal identity. According to these authors, characterizing minority groups using nature traits represents more than their view as animals, but as wild animals, which would lead to their exclusion from any human category. Goff, Eberhardt, Williams and Jackson (2008), also using a metaphoric approach, tested the association between a particular group and a well-known animal metaphor: the black-ape association. They found that White

Americans tended to associate Blacks more with ape images than with other wild animals. None of these associations was observed with White targets. Capozza, Boccato, Andrighetto and Falvo (2009), in two studies with Italian (northern and southern) participants, tested the hypothesis that categorization of ambiguous human/ape faces depends on group membership: people tend to protect ingroup humanity, but not that of the outgroup. As stimuli they used human, ape, ambiguous human/ape faces (generated using a computerized morphing procedure). Participants were asked to categorize stimuli as human or ape. They were either told that human exemplars were ingroup members or that human exemplars were outgroup members. The authors found that participants, in order to protect ingroup humanness, categorized ambiguous stimuli as ape more often in the ingroup than in the outgroup condition.

Loughnan and colleagues (2009) provided the first test of the interchangeability of these two approaches. Participants were presented with four unknown novel groups that were either lacking human uniqueness attributes, human nature attributes, depicted as animals or robots. These authors found that these participants were able to infer the denial of attributes from the metaphor and vice-versa.

A third approach to dehumanization, the target-based approach (Vaes & Paladino, 2010), proposes that the specific characteristic being denied to groups is less important than the target to which humanness is attributed or denied to. Not only are uniquely human characteristics more attributed to the ingroup than to the outgroup, but ingroup attributes are themselves perceived to be more uniquely human. Vaes and colleagues (2012) consider this approach as having some analogies with the Ingroup Projection Model (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). Mummendey and Wenzel (1999) claim that people tend to perceive the ingroup and its characteristics as being more prototypical of the superordinate category than the outgroup and its characteristics. It seems as if this approach

may be seen as a special case of ingroup projection, insofar as it refers to a particular superordinate category: Humans. Group members consider their group as more prototypical of the superordinate category (in this case humanness) than the outgroup, whereas the latter is then seen as less inclusive of such category. One of the studies conducted under this approach (e.g. Vaes and Paladino, 2010 but for a review see Vaes et al., 2012) was that of Paladino and Vaes (2009). These authors presented participants with a set of traits pretested to be equally human that were either characteristic of ingroup or outgroup members. As hypothesized, ingroup traits were found to be more uniquely human than outgroup traits across three different intergroup contexts.

What is still missing though is a more encompassing approach taking into account the characteristics of the context in which groups exist and relate with each other.

## **2.5. Moderators of Group Dehumanization**

Vaes and colleagues (2012) presented a threefold typology to categorize the moderating variables that have been found to play a role in intergroup dehumanization: boundaries, relations and ideologies.

Many theories have studied intergroup relations focusing on what makes one group distinctive from the other, allowing people to differentiate between us and them: its boundaries. Other theories have dealt with relations that groups have with each other. The third class of theories has tried to understand intergroup relations as a function of the shared beliefs that affect our interpretation of the world (Jost, 2006), or ideologies of group members, that accentuate or play down disparities between groups.

Because of their particular relevance to the present work, we will focus on the research efforts concerning the role of boundaries and socio-structural relations in the perceived humanness of groups.

### **2.5.1 Boundaries variables.**

Social categorization processes and group boundaries, that is, what allows group members to differentiate between themselves and others, have been a central variable in the coexistence between groups (e.g., Gaertner & Dovidio, 2000; Wilder, 1981).

Concerning boundaries between groups, Vaes and colleagues (2012) pointed out several moderators of the ingroup-outgroup difference in humanness attributions: ingroup glorification and attachment, identification with a superordinate category, ingroup identification and existential concerns. The latter is not of interest for the current work and will not be further described (but see Vaes et al., 2012).

People can vary in the degree of attachment they have to their group. Roccas, Klar, and Liviatan (2006), proposed a bidimensional view of identification differentiating between group attachment and glorification. Group attachment is linked with patriotism and includes a subjective positive identification with the essence and common fate of the ingroup. Glorification, on the other hand, relies on a comparative judgment and implies that one believes that one's own group is superior to other groups. Leidner, Castano, Zaiser and Giner-Sorolla (2010) showed that only ingroup glorification, but not ingroup attachment, was linked to outgroup dehumanization.

The Common Ingroup Identity Model (CIIM, Gaertner & Dovidio, 2000) focusses on cognitive representations of groups as a potential mediating factor between positive intergroup contact conditions and prejudice reduction. Substantial evidence has demonstrated the robustness of intergroup contact in ameliorating intergroup relations and reducing bias and conflict (Pettigrew & Tropp, 2006, 2008). Research has clearly established the positive effects that direct intergroup contact can have for improving intergroup relations, especially when contact is structured around Allport's (1954) proposed set of facilitating factors, including equal status contact, cooperative interaction, common goals, and the support of relevant



authorities (for a recent review see Tausch & Hewstone, 2010). According to the CIIM, cooperative contact should reduce the salience of group distinctions while at the same time foster the adoption of a superordinate identity, including both ingroup and outgroup. The recategorization of groups from “us” and “them” to a superordinate, more inclusive “we” (common ingroup identity) should, in turn, redirect the cognitive and motivational forces producing ingroup favoritism to former outgroup members who are now considered ingroup members of the common ingroup. These forces should then produce positive cognitive, affective, and behavioral consequences for intergroup relations. The CIIM has received considerable support from an impressive number of experimental and field studies (for reviews, see Gaertner & Dovidio, 2000).

Gaunt (2009) evaluated the CIIM with respect to its potential to reduce outgroup dehumanization by examining the relationship between Jewish (the high status group) and Arab Israelis (the lower status group). In two correlational studies, Israeli Jews (Study 1) and Israeli Arabs (Study 2) served as participants and their identification with the Israeli superordinate category was measured. Gaunt wanted to test whether a common identity would reduce outgroup dehumanization. Results revealed that the more participants perceived the ingroup and the outgroup as sharing a common superordinate category, the more they attributed secondary emotions to the outgroup, reducing the difference in humanness between the ingroup and the outgroup. Hence, in both samples, common identity played the role of moderator. Also noteworthy is that these shifts in social categorization did not influence the attribution of secondary emotions to the ingroup, but only increased the attribution of secondary emotions to the outgroup. Thus, identification with the common ingroup increased humanization of the outgroup and did not reduce the humanization of the ingroup.

Additional evidence was obtained by Capozza and colleagues (2012). In two studies they evaluated intergroup contact as a strategy to reduce outgroup dehumanization as well. The

authors found that contact was associated with both degraded intergroup boundaries and a higher salience of a superordinate identity. In turn, the less salient the two-groups representation (i.e., representation as two distinct and separate groups) and the stronger the one-group representation (i.e., representation as a common ingroup), the lower were the anxiety levels and the higher were empathy levels, both emotions being proximal predictors of humanness attributions. Group representations and emotions mediated the relation between contact and humanness attributions. Moreover, Capozza and colleagues (2014), found that extended contact, that is, knowledge that an ingroup member has a close relationship with an outgroup member (Wright, Aron, MacLauglin-Volpe & Ropp, 1997), reduced outgroup dehumanization via the inclusion of the outgroup in the self. The authors reasoned that the inclusion of both the ingroup and the outgroup in the self assimilates the two groups, thereby reducing the difference in their perceived humanness.

For people to be motivated to humanize their ingroup, they need to value their membership and identify with it. Ingroup identification has been found to moderate the attribution of secondary emotions to the ingroup but not the outgroup (Paladino, Vaes, Castano, Demoulin, and Leyens, 2004). Demoulin and colleagues (2009) varied the meaningfulness of the intergroup categorization criteria by: either randomly assigning participants to a group, asking participants to choose their group according to their preferences for a color, or according to the type of career they wanted to pursue. They found that outgroup dehumanization only occurred when the categorization was perceived as meaningful (attribution of more secondary emotions to the ingroup than to the outgroup). These results show that mere categorization is not enough for dehumanization to occur. Categories need to be meaningful.

Insofar the abovementioned variables have showed us that the type of identification (attachment or glorification) and the meaningfulness of the categorization play an important role in the perceived humanness of others. Glorification of one's group as well as belonging to

a meaningful category may indeed increase outgroup dehumanization. Other studies, in turn, showed that representing ingroup and outgroup as part of a superordinate category (elicited by contact in Cappozza et al., 2012) reduces dehumanization of the latter.

Although important, these studies did not take into account what was the relation between groups.

### **2.5.2. Social structural variables.**

Several relational variables that moderate people's attitudes toward outgroup members have been studied (e.g. Yzerbyt & Demoulin, 2010). Cooperation within groups and competition between them were the core elements in the Realistic Conflict Theory (Campbell, 1965) and of Sherif and colleagues initial attempt to understand prejudice (Sherif, Harvey, White, Wood, & Sherif, 1961). Competition was connected to how people perceive others' warmth, one of the fundamental dimensions in social judgment (Wojciszke & Klusek, 1996; S. Fiske and colleagues, 2007). Competence, on the other hand, is linked with status asymmetries between groups. Power differences directly affect the way people treat each other (Guinote, 2007). Finally, threat perceptions are a recurrent reality when dealing with different groups and have been the focus of many studies in the field of intergroup relations (e.g., Stephan & Stephan, 2000) and specifically in outgroup dehumanization (Pereira, Vala and Leyens, 2009).

The abovementioned relational variables have shown their importance in understanding intergroup behavior and are likely to moderate the perceived humanness of groups (for a review see Vaes et al., 2012). Because cooperation or competition between groups as well as power differences are not manipulated in social relations in this thesis, we will describe only the evidence referring to status as a moderator of humanness attributions to ingroup and outgroup members.

### ***2.5.2.1 Status.***

Early studies on status showed that both low and high status groups dehumanized the outgroup. Leyens and colleagues (2001), for example, found that Canarians (i.e., the low status group) attributed less secondary emotions to mainland Spanish people (i.e. the high status group) than to their own group, and they did so to the same extent as the mainland Spanish people did to them. Similar results were obtained in several studies using a variety of paradigms and groups (e.g., Demoulin et al., 2005; Paladino et al., 2002; Paladino & Vaes, 2009; Rodriguez et al., 2011; but see Vaes et al., 2012). Status differences were then said not to be a necessary or sufficient variable for subtle forms of dehumanization to occur (for a review see Leyens, 2009), nor was the dehumanization of the other group a one-way bias in which only the dominant derogated the dominated. Hence, the reasoning became that the status of the outgroup did not play a role in the dehumanization process (e.g., Leyens, 2009).

For many years this reasoning hindered the importance of status differences, until their role was tested through their link with competence (S. Fiske et al., 2007). Whereas competition between groups is inversely related to their perceived warmth, status indicates whether a group will be seen as competent or not. Therefore, competence has been often interpreted as a proxy for status. Jones-Lumby and Haslam (2005) provided evidence for the link between the two senses of humanness and the two dimensions of social judgment. These authors asked participants to rate five groups on 64 traits. Participants then rated these traits on the two pairs of theoretical stereotype content dimensions: Warmth and Competence, and the two senses of humanness. Mean ratings were then used in a multidimensional scaling analysis (MDS) to yield an empirical stereotype content space. The groups' coordinates in this space were then correlated with the four theoretical dimensions to assess how well they captured the empirically obtained dimensions. Their results indicated that these dimensions were related, but at the same time meaningfully distinct. First, human nature tended to be positively

correlated with both warmth and competence. This is consistent with the view that groups perceived to be low in both are especially prone to be dehumanized (Harris & Fiske, 2006). Human uniqueness, on the other hand, was correlated with competence but not warmth. Given this link, Haslam, Loughan and colleagues (2008) hypothesized that low status outgroups would be seen as less uniquely human than high status outgroups. In a set of studies with Italian participants, Vaes and Paladino (2010) tested this hypothesis. In a pilot study, they selected nine outgroups that best represented each of the four quadrants (low-warmth and low-competence, low-warmth and high-competence, high-warmth and low-competence and high-warmth and high-competence) by asking participants to rate each outgroup in both warmth and competence traits (taken from S. Fiske et al., 2002). Comparing the humanness ratings of the competent outgroups to the other outgroups they found that competent, higher status outgroups were seen as more human than the lower status, less competent outgroups. The perceived humanness of the ingroup, however, did not vary in terms of competence or status. Moreover, the warm outgroups were not seen as more or less human compared to the other types of outgroups.

Recently, Miranda, Gouveia-Pereira and Vaes (2010b), experimentally replicated these results using an adapted minimal group paradigm and measuring the attribution of secondary emotions. Participants were led to believe that they belonged to a group either high or low competence and high or low warmth (excluding the low-warmth and low-competence ingroup; as social groups do not allocate themselves in this quadrant; e.g. Cuddy et al., 2009). Participants were then confronted with a different group of people that represented another quadrant of the stereotype content model. In each condition, different combinations that paired the different ingroups and outgroups were presented to participants, except those in which the ingroup and the outgroup would be the same. These authors found that differences in competence between the groups moderated participants' tendency to dehumanize the

outgroup. Participants attributed more secondary emotions to the ingroup than to the outgroup only when the ingroup had more competence than the outgroup. When the ingroup and the outgroup differed in warmth, no moderation was found.

Other evidence that shows that status can play a role in the dehumanization of the outgroup comes from research that has focused on the ‘lowest of the low’ (Harris and Fiske, 2006; 2009). Groups that not only have low status, but are often marginalized in society and marked by overt prejudice, such as the homeless and addicts, are especially dehumanized. These authors compared groups from the four quadrants of the stereotype content model and found that only extreme outgroups, both stereotypically hostile and incompetent (low warmth, low competence) were dehumanized. Measuring neural responses using an fMRI and focusing on the medial prefrontal cortex (mPFC), the region of the brain that is recruited for social judgments, these authors found mPFC activation for all social groups except for the extreme low-low outgroups, who especially activated the insula and the amygdala, consistent with disgust reactions. Disgust is the emotion that, according to the stereotype content model, is mainly associated with such groups. These specific outgroups induced a pattern of brain activation that did not differ from the pattern of brain activation elicited by (disgusting) objects.

Vaes and Paladino (2010) found similar results. It was particularly outgroups perceived to lack both warmth and competence that were denied full humanness.

Together, these data support the idea that low status outgroups, that are disliked and marginalized, are the most likely victims of dehumanization and are confronted with harsher forms of dehumanization than other outgroups (Vaes et al., 2012).

What about low status groups? Do they dehumanize the outgroup? Miranda, Gouveia-Pereira and Vaes (2010a) found that actual low status groups do not dehumanize the dominant outgroup so easily. Capozza and colleagues (2012), measuring dehumanization by the

differential association of ingroup and outgroup with human and animal words, also found that only higher status group members dehumanized the lower status outgroup, whereas lower status groups did not dehumanize the higher status outgroup.

Not many studies have focused on the role of status in humanness attributions to the ingroup. If anything, the few studies that have measured it seem to suggest that people do not (de)humanize the ingroup differently as a function of status (Vaes & Paladino, 2010). A recent exception was reported in a series of studies that focused on the role of occupational status in dehumanization. Iatridis (2013) adopted the emotion attribution paradigm by Leyens and colleagues (2001) to test the role of stable and legitimate occupational status differences in the perceived humanness of the ingroup and the outgroup. In a set of three studies, results confirmed that members of higher status occupational groups (e.g., white-collar workers, lawyers, and secondary school teachers compared to primary school teachers) dehumanized the lower status outgroup (e.g., blue-collar workers, shop keepers, secondary school teachers compared to university teachers). The opposite did not occur. Interestingly, in two of these experiments members of the lower status occupational group attributed fewer secondary emotions to their ingroup compared to the members of a higher status occupational group. Taken together, these studies show that occupational status can also change the extent to which we perceive our own group as human, to the point where the commonly found effect in favor of the ingroup is reversed. Iatridis (2013) argued that it might be the case that differences in status, at least with occupational groups, were acknowledged and legitimized by both high and low status groups. Status differences vary in the extent to which they are consensually acknowledged and shared, and seen as a legitimate outcome of intergroup comparisons. In the context of national, ethnic, or regional groups, status differences are not always perceived as legitimate. Stable and legitimate intergroup differences make lower status groups tend more towards out-group favoritism than ingroup favoritism (Rubin & Hewstone,

2004). Evidence that supports the legitimacy of occupational status was obtained by Kelley and Evans (1993), showing that, when asked to rank various professions according to their social status in terms of pay, for example, there is a large consensus even across different countries.

## **2.6. Intergroup relations**

The aforementioned research has shed some light on specific variables that have been shown to moderate the attribution of humanness to groups. Contact that leads to recategorization of groups in a common uniting category, blurring boundaries between them, has been shown to reduce outgroup dehumanization (Gaunt, 2009). Status asymmetries between ingroup and outgroup members have been shown to affect the perceived humanness of both groups. Higher status outgroups tend to be seen as more human than the lower status (e.g.: Vaes & Paladino, 2010), lower status groups either do not dehumanize the higher status outgroup (e.g. Miranda and colleagues, 2010b) or in some cases superhumanize them (e.g.: occupational status, Iatridis, 2013).

The focus of psychological research on intergroup relations has concerned attitudes towards, and representations of, one's own group as well as other groups (see Waldzus, Schubert & Paladino, 2012). However, research has not yet attended to the psychological processes that underlie the relational nature of intergroup attitudes and behavior. Dixon and colleagues (2012) recommended that the relational implications of prejudice must be brought forward in research, by moving the focus from the dualistic "dominant" versus "subordinate" group model to other kinds of relatedness." Waldzus, Schubert and Paladino (2012) go beyond such recommendations, by emphasizing the importance of analyzing the psychological processes involved in the construction of social relations.



Insofar, no studies have focused on the role of relations *per se* in the way we perceive our group and other groups as human. Haslam (2006) had already suggested that one cognitive process that may be involved in the dehumanization of others is how people construe their relation with the dehumanized other. A. Fiske (1991) defines as “asocial” and “null” relations, those in which others are not regarded as social interaction partners, but rather perceived as objects or obstacles. When no social relation is perceived to exist with the dehumanized other, Haslam (2006) suggests that people dehumanize others in a mechanistic way, as one that involves a more distancing and objectifying approach. If this perceived lack of relatedness can lead to perceiving others as less than human, then one can assume that relatedness may constitute a fundamental dimension of humanness perception.

Evidence for a link between humanness and relatedness comes from a recent study by Wilson and Haslam (2013). In this study they asked participants to rate a wide variety of prosocial, non-social and anti-social behaviors in the human nature and human uniqueness dimensions. Whereas human uniqueness was attributed to cognitively complex capacities involved in abstract and mathematical reasoning, human nature was, among other behaviors, characterized by capacities of forming social groups and maintaining affectionate relationships. If forming and maintaining relations with others is perceived as part of what makes us human, then not relating to others should liken individuals and groups to objects or automatons.

In order to address this link, and as proposed by Waldzus and colleagues (2012) for intergroup relations, we use the framework provided by Relational Models Theory (RMT; A. Fiske 1992; 2004).

### **2.6.1 Relational models.**

Relational models theory (RMT; Fiske, 1991, 1992) assumes that relational thinking, perceiving, judging, behaving is completely different from that which is non-relational. People do not think about each other in the same way as they think about objects. According to RMT, relational thinking has the function of allowing the coordination of complex interactions with others. Relation is then defined as the way in which people coordinate so that their actions, affects, evaluations or thoughts are complementary. This theory proposes that people use few cognitive relational models to interact with others.

The four relational models proposed are universal and innate cognitive representations of social relationships. These models are used to form social relationships and are the basis of constitution of groups as well as the formation of social identity and the relational self (Fiske & Haslam, 2005; Fiske, 1992). RMT suggests that social relations are mental representations and are organized as independent models. However, relations tend to be organized according to more than one relational model (Haslam & Fiske, 1999; Haslam, 1994).

All in all, relational models allow us to interpret the behavior and intentions of others. But how do we interpret information in order to apply the correct model with different relational partners? People are equipped with innate proclivities (mods) at the attentional, cognitive, motivational and developmental levels. These, together with specific patterns that exist in a certain cultural context (preos), are then used to understand the local coordination procedures (Fiske, 2000).

The four models advanced by RMT are: Communal Sharing (CS), in which people share as undifferentiated entities, Authority Ranking (AR), in which those involved are ranked according to a linear hierarchy, Equality Matching (EM), where relational partners give and take on equal terms in order to maintain balance, and Market Pricing (MP), where exchanges or distributions are based on proportions (Fiske, 1991, 1992).

In communal sharing relationships people are seen as equivalent and as essentially the same. Examples of relations with a strong communal component are close kinship ties and intimate relations. Such relations rely on the assumption that its members are connected through an essence. This essence can be of a factual nature (e.g., blood in kins) as well as a perceived meaning (e.g., shared beliefs). These relations are constituted through altruism, solidarity and unity, in which the principle of “all for one and one for all” is applied. Given that, partners in communal sharing relations feel motivated to share and to attend to the needs of those involved and to take their perspective. Each relational partner has access to the resources he or she needs without keeping track of what he or she has contributed to the shared pool of resources. (Fiske, 1992, 2004).

In authority ranking relationships people are ordered in a linear hierarchy according to a dimension such as age or experience. Relations between people of different ranks in the military are mostly dominated by this model. Both parts involved in this hierarchy, superiors and subordinates, contribute to maintaining the asymmetry that characterizes the structure of this relation (Rai & Fiske, 2011). Superiors have more privileges than those placed below them in the rank. Subordinates, in turn, are entitled to pastoral care and protection (Fiske, 1992, 2004) but are required to respect and pay deference to their superiors, hence supporting the asymmetrical structure of the relationship. Superiors can only exist with subordinates. Subordinates provide superiors with status and prestige and allow them to be ranked above in the hierarchy. This is only possible if subordinates feel they have the protection and care from those superior to them.

In equality matching relations people are entitled to the same amount as others in the relation. In this relation, people are concerned with maintaining balance in their relations and engage in concrete operations such as comparing, balancing and matching items to ensure their correspondence (Fiske, 1992). People keep track of what they give and get in return from

others involved in this relation. Therefore, the reciprocity norm is the basis of all interactions between partners. This norm is applied in relationships among peers and colleagues (people with equal status). In order to maintain the relationship symmetrical, reciprocation must then be in kind: if one gets an apple, then one is expected to return an apple; if one is attacked by another, then one is expected to seek out revenge in a similar manner.

To determine what is rational and has the best cost/benefit ratio people apply the ratios and proportions that come from the market pricing model. Such ratios and proportions are based on utilitarian principles and the greater good for the greater number. Money is a good example of proportions. The price one pays for the products or services one receives is dependent on its perceived value. Cost-benefit analysis of the situation before the transaction occurs will deem the good as worth for the amount of money paid and whether the transaction is fair or not. Thus, proportionality in market pricing relationships determines that what is given should be proportional to what is received (Fiske, 1992). The fairness principle is important in market pricing relations. Utilitarianism in this model is not the selfish utilitarian rationality that is assumed by classical economics. People usually prefer the fair deal instead of the deal that is most advantageous for them. Thus, it is mutual cost/benefit analysis of both partners that is then taken into account when considering the proportionality of the different options.

However, sometimes people do not coordinate. People may think and act without reference to any relational standard (Fiske & Haslam, 2005). This happens, for example, when people ignore others and discard their meaning as beings, even when aware of their existence and presence. In these “null” interactions, relational motivations are not present and people disregard others as potential relation partners, treating them as if they lack meaningful desires, intentions or needs, as if they are objects.

### **Chapter 3 - A Relational Approach to the Subtle Dehumanization of Groups**

Previous research suggested that outgroup dehumanization can be reduced due to the groups being perceived as part of a large, more inclusive, superordinate category (Capozza et al., 2012; Gaunt, 2009) and the inclusion of the outgroup in the self (Capozza et al., 2014). This can be considered as akin to communal sharing relations, in which individuals belong to the same unit and believe they share something that makes them fundamentally equivalent and differentiates them from outsiders (A. Fiske, 1991, 1992). What is, therefore, not entirely clear is whether such a reduction is due to a recategorization of the two groups into a common and more inclusive category or due to the relation these are involved in.

The idea that recategorization is necessary for considering outgroup members as human would imply that only communal relations would be able to reduce outgroup dehumanization. In contrast, in the current research we question this idea and test whether being a partner in a relation with outgroup members contributes to increase their perceived humanness, even if the relation is not necessarily based on communal sharing.

Therefore, the current thesis aims to investigate whether the reduction of outgroup dehumanization occurs through recategorization of ingroup and outgroup into a common uniting category or whether it is due to the relation in which these groups are involved. In short, the question is whether it is necessary that boundaries between the groups are blurred in order to reduce the dehumanization of outgroup members.

Our main prediction is that participating in a relation contributes to the humanization of outgroup members when compared to not participating in a relation. This hypothesis derives from RMT (Fiske, 1991), which assumes that relations, as opposed to the absence of relation, activate specific relational concerns towards interaction partners. In the absence of a relation, such relational concerns are not activated. Because of this, others are not regarded as potential

interaction partners and may not be attributed intentions, needs, desires that are typical for human relations (Fiske & Haslam, 2005).

One should also consider the dimension in which relations potentially humanize the outgroup. Concerning human nature, we predict that all relations should increase the perceived human nature of outgroup members in comparison to not participating in relations. According to Haslam (2006) the absence of relation should be linked to a more distancing, objectifying view from the other, that is, likening the other to an object or a machine through the denial of human nature.

Concerning human uniqueness, we expect that only relations such as equality matching and market pricing are able to increase the perceived human uniqueness of outgroup members. Whereas people observe interactions of animals and have interactions with animals that are similar to what they know from communal sharing and authority ranking relations, Fiske (1991) argues that there is no consistent evidence of non-human animals engaging in equality matching and market pricing relations. There are no reports of turn taking or balancing contributions in nonhuman animals, and humans are the only species known to use ratios and proportions in their relations. Thus, equality matching and market pricing relations may be perceived as those in which only humans engage. Because of this, we expect these relations to increase the perceived human uniqueness of outgroup members.

Given that status is a well-known moderator of outgroup dehumanization, the humanizing potential of authority ranking relations is expected to depend on the relative status position of its members. We therefore intend to explore human nature and human uniqueness attributions to outgroup members in both superior and inferior positions.

### **3.1. Humanization of the Ingroup**

According to Vaes and colleagues (2012), humanization of ingroup members depends on distinct moderators from those that affect outgroup humanness. We mostly do not expect variations in the perceived humanness of the ingroup. However, there are some conditions in which ingroup humanness may be affected. The first concerns status relations. Vaes and Paladino (2010) found that people do not humanize ingroup members differently according to their status. However, occupational status has been recently identified as a potential moderator of ingroup humanization (Iatridis, 2013). We wish to explore if status differences also affect humanness attributions to ingroup members. As found by Iatridis (2013) participants may not only perceive their group as less uniquely human when its members are in a low status position than when these are in a high status position, but they may also perceive themselves as less uniquely human than outgroup members in a high status position. Given the inconsistent status position effects reported in the literature we also intend to address participants' attributions on the human nature dimension.

More importantly, do we expect that participation in a relation moderates the perceived humanness of ingroup members? Drawing from RMT and following the same reasoning as presented before for the outgroup, we predict that participation in a relation may in fact humanize ingroup members to a greater extent than not participating in a relation. Although a humanness bias in favor of ingroup members is expected to be present (Leyens et al., 2001), we also investigate whether ingroup members may even be dehumanized when not participating in relations in which outgroup members are involved.

In the following five chapters, we will present empirical evidence that tests the aforementioned hypotheses and opens interesting questions regarding the role of social relations in the humanization of groups.

### **3.2. Summary of Hypotheses**

In sum, we hypothesize that:

- 1) Participating in a relation contributes to the humanization of outgroup members when compared to not participating in a relation;
- 2) All relations increase the perceived human nature of outgroup members in comparison to not participating in relations;
- 3) Participating in equality matching and market pricing relations, those that only humans engage in, increases the perceived human uniqueness of outgroup members;
- 4) Relations between ingroup and outgroup members involving different status positions (i.e. authority ranking) will affect the perceived humanness of both groups involved.



## **CHAPTER 4- The Role of Social Relations in Outgroup Dehumanization**

What do we talk about when we talk about humanness? The first thing that comes to mind is that humanness is something that humans have and non-humans do not. Reducing the concept of humanness to belonging or not belonging to certain categories definitely reduces some of its complexity to more manageable terms. If “humanity” is considered the superordinate category to which all humans belong, then why would some groups be considered less human than others? Self Categorization Theory (Turner, 1987/1990) proposes that the evaluation of a group depends on its degree of prototypicality from the superordinate level and because of that a group is evaluated favorably when it is considered representative of the superordinate category. Therefore, according to the Ingroup Projection Model (Mummendey & Wenzel, 1999), group members consider their group as more prototypical of the superordinate category than the outgroup, which is then seen as less inclusive of such a category.

Most research in the dehumanization field is in line with this categorical approach (for a review see Vaes et al., 2012). In the present research, we propose a different account of dehumanization by focusing on the role of social relations in group dehumanization.

Of the four models proposed by Relational Models Theory (RMT, A. Fiske, 1991, 1992), in this chapter we address only two: communal sharing and market pricing. These two are assumed to be the most distant ones in terms of their development, ontologically (children learn first communal sharing and market pricing last) and presumably phylogenetically. Moreover, communal sharing clearly implies blurring boundaries while market pricing clearly assumes independent distinct units being in the relation (A. Fiske, 1991). Communal sharing (CS) relations are those in which people do not differentiate between members of a group. They are focused on what they have in common, therefore disregarding individual differences.

They perceive themselves as sharing a common substance or essence, which renders them as fundamentally the same. Market pricing (MP) relations are those based on proportionality and organized in terms of cost-benefit analyses and rational calculations of utility. This type of relation relies on principles based on utilitarianism: the greater good for the greater number.

Being a partner in a relation, in which people are part of the same unit; or are guided by socially meaningful cost-benefit analysis, should always require perceiving the other as a meaningful interaction partner to whom specific relational concerns are present, as opposed to “null” interactions.

In the research reported in the current chapter we test whether being a partner in a relation – CS or MP - with outgroup members contributes to increase their perceived humanness.

The following studies provide an initial testing of the hypothesis that both CS and MP relations reduce outgroup dehumanization when compared to no relation.

#### **4.1. Overview of the Studies and Hypotheses**

In order to address this hypothesis, we conducted three studies in which Italian participants were presented a description of one of two types of relation (communal sharing or market pricing) or no relation between an Italian population (i.e., the ingroup) and that of an unknown origin (i.e. the outgroup) (study 1) or between a foreign population (Tasmanian) and that of an unknown origin (studies 2 and 3).

We predict that when a group is a partner in a relation with the ingroup there is less dehumanization of its members, compared to when it is not a partner in a relation.

Relation was operationalized by using two of Fiske’s (1991) relational models: Communal Sharing and Market Pricing.

To assess the perceived humanness of ingroup and outgroup, we measured the association of ingroup and outgroup with human and animal related words was used (Viki, Winchester,

Titshall, Chisago, Pina & Russel, 2006, Expt. 2a and 2b) as well as the attribution of human characteristics. Moreover, we used measures of attitudes towards each of the groups and measures to characterize the representation of the intergroup situation (one group, two groups and separate individuals), perceived valence of the relation as well as collaboration in the relation.

## **4.2. Study 1**

The purpose of this study was to understand if being a partner in a relation with the ingroup compared to the absence of a relation would reduce outgroup dehumanization. Our goal was also to understand if being a partner in a relation with the ingroup would be sufficient to increase the perceived humanness of the outgroup or whether it would be necessary that this relation implies recategorization of groups into a common ingroup identity.

Similarly to what was found by Viki and colleagues (2006, Expt. 2a and 2b) we hypothesize that participants attribute humanness to a greater extent to the ingroup than to the outgroup.

More importantly, we also expect the outgroup to be attributed humanness to a greater extent when its members are partners in a relation with the ingroup than when they are not. This hypothesis derives from RMT, given that in the absence of a relation between the groups, its members are disregarded as relational partners. In these, because of the lack of any relational motivation, outgroup members should be seen as less human than when they are relational partners with the ingroup.

Concerning the cognitive representation of the groups, we expected CS relations to elicit a one-group representation to a greater extent than MP relations. Because of this, an alternative hypothesis would predict that CS relations reduce dehumanization of outgroup members to a greater extent than MP relations. This would therefore support what has been found in

previous literature (e.g. Gaunt, 2009): that recategorization into a common uniting category is indeed necessary to reduce outgroup dehumanization.

#### **4.2.1. Method.**

##### ***4.2.1.1. Participants and design.***

81 participants were recruited in Italy via e-mail and using social networks for a study on “Media perception”. They were randomly assigned to a (3 type of relation: communal sharing vs. market pricing vs. no relation) between-subjects design. From the total sample, eight did not respond to the main dependent variables, one was not of Italian nationality and one reported to be underage. Hence, data of 71 (37 females, mean age = 25.26,  $SD = 8.12$ ) entered the analyses.

##### ***4.2.1.2. Procedure and materials.***

This study was conducted online using Survey Monkey software and justified by a cover story stating that the survey intended to understand the effectiveness of the scientific divulgation process in the media. The language used in all material was Italian.

Participants were presented with a supposed article published in the journal “Visione” stating a recent anthropological finding. This fictional research referred to the first documented evidence of the presence of a population of unknown origin, the Sequera, in an area of North Italy in the 1800s. This population was said to have established either a communal sharing (CSR condition) or a market pricing (MPR condition) relation or no relation (NoR condition) with the local Italian population (the manipulation texts and all the original materials in Italian, as well as their translation, are in Appendix A).

In the CSR condition the article stated that “...Italians and the Sequera entered in contact and established a sharing relation.”, that both populations “...contributed with their work and according to their possibilities to the collective well-being.” and that they could also “...freely take what they needed from the collective resources.” It was also said that, according to the coordinator of the team of anthropologists that conducted the research, “...if a family, regardless of being Sequera or Italian, lost its harvest, it received help to survive the winter from those who had had a good harvest, regardless of being Sequera or Italian”. The article further informed that “...the populations also shared festivities and many rituals”. To celebrate harvests, births, marriages, amongst other occasions, the two populations would “organize celebrations in which, according to the ritual, they would eat and dance together.” Romantic and intimate relations between the Italians and the Sequera were also said to be quite common.

In the MPR condition the article indicated that the populations developed an economic exchange relation, “...in which market logic applies” and which served the “...commercial purposes of acquiring and selling products”. It was stated that after the harvest, which each population would do on its own, the populations “...would meet at the cereal market where they engaged before the sale, in negotiation activities to determine the cost of the cereal...”, “...the price would depend on the harvest and other rational and economic considerations (if we give you this, what will you give me in return?); it was important that the price paid for goods would be proportional to the quantity and the quality of the merchandises received.” The article further indicated that the two populations had frequent meetings, but these only regarded commercial transactions, and that “...their interactions were guided solely by financial considerations and by cost-benefit analyses (does this exchange benefit me?).”

In the two conditions above mentioned, the article stated at the end that a surprising aspect was that the relation between the two populations had remained the same until today.

In the NoR condition, the article informed participants that the two populations never had contact with each other. The reason given for the lack of contact was the geographic contingencies of the landscape at that time made the passage through some mountains impossible. It was also stated that, according to the coordinator of the anthropologists' team responsible for the research, the two populations never entered in contact and were not aware of each other's existence. Therefore, "the Italian and the Sequera populations developed autonomously, without ever having had a relationship."

#### ***4.2.1.3. Measures.***

##### *4.2.1.3.1. Manipulation check.*

Participants were asked to choose from 10 sentences, that or those which, in their opinion, best described the relationship between the two populations. They could choose as many sentences as they wanted. Four sentences described a CS relation (e.g.: "What belongs to one population also belongs to the other, therefore there is a sharing relationship between them."), four described an MP relation (e.g.: "The relation consists of "acquiring and selling"; it is therefore an economic relation.") and two described the absence of relation (e.g.: "There was no relation between the two groups").

#### *4.2.1.3.2. Outgroup dehumanization.*

##### *4.2.1.3.2.1. Human and animal-related words.*

Participants were asked to perform an association task (adapted from Viki et al., 2006, to the Italian population by Fasoli, 2011<sup>2</sup>) in which they had to choose eight to ten words from a total of twenty words to characterize the Sequera (i.e., the outgroup) and the local Italian population (i.e., the ingroup). The twenty words comprised ten animal-related words (e.g., pedigree and nature) and ten human-related words (e.g., citizen and mouth).

##### *4.2.1.3.2.1. Human characteristics.*

Participants also responded to seven items pertaining to human characteristics of the Sequera ( $\alpha = .67$ ) and Italian ( $\alpha = .61$ ) populations. An example item is: “To what extent did the Sequera/Italian population make you think of rational and intelligent people?”. Participants responded on a 7-point Likert scale ranging from 1 (not at all) to 7 (completely).<sup>3</sup>

##### *4.2.1.3.3. Attitude towards the groups.*

Participants were asked to indicate their attitude towards the Sequera population and then the local Italian population by selecting the value that would best represent their attitude. They responded to both on a rating scale ranging from 1 (-100: completely negative) to 10 (100: completely positive).

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<sup>2</sup> In a previous study (Fasoli, 2011) these stimuli-words were assessed on their humanness and valence. The human-related words were judged on average as more human than the animal-related words but they did not differ in terms of valence.

<sup>3</sup> Human characteristics used in this chapter were not pretested.

#### *4.2.1.3.4. Representation of the intergroup situation.*

Participants were asked to what extent they considered that the two populations constituted one single group, constituted two separate and distinct groups or did not constitute a particular group, representing single individuals. To each of the three questions, participants responded on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree).

#### *4.2.1.3.5. Valence and collaboration.*

Participants were asked to what extent they considered the relation between the two populations as positive. The response scale was a 7-point Likert scale ranging from 1 (completely negative) to 7 (completely positive). They were also asked to what extent they considered the relation between the two populations as collaborative. The response scale was a 7-point Likert scale ranging from 1 (completely conflicting) to 7 (completely collaborative).

#### *4.2.1.3.6. Identification with the Italian ingroup.*

Participants responded to six items concerning identification (adapted from Leach et al., 2008) with the Italian ingroup ( $\alpha = .92$ ). A sample item is “Being Italian is an important part of my identity.” The response scale was a 7-point Likert scale ranging from 1 (Not at all) to 7 (Very much).



## 4.2.2. Results<sup>4</sup>

### 4.2.2.1. Manipulation check.

Three indices were computed by adding up the number of sentences that corresponded to each type of relation between the two groups or to the absence of a relation for each participant (Table 1).

A 3 (type of sentence: CS vs. MP vs. NR) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and type of sentence as a within-subjects factor was conducted.

Type of relation,  $F(2,68) = 8,42, p = .001, \eta_p^2 = .199$ , and type of sentence,  $F(1.70,115.84) = 11.62, p < .001, \eta_p^2 = .146$ , had an effect on the extent to which participants agreed that the sentences described the relation.

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(3.41,115.84) = 162.57, p < .001, \eta_p^2 = .827$ . Planned contrasts were performed to verify if participants considered that those sentences that best described the relation corresponded to the manipulated type of relation. Participants chose CS sentences to a greater extent in the CSR condition than in other conditions,  $t(68) = 16.95, p < .001$ , MP sentences to a greater extent in the MPR condition than in other conditions,  $t(68) = 16.53, p < .001$ , and NR sentences to a greater extent in the NoR condition than in other conditions  $t(68) = 22.47, p < .001$ . Simple mean comparisons (Bonferroni adjustment) presented in table 1 show the same results as those found in the planned contrasts.

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<sup>4</sup> Gender effects were examined in every dependent measure described in this chapter. The effects found were of no relevance to the hypotheses. Therefore, gender was not included in the analyses herein reported.

Table 1. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation as a function of type of relation.

	Type of sentence		
	CS	MP	NR
CSR	2.32 (1.07) <sup>a,x</sup>	0.40 (0.76) <sup>b,y</sup>	0.00 (0.00) <sup>b,y</sup>
MPR	0.05 (0.22) <sup>b,y</sup>	2.81 (0.98) <sup>a,x</sup>	0.00 (0.00) <sup>b,y</sup>
NoR	0.00 (0.00) <sup>b,y</sup>	0.04 (0.20) <sup>b,y</sup>	1.80 (0.50) <sup>a,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xy</sup> Different superscripts between measures on the same condition indicate significant differences on the extent to which participants considered that the sentences described the relation.

#### 4.2.2.2. Outgroup dehumanization.

##### 4.2.2.2.1. Human and animal words.

Regarding human and animal-related words, we first computed four indices for human and animal related words chosen for each group (see Table 2). A composite measure of humanness was then created by calculating the difference between the total number of animal words that participants could attribute to each group (10) and the actual number of words attributed, that is, ten minus the number of attributed animal words. After that we averaged this value with the number of human words attributed to each group, hence composing a measure of humanness in words for the ingroup ( $M = 7.41$ ;  $SD = 1.08$ ) and the outgroup ( $M = 6.35$ ;  $SD = 1.26$ ).

Table 2. Means (and standard deviations) of human and animal-related words attributed to the Sequera and Italian populations.

	Sequera	Italian
Human-related	5.52 (1.34)	6.59 (1.08)
Animal-related	2.83 (1.25)	1.78 (1.19)

A 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as a within-subjects factor was conducted on the degree of humanness attributed to each group.

A significant main effect of group was found,  $F(1, 68) = 39.10, p < .001, \eta_p^2 = .365$ . Participants attributed more humanness to the ingroup than to the outgroup. There was also a significant main effect of type of relation,  $F(2, 68) = 4.36, p = .017, \eta_p^2 = .114$ . Simple mean comparisons (Bonferroni adjustment) showed that participants attributed more humanness to both groups more in MPR than in NoR ( $p = .014$ ).

Most importantly, a marginally significant interaction between group and type of relation was found,  $F(2, 68) = 2.82, p = .066, \eta^2 = .050$ . To test whether type of relation moderated the dehumanization of outgroup members (by calculating the difference between groups: ingroup minus outgroup) planned contrasts were run.

We first tested whether dehumanization of the Sequera was stronger in the NoR condition than in the CSR and MPR conditions taken together. This contrast was significant,  $t(68) = 2.32, p = .023$ . Participants dehumanized the Sequera to a greater extent in the absence of relation than when the groups were in a relation. We then analyzed the residual contrast testing whether dehumanization was different between the MPR and the CSR conditions. As predicted, this contrast was not significant,  $t(68) = -0.62, p = .536$ . We also tested if dehumanization differed between CSR and the NoR condition as well as between MPR and

the NoR condition. The former was only marginally significant,  $t(68) = 1.72, p = .090$  and the latter significant,  $t(68) = 2.26, p = .027$ . As shown in table 3, outgroup dehumanization was higher in the NoR condition than in the other two relational conditions. Still regarding intergroup differences across conditions, humanness attributions were always higher for the ingroup than for the outgroup, not only in the absence of a relation but also in both relational conditions.

In order to understand if the dehumanization of the Sequera varied across conditions due to changes in the perceived humanness of ingroup members, outgroup members or both, we tested similar planned contrasts but separately for group.

Regarding the outgroup, we started by testing if humanness attributions to the outgroup were lower in the NoR condition than in the CSR and MPR conditions taken together. This contrast was in the predicted direction and significant,  $t(68) = -3.19, p = .002$ . We then analyzed the residual contrast testing whether humanness attributed to the outgroup was different between the MPR and the CSR. Unexpectedly, this contrast was marginally significant  $t(68) = 1.79, p = .079$ , indicating slightly higher values in the MPR condition than in the CSR condition. Participants attributed more humanness to the outgroup in MPR than CSR. We also tested if humanness attributed to the outgroup differed between CSR and the NoR conditions as well as between MPR and the NoR conditions. The former was only marginally significant,  $t(68) = -1.87, p = .066$  and the latter significant,  $t(68) = -3.57, p = .001$ . Table 3 also shows that humanness attributions to the outgroup were lower in NoR than in the other two.

The same planned contrasts were run for ingroup humanness attributions but none showed significant results,  $p$ 's  $> .261$ . As can be seen in table 3, the means for humanness attributions to the ingroup did not differ across conditions. Therefore, type of relation only had an impact on the perceived humanness of outgroup members but not that of ingroup members.

Table 3. Means (and standard deviations) of humanness in words attributed to Italians and Sequera as a function of type of relation.

	Humanness in words		
	Italians	Sequera	Outgroup dehumanization
CSR	7.28 (1.13) <sup>a,x</sup>	6.38 (0.99) <sup>ab,y</sup>	0.90 (1.16) <sup>a</sup>
MPR	7.64 (.94) <sup>a,x</sup>	7.00 (1.00) <sup>b,y</sup>	0.64 (1.00) <sup>a</sup>
NoR	7.34 (1.15) <sup>a,x</sup>	5.76 (1.44) <sup>a,y</sup>	1.58 (1.83) <sup>a</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Italians and Sequera within the same condition indicate significant differences in the humanization of Italians and Sequera.

In order to control for the effect of attitudes (both towards the ingroup:  $M = 8.06$ ;  $SD = 1.98$ , and the outgroup,  $M = 8.10$ ;  $SD = 1.95$ ) and identification with the ingroup ( $M = 4.44$ ;  $SD = 1.47$ ) in humanness attributions to groups, these variables were introduced separately as covariates<sup>5</sup> in the following analyses.

Regarding attitudes, a 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs. NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and attitude towards each group as covariates was conducted on the attribution of humanness to the groups. Significant interactions were found between group and attitude towards the ingroup,  $F(1, 65) = 7.26$ ,  $p = .009$ ,  $\eta_p^2 = .100$ , and between group and attitude towards the outgroup,  $F(1, 65) = 4.78$ ,  $p = .032$ ,  $\eta_p^2 = .069$ . No significant main effects of attitude towards the ingroup,  $F < 0.22$ , or attitude towards the outgroup,  $F(1, 65) = 1.85$ ,  $p = .179$ ,  $\eta_p^2 = .028$ , were found.

<sup>5</sup> All covariates were mean centered.

Most importantly, when controlling for attitudes, the interaction between group and type of relation remained marginally significant,  $F(2,65) = 2.56, p = .085, \eta^2 = .062$ .

Regarding identification with the ingroup, a 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and identification with the ingroup as a covariate was conducted on the attribution of humanness to the groups. No significant main effect,  $F < 0.11$ , and no significant interaction with group,  $F(1,66) = 2.24, p = .139, \eta_p^2 = .033$ , were found for identification with the group.

Controlling for identification with the ingroup rendered the interaction between group and type of relation non-significant,  $F(2,66) = 2.35, p = .104, \eta^2 = .042$ . However, the decrease in effect size was small ( $\eta^2 = .050$  to  $\eta^2 = .042$ ).

#### 4.2.2.2.2. *Human characteristics.*

Regarding human characteristics, two indices of humanness were obtained for the ingroup ( $M = 4.58; SD = 0.77$ ) and the outgroup ( $M = 4.36; SD = 0.84$ ).

A 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as within-subjects was conducted on the degree of humanness attributed to each group (see Table 4).

A marginally significant main effect of group was found,  $F(1, 68) = 3.40, p = .070, \eta_p^2 = .048$ , indicating a slightly stronger attribution of humanness to the ingroup than to the outgroup.

No significant main effect of type of relation,  $F(2, 68) = 1.42, p = .249, \eta_p^2 = .040$ , as well as no significant interaction between group and type of relation,  $F(2, 68) = 0.04, p = .965, \eta^2 = .001$ , were found. Planned contrasts testing the difference between the NoR condition and the other conditions were run for the dehumanization of outgroup members (also by calculating

the difference between groups: ingroup minus outgroup) and also separately for each group. No contrasts were significant ( $p$ 's > .135). As shown in table 4, simple mean comparisons (Bonferroni adjustment) also did not show any significant differences between groups across experimental conditions or between conditions for any of the groups.

*Table 4.* Means (and standard deviations) of human characteristics attributed to Italians and Sequera as a function of type of relation.

	Human characteristics		
	Italians	Sequera	Outgroup Dehumanization
CSR	4.62 (0.76) <sup>a,x</sup>	4.38 (0.80) <sup>a,x</sup>	0.24 (0.94) <sup>a</sup>
MPR	4.74 (0.66) <sup>a,x</sup>	4.49 (0.85) <sup>a,x</sup>	0.25 (0.89) <sup>a</sup>
NoR	4.39 (0.85) <sup>a,x</sup>	4.22 (0.88) <sup>a,x</sup>	0.18 (1.15) <sup>a</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Italians and Sequera within the same condition indicate significant differences in the humanization of Italians and Sequera.

Analyses were also run controlling for attitudes and identification on the attribution of human characteristics to groups.

Regarding attitudes, a 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and attitude towards each group as covariates was conducted on the attribution of human characteristics to groups. A marginally significant interaction was found between group and attitude towards the ingroup,  $F(1, 65) = 3.52$ ,  $p = .065$ ,  $\eta_p^2 = .051$ , but not with attitude towards the outgroup,  $F < 0.76$ . No significant main effects were found for attitude

towards the ingroup,  $F < 0.46$ , or for attitude towards the outgroup,  $F(1, 65) = 2.32, p = .132, \eta_p^2 = .034$ .

Importantly, when controlling for attitudes, the interaction between group and type of relation remained non-significant,  $F(2, 65) = 0.01, p = .993, \eta^2 = .000$ .

Analyses were also run entering identification with the ingroup as a covariate. Hence, a 2 (group: ingroup vs. outgroup) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as between-subjects factor, group as within-subjects and identification with the ingroup as a covariate was conducted on the attribution of human characteristics to groups. No significant main effect,  $F < 0.90$ , and no significant interaction,  $F(1, 66) = 2.33, p = .132, \eta_p^2 = .034$ , were found for identification.

More importantly, when controlling for identification with the ingroup, the interaction between group and type of relation remained non-significant,  $F(2, 66) = 0.24, p = .786, \eta^2 = .007$ .

#### ***4.2.2.3. Attitude towards the groups.***

We tested whether attitudes towards each group varied as a function of the relational manipulation. Therefore, a 2 (group: Italian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs. NoR) GLM with group as a within-subjects factor and type of relation as a between-subjects factor was conducted on attitudes towards the groups.

A significant main effect was found for type of relation,  $F(2, 67) = 4.10, p = .021, \eta_p^2 = .109$ . Table 5 shows that participants' attitudes towards both groups were more positive in both relational conditions than NoR.

Neither the main effect for the type of population,  $F < 0.24$ , nor the interaction between group and type of relation,  $F(2, 67) = 2.03, p = .140, \eta_p^2 = .057$ , were significant. Simple mean comparisons (Bonferroni adjustment) showed that participants' attitudes towards the outgroup



were more positive in CSR than in NoR. Regarding intergroup differences across conditions, no significant difference in attitudes was found.

*Table 5.* Means (and standard deviations) of attitude towards Italians and Sequera as a function of type of relation.

	Attitudes	
	Italians	Sequera
CSR	8.67 (1.74) <sup>a,x</sup>	9.00 (1.67) <sup>a,x</sup>
MPR	8.10 (2.02) <sup>a,x</sup>	7.91 (1.81) <sup>ab,x</sup>
NoR	7.56 (2.00) <sup>a,x</sup>	7.20 (2.04) <sup>b,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Italians and Sequera on the same condition indicate significant differences in attitudes towards Italians and Sequera.

#### ***4.2.2.4. Representation of the intergroup situation.***

We also tested if the representation of the intergroup situation depended on the type of relation between the groups. In order to do so, we conducted a 3 (representation: “One group” vs. “Two groups” vs. “Separate Individuals”) x 3 (type of relation: CSR vs. MPR vs. NoR) GLM with representation as a within-subjects factor and type of relation as a between-subjects factor on the level of agreement with the referred representations.

There was a main effect of the representation of the intergroup relation,  $F(1.79, 116.15) = 24.03, p < .001, \eta_p^2 = .270$ , but no significant main effect of type of relation was found,  $F(2, 65) = 2.25, p = .114, \eta_p^2 = .065$ .

More importantly, a significant interaction between representation and type of relation was found,  $F(3.57, 116.15) = 11.61, p < .001, \eta_p^2 = .263$  (see Table 6). As predicted, simple mean comparisons (Bonferroni adjustment) showed that in the CSR condition the “one group”

representation was stronger than in the MPR and NoR conditions. In turn, the “two groups” representation was stronger in the NoR than in CSR. Moreover, participants considered that in CSR the groups were represented more as “one group” than “separate individuals”; in MPR the groups were represented more as “two groups” than “one group” or “separate individuals”; and in NoR the groups were represented more as “two groups” than “one group” or “separate individuals” as well as more “separate individuals” than “one group”.

*Table 6.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	4.83 (2.04) <sup>b,x</sup>	3.71 (2.29) <sup>ax,y</sup>	2.71 (1.76) <sup>a,y</sup>
MPR	2.50 (1.70) <sup>a,y</sup>	4.90 (1.92) <sup>ab,x</sup>	2.35 (1.35) <sup>a,y</sup>
NoR	1.96 (1.43) <sup>a,y</sup>	5.96 (1.40) <sup>b,x</sup>	3.13 (1.73) <sup>a,z</sup>

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xyz</sup> Different superscripts between representations of the intergroup situation on the same condition indicate significant differences between representations.

Using regression analyses, we tested if the “one group” representation significantly predicted outgroup dehumanization, in terms of words as well as characteristics. The “one group” representation did not significantly predict outgroup dehumanization, neither in terms of words,  $\beta = -.04$ ,  $t(66) = -.28$ ,  $p = .777$ ,  $R^2 = .00$ , nor characteristics,  $\beta = .06$ ,  $t(66) = 0.46$ ,  $p = .644$ ,  $R^2 = .00$ .

We also examined whether CSR and MPR (dummy coded) predicted a “one group” representation. CSR significantly predicted a “one group” representation,  $\beta = .59$ ,  $t(66) = 5.94$ ,  $p < .001$ ,  $R^2 = .35$ , but MPR did not,  $\beta = -.19$ ,  $t(66) = -1.56$ ,  $p = .117$ ,  $R^2 = .04$ .

After this we tested if the relationship between CSR and outgroup dehumanization was mediated by the “one group” representation. The “one group” representation did not mediate the relationship between CSR and outgroup dehumanization in words,  $\beta = .08$ ,  $SE = 0.20$ , 95% CI [-0.31,0.49] or characteristics  $\beta = .11$ ,  $SE = 0.17$ , 95% CI [-0.18,0.51].<sup>6</sup> Therefore, the reduction of outgroup dehumanization in CSR did not occur through the “one group” representation.

#### ***4.2.2.5. Valence and collaboration.***

In order to test if the perceived valence of and collaboration in the relation depended on the type of relation the groups were involved in, we conducted two one-way GLMs on the mean valence and collaboration attributed to the relation between the local Italian and the Sequera populations entering type of relation as a between-subjects factor.

A main effect of type of relation was found for perceived valence of the relation,  $F(2, 66) = 39.59$ ,  $p < .001$ ,  $\eta_p^2 = .545$ . As seen in table 7, participants considered CSR as more positive than MPR and NoR, and MPR as more positive than NoR.

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<sup>6</sup> We tested the significance of indirect effects using bootstrapping procedures (Hayes, 2013). Unstandardized indirect effects were computed for each of 10,000 bootstrapped samples, and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles.

Table 7. Means (and standard deviations) of the perceived valence of the relation according to the type of relation.

	Valence
CSR	6.29 (0.91) <sup>a</sup>
MPR	5.45 (0.76) <sup>b</sup>
NoR	4.04 (0.98) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

A main effect of type of relation was also found for perceived collaboration in the relation,  $F(2, 67) = 69.05, p < .001, \eta_p^2 = .673$ . Table 8 shows that participants considered CSR as more collaborative than MPR and NoR, and MPR as more collaborative than NoR. Simple mean comparisons (see Table 8) show that the relation was perceived as more collaborative in the CSR than in the MPR and the NoR conditions. MPR was also perceived as more collaborative than NoR.

Table 8. Means (and standard deviations) of the perceived collaboration in the relation according to the type of relation.

	Collaboration
CSR	6.29 (0.91) <sup>a</sup>
MPR	5.52 (0.75) <sup>b</sup>
NoR	4.04 (0.20) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

#### 4.2.2.6. Identification with Italians.

In order to verify if identification with the Italian ingroup varied as a function of the manipulation, a one-way GLM was conducted on the mean identification with the ingroup entering type of relation as a between-subjects factor (Table 9). No significant main effect of type of relation was found,  $F(2, 67) = 1.50$ ,  $p = .230$ ,  $\eta_p^2 = .043$ . Simple mean comparisons (Bonferroni adjustment) showed no significant differences between conditions.

Table 9. Means (and standard deviations) of ingroup identification according to the type of relation.

	Ingroup Identification
CSR	4.17 (1.04) <sup>a</sup>
MPR	4.27 (1.82) <sup>a</sup>
NoR	4.84 (1.47) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

#### 4.2.3. Discussion

The outgroup was perceived as less human than the ingroup. Similarly to the results extensively found in the literature (for a review see Vaes et. al, 2012), participants attributed more humanness to the ingroup than to the outgroup.

More importantly, participating in a relation reduced outgroup dehumanization when compared to the absence of relation between ingroup and outgroup members. Moreover, both market pricing and communal sharing relations reduced outgroup dehumanization to the same extent. Although attributions of humanness to the outgroup were higher in market pricing than in communal sharing relations, both reduced dehumanization when compared to the absence

of relation between groups. This result supports our main hypothesis that being a partner in a relation decreases outgroup dehumanization when compared to not being a partner in a relation.

Admittedly, this result was only obtained on the word attribution measure. On the characteristics measure, participants attributed humanness to the ingroup to a greater extent than to the outgroup and this effect was not moderated by the relational manipulation. As the pattern of means was not in contradiction to our main hypothesis we abstain here from interpreting this lack of an effect, which might be due to the ambiguous nature of the items used (more than one affirmation/idea present in the same sentence).

Our most important finding in this study consists in the ability of market pricing relations to reduce outgroup dehumanization. These results go beyond those obtained in previous research (e.g.: Gaunt, 2009; Capozza et al., 2012) as we show that relations can reduce outgroup dehumanization without fostering recategorization of groups in a more inclusive category. Although the CS relation reduced outgroup dehumanization through the “one group” representation, the MP relation did not elicit the “one group” representation and was still able to reduce outgroup dehumanization.

Whereas the communal sharing relation was considered positive, collaborative and eliciting a common uniting category to a greater extent than market pricing relations, both of these relations reduced outgroup dehumanization. These results indicate that neither intergroup attitudes, nor valence of the relation, nor degree of collaboration as such, nor recategorization as a common ingroup can explain the reduction of dehumanization by participation in the MP relation.

Insofar, we have obtained evidence that the reduction of outgroup dehumanization in the present study is less a question of blurring boundaries between groups than it is about constituting social relations between the groups involved. One important question, however,

that cannot yet be answered by the results of this study concerns the need of the involvement of the ingroup in the relation for it to reduce outgroup dehumanization. Is the reduction of outgroup dehumanization also to be expected in relations where the ingroup is not involved? In other words, would an outgroup also be humanized if it is seen as participating in relations with any other group or only when it is seen as being in a relation with one's own ingroup? The answer to this question would have important implications to the explanation and even conceptualization of humanization and dehumanization of groups. If participation in any relation, independent of whether the ingroup (or the self) is involved or not, can lead to humanization of the outgroup, humanness would have to be considered to be part of a rather uninterested interpretation of positional group properties within the social world. If, however, involvement of the ingroup in the relation is necessary for the humanization of an outgroup, humanness must be considered as a principle that orders the world according to relational aspects of the self: Human is who is (potentially) in a social relation with the self.

Study two addresses this question.

### **4.3. Study 2**

Study 1 has shown that participation in relations in which the ingroup was involved reduced outgroup dehumanization. The purpose of Study 2 was to understand if, when the ingroup was not involved, participation in a relation would reduce dehumanization of the groups involved when compared to no participation in a relation. Do intergroup relations in which the ingroup is not involved also humanize the groups involved when compared to no relation?

We hypothesize that only relations in which the ingroup is involved humanize members of the groups involved in such relations. According to SIT (Tajfel & Turner, 1979) and also SCT (Turner, Hogg, Oakes, Reicher & Wetherell, 1987), the self and the social world are never

really independent of each other when they develop (e.g. Hogg & Abrams, 1988; Abrams & Hogg, 2004). Therefore, when the ingroup is not involved in the relation, no relational motivation is present. The relation will likely be perceived as irrelevant to ingroup members, therefore not affecting the perceived humanness of members of the groups involved.

### **4.3.1. Method**

#### ***4.3.1.1. Participants and design.***

62 participants, recruited in Italy via email and social media, were randomly assigned to a (3 type of relation: communal sharing vs. market pricing vs. no relation) between-subjects design. All participants were Italian except one, who therefore was excluded from data analysis. Therefore, 61 participants (31 females, mean age = 27.18,  $SD = 8.92$ ) entered the analysis.

#### ***4.3.1.2. Procedure, materials and measures.***

Like Study 1, this study was conducted online using Survey Monkey software and was justified by a cover story stating that the survey intended to understand the effectiveness of the scientific divulgation process in the media.

The manipulation texts were identical to those used in Study 1 except that the articles described the Sequera population as having travelled to a region in northern Tasmania (and not North of Italy) in the 1800's and establishing either a communal sharing or market pricing relation or no relation with the local Tasmanian population.

The measures used were also the same as in Study 1, but concerning to the two populations mentioned in the article, the Sequera and the Tasmanian. The measure of identification with



Italians was kept, making it possible to examine whether ingroup identification would have an effect on the perceived humanness of the two groups.

### 4.3.2. Results

#### 4.3.2.1. Manipulation check.

As in the previous study, three indices were computed by adding up the number of sentences that corresponded to each type of relation between the two groups or to the absence of a relation (Table 10).

A 3 (type of sentence: CS vs. MP vs. NR) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and type of sentence as a within-subjects factor was conducted.

Type of relation,  $F(2,58) = 11.48, p < .001, \eta_p^2 = .284$ , and type of sentence,  $F(1.40, 80.88) = 7.39, p = .004, \eta_p^2 = .113$ , had an effect on the extent to which participants agreed that the sentences described the relation.

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(2.79,80.88) = 187.31, p < .001, \eta_p^2 = .866$ . Planned contrasts showed that participants chose CS sentences to a greater extent in the CSR condition than in other conditions,  $t(58) = 17.47, p < .001$ , MP sentences to a greater extent in the MPR condition than in other conditions,  $t(58) = 17.17, p < .001$ , and NR sentences to a greater extent in the NoR condition than in other conditions,  $t(58) = 30.72, p < .001$ . Simple mean comparisons (Bonferroni adjustment), shown in Table 10, produced similar results as those found in planned contrasts.

Table 10. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation as a function of type of relation.

	Type of sentence		
	CS	MP	NR
CSR	2.61 (0.99) <sup>a,x</sup>	0.26 (0.69) <sup>b,y</sup>	0.00 (0.00) <sup>b,y</sup>
MPR	0.06 (0.24) <sup>b,y</sup>	2.78 (0.81) <sup>a,x</sup>	0.00 (0.00) <sup>b,y</sup>
NoR	0.00 (0.00) <sup>b,y</sup>	0.00 (0.00) <sup>b,y</sup>	1.90 (0.31) <sup>a,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xy</sup> Different superscripts between measures on the same condition indicate significant differences on the extent to which participants considered that the sentences described the relation.

#### 4.3.2.2. Attribution of humanness to groups.

##### 4.3.2.2.1. Human and animal-related words.

Regarding human and animal-related words, we first computed indices for human and animal related words chosen for each group (see Table 11). A composite measure of humanness was then created by calculating the difference between the total number of animal words participants could attribute to each group (10) and the actual number of words attributed (ten minus number of attributed animal words). As described in study 1, we then averaged this value with the number of human words attributed to each group, hence composing a measure of humanness in words for the Tasmanian ( $M = 6.37$ ;  $SD = 1.27$ ) and the Sequera ( $M = 5.98$ ;  $SD = 1.15$ ).

Table 11. Means (and standard deviations) of human and animal-related words attributed to the Sequera and Tasmanian populations.

	Sequera	Tasmanian
Human-related	5.08 (1.15)	5.59 (1.37)
Animal-related	3.13 (1.20)	2.85 (1.26)

A 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as a within-subjects was conducted on the attribution of humanness to the Tasmanian and the Sequera populations (see Table 12).

A significant main effect of group was found,  $F(1, 58) = 6.98, p = .011, \eta_p^2 = .107$ . Participants attributed more humanness to the Tasmanian than to the Sequera.

No significant main effect of type of relation,  $F < 0.73$ , and no significant interaction between group and type of relation,  $F(2, 58) = 0.90, p = .414, \eta^2 = .027$ , were found. To test whether type of relation moderated the attribution of humanness to both groups, planned contrasts were run on the average of these attributions to the Sequera and the Tasmanian. All contrasts were non-significant ( $p$ 's  $> .233$ ). Although the pattern of means presented in table 12 shows that the average humanness attribution to the groups is lower in the absence of a relation than in the relational conditions, they do not significantly differ. Type of relation did not moderate the attribution of humanness to the groups. Simple mean comparisons (Bonferroni adjustment) showed that the humanness attributions to the Tasmanian were higher than to the Sequera in the absence of a relation. No other differences were significant.

Table 12. Means (and standard deviations) of humanness in words attributed to the Sequera and Tasmanian groups as a function of type of relation.

	Humanness in words		
	Sequera	Tasmanian	Average
CSR	6.13 (1.14) <sup>ax</sup>	6.41 (1.20) <sup>ax</sup>	6.27 (1.05) <sup>a</sup>
MPR	6.19 (0.75) <sup>ax</sup>	6.42 (0.97) <sup>ax</sup>	6.31 (0.62) <sup>a</sup>
NoR	5.60 (1.39) <sup>ax</sup>	6.28 (1.59) <sup>ay</sup>	5.94 (1.36) <sup>a</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Sequera and Tasmanians within the same condition indicate significant differences in humanness attributions to the Sequera and Tasmanians.

As in Study 1, in order to control for the effect of attitudes (towards the Sequera, ( $M = 8.02$ ;  $SD = 1.87$ , and the Tasmanian,  $M = 8.00$ ;  $SD = 1.90$ ) and identification with the ingroup ( $M = 4.49$ ;  $SD = 1.42$ ,  $\alpha = .90$ ) in the perceived humanness of the Sequera and Tasmanians, we performed the following analyses taking attitudes and identification as covariates.

Regarding attitudes, a 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and attitudes towards the groups as covariates, was conducted on the humanness attributed to the groups. A significant interaction was found between group and attitude towards the Tasmanian,  $F(1, 54) = 4.15$ ,  $p = .047$ ,  $\eta_p^2 = .071$ , and a marginal interaction was found between group and attitude towards the Sequera,  $F(1, 54) = 3.43$ ,  $p = .070$ ,  $\eta_p^2 = .060$ . No significant main effects were found for attitude towards the Tasmanian,  $F(1, 54) = 1.30$ ,  $p = .260$ ,  $\eta_p^2 = .023$ , or for attitude towards the Sequera,  $F < 0.50$ .

More importantly, when controlling for attitudes, the interaction between group and type of relation remained non-significant,  $F(2, 54) = 1.53$ ,  $p = .226$ ,  $\eta^2 = .047$ .

Regarding identification with the ingroup, a 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and identification with the ingroup as a covariate, was conducted on the humanness attributed to the groups. No significant interaction was found between identification and group,  $F < 0.20$ , and no significant main effect of identification was found,  $F < 0.83$ .

More importantly, when controlling for identification, the interaction between group and type of relation remained non-significant,  $F(2, 57) = 0.86, p = .429, \eta^2 = .029$ .

#### *4.3.2.2.2 Human characteristics.*

Two indices of human characteristics were obtained, one for the Tasmanian ( $M = 4.30; SD = 0.93, \alpha = .69$ ) and one for the Sequera ( $M = 4.25; SD = 0.91, \alpha = .69$ ).

A 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as within-subjects, was conducted on the average of the attribution of human characteristics to both groups.

A significant main effect of type of relation was found,  $F(2, 58) = 9.37, p < .001, \eta_p^2 = .244$ . Simple mean comparisons (Bonferroni adjustment) in Table 13 show that groups were attributed more human characteristics in CSR than in MPR and NoR. No significant effect of group was found,  $F < 0.33$ .

More importantly, a significant interaction between group and type of relation was found,  $F(2, 58) = 6.53, p = .003, \eta^2 = .183$ . Planned contrasts analyses were conducted on human characteristics attributed to both groups across conditions.

As in study 1, we first tested whether the attribution of human characteristics was lower in the NoR condition than in the CSR and MPR conditions taken together. This contrast was significant,  $t(58) = -2.69, p = .009$ . Participants attributed less human characteristics to the groups in the NoR than in the relational conditions taken together. We then analyzed the

residual contrast testing whether attributions of human characteristics differed between the MPR and the CSR. Unexpectedly, this contrast was significant,  $t(58) = -3.21, p = .002$ . Both groups were attributed more human characteristics in CSR than MPR. We also tested if the attribution of human characteristics differed between CSR and the NoR as well as between MPR and the NoR. The former contrast was significant,  $t(58) = -4.05, p < .001$  but the latter was not,  $t(58) = -0.71, p = .481$ . Simple mean comparisons (Bonferroni adjustment) showed that participants attributed more human characteristics to the Tasmanian in CSR than in MPR and slightly more in CSR than in NoR. Participants also attributed more human characteristics to the Sequera in CSR than NoR. Regarding intergroup differences, the Tasmanian were attributed more human characteristics than the Sequera in the absence of a relation. No other difference was significant.

*Table 13.* Means (and standard deviations) of human characteristics attributed to the Sequera and Tasmanian groups as a function of type of relation.

	Human characteristics		
	Sequera	Tasmanian	Average
CSR	4.85 (0.80) <sup>a,x</sup>	4.75 (0.66) <sup>a,x</sup>	4.80 (0.70) <sup>a</sup>
MPR	4.17 (0.75) <sup>ab,x</sup>	3.93 (0.88) <sup>b,x</sup>	4.05 (0.73) <sup>b</sup>
NoR	3.63 (0.73) <sup>b,x</sup>	4.13 (1.06) <sup>ab,y</sup>	3.88 (0.81) <sup>b</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Sequera and Tasmanians on within the same condition indicate significant differences in humanness attributions to the Sequera and Tasmanians.

Analyses were then run controlling for attitudes towards the Tasmanian and towards the Sequera. A 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR)

mixed GLM with type of relation as a between-subjects factor, group as within-subjects factor and attitudes as covariates, was conducted on the attribution of human characteristics to each group. No significant interactions,  $F$ 's  $< 1.61$ , and no significant main effect of attitude towards the Tasmanian,  $F < 0.36$ , or the Sequera,  $F(1, 54) = 2.74, p = .104, \eta_p^2 = .048$ , were found.

More importantly, when controlling for attitudes, the interaction between group and type of relation remained significant,  $F(2, 54) = 12.86, p < .001, \eta^2 = .275$ .

Analyses were also run entering identification with Italians as a covariate. Hence, a 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as between-subjects factor, group as within-subjects and identification with Italians as a covariate, was conducted on the attribution of human characteristics to the groups. No significant interaction between identification and group,  $F(1, 57) = 2.32, p = .133, \eta_p^2 = .039$ , as well as no significant main effect of identification,  $F(1, 57) = 1.33, p = .253, \eta_p^2 = .023$  were found.

More importantly, when controlling for identification with Italians, the interaction between group and type of relation remained significant,  $F(2, 57) = 6.98, p = .002, \eta^2 = .184$ .

#### ***4.3.2.3. Attitude towards the groups.***

A 2 (group: Tasmanian vs. Sequera) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as a within-subjects factor was conducted on attitudes towards the groups.

A significant main effect was found for the type of relation,  $F(2, 56) = 16.69, p < .001, \eta_p^2 = .373$ . No significant main effect of group,  $F < 0.65$ , was found.

More importantly, a significant interaction between group and type of relation was also found,  $F(2, 56) = 2.25, p = .115, \eta_p^2 = .074$ . Simple mean comparisons (Bonferroni

adjustment) in table 14 showed that in MPR, attitudes towards the Sequera were slightly more positive than towards the Tasmanian. Attitudes towards the Tasmanian and the Sequera were more positive in CSR than MPR and NoR.

*Table 14.* Means (and standard deviations) of attitude towards the Sequera and the Tasmanian as a function of type of relation.

	Attitude	
	Tasmanians	Sequera
CSR	9.55 (1.01) <sup>a,x</sup>	9.41 (1.05) <sup>a,x</sup>
MPR	7.22 (1.31) <sup>b,x</sup>	7.50 (1.54) <sup>b,x</sup>
NoR	6.95 (2.04) <sup>b,x</sup>	7.00 (2.03) <sup>b,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Sequera and Tasmanians within the same condition indicate significant differences in attitudes towards the Tasmanians and the Sequera.

#### ***4.3.2.4. Representation of the intergroup situation.***

A 3 (representation: “One group” vs. “Two groups” vs. “Separate Individuals”) x 3 (type of relation: CSR vs. MPR vs. NoR) GLM with representation and type of relation as between-subjects factors was conducted.

A significant main effect of representation was found,  $F(1.81, 104.88) = 24.06, p < .001, \eta_p^2 = .293$ . No significant main effect of type of relation were found,  $F(2, 58) = 1.76, p = .181, \eta_p^2 = .057$  were found.



More importantly, a significant interaction between representation and type of relation was found,  $F(3.62, 104.88) = 32.55, p < .001, \eta_p^2 = .529$  (see Table 15). As predicted, simple mean comparisons showed that in the CSR condition the “one group” representation was stronger than in the MPR and NoR conditions. The “two groups” representation was also weaker in CSR than in MPR and NoR. Moreover, participants in the CSR condition represented the situation as “one group” to a greater extent than as “two groups” or “separate individuals”; in the MPR condition, as “two groups” to a greater extent than as “one group” or “separate individuals”; and in the NoR condition, as “two groups” to a greater extent than “one group” or “separate individuals”.

*Table 15.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	5.70 (1.74) <sup>a,x</sup>	2.04 (1.72) <sup>a,y</sup>	2.17 (1.56) <sup>a,y</sup>
MPR	2.83 (1.76) <sup>b,y</sup>	5.78 (1.26) <sup>b,x</sup>	2.72 (1.81) <sup>a,y</sup>
NoR	2.10 (1.48) <sup>b,y</sup>	6.05 (1.28) <sup>b,x</sup>	2.60 (1.64) <sup>a,y</sup>

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between representations within the same condition indicate significant differences between representations.

In regression analyses, we tested if the “one group” representation predicted attributions of humanness to each group.

Regarding the attribution of humanness in words, the “one group” representation did not significantly predict humanness attributions to the Sequera,  $\beta = .20$ ,  $t(58) = 1.57$ ,  $p = .122$ ,  $R^2 = .04$ , or to the Tasmanian,  $\beta = .09$ ,  $t(58) = 0.71$ ,  $p = .484$ ,  $R^2 = .08$ .

Concerning human characteristics, the “one group” representation significantly predicted attribution of humanness to the Sequera,  $\beta = .53$ ,  $t(58) = 4.70$ ,  $p < .001$ , and to the Tasmanian,  $\beta = .35$ ,  $t(58) = 2.83$ ,  $p = .006$  (respectively,  $R^2 = .28$  and  $R^2 = .12$ ).

After that we tested if each relational condition predicted a “one group” representation. As in Study 1, CSR significantly predicted a “one group” representation,  $\beta = .66$ ,  $t(58) = 6.61$ ,  $p < .001$ ,  $R^2 = .43$ , but MPR did not,  $\beta = -.16$ ,  $t(58) = -1.21$ ,  $p = .231$ ,  $R^2 = .04$ .

We then tested if the relationship between CSR and humanness attributions to each group was mediated by a “one group” representation. There was only a significant positive indirect effect of CSR on the attribution of human characteristics to the Sequera through a “one group” representation,  $\beta = .39$ ,  $SE = 0.18$ , 95% CI [0.08, 0.78]. No other indirect effect was significant.

#### ***4.3.2.5. Valence and collaboration.***

Two one-way GLMs were conducted on the mean valence and collaboration attributed to the relation between the Tasmanian and the Sequera populations entering type of relation as a between-subjects factor.

A main effect of type of relation was found for perceived valence of the relation,  $F(2, 58) = 62.56$ ,  $p < .001$ ,  $\eta_p^2 = .683$ . As shown in table 16, CSR was perceived as more positive than MPR and NoR. MPR was also perceived as more positive than NoR.

Table 16. Means (and standard deviations) of the perceived valence of the relation according to the type of relation.

	Valence
CSR	6.61 (0.50) <sup>a</sup>
MPR	5.33 (0.97) <sup>b</sup>
NoR	4.10 (0.72) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .001$ , two-tailed).

A main effect of type of relation was also found for perceived collaboration in the relation,  $F(2, 57) = 81.86, p < .001, \eta_p^2 = .742$ . As seen in table 17, CSR was perceived as more collaborative than MPR and NoR. MPR was also perceived as more collaborative than NoR.

Table 17. Means (and standard deviations) of the perceived collaboration of the relation according to the type of relation.

	Collaboration
CSR	6.57 (0.59) <sup>a</sup>
MPR	5.39 (0.92) <sup>b</sup>
NoR	4.05 (0.23) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .001$ , two-tailed).

#### 4.3.2.6. Identification with the ingroup.

In order to verify of identification with the ingroup varied as a function of the manipulation, a one-way GLMs was conducted on the mean identification with the ingroup entering type of relation as a between-subjects factor (see table 18). No significant main effect of type of relation was found,  $F(2, 58) = 1.04, p = .359, \eta_p^2 = .035$ .

Table 18. Means (and standard deviations) of ingroup identification according to the type of relation.

	Ingroup Identification
CSR	6.29 (0.91) <sup>a</sup>
MPR	5.45 (0.76) <sup>a</sup>
NoR	4.04 (0.98) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

#### 4.3.3. Discussion

The two main dependent measures in this study produced inconsistent results.

As predicted, participating in a relation did not moderate attributions of humanness in words. However, the attribution of human characteristics to groups depended on the type of relation in which the two groups were involved, even if the ingroup did not take part in such relations. Moreover, attributions of human characteristics to each group differed across conditions. Whereas the Sequera was attributed less human characteristics in the absence of a relation than in both relational conditions (taken together and also separately), the Tasmanian was attributed more human characteristics when they were involved in a communal relation

than in the other two conditions. Because the Sequera were a fictional population, one can assume that participants had less information about this group than regarding the Tasmanian. Hence, participants may have relied mostly on relational information to form an impression of the Sequera. The same cannot be assumed about the Tasmanian and measures to assess previous knowledge of this population were not included in this study.

The “one group” representation only mediated the humanization of the Sequera, but not the Tasmanian in CSR. This result for the Sequera would go in line with previous research (e.g.: Gaunt, 2009) on the role of a superordinate category in the reduction of outgroup dehumanization. However, to discuss these results as a reduction of outgroup dehumanization one must have an ingroup of reference. In this study, ratings of humanness attributions to ingroup members were not included. Hence, we do not know if outgroup dehumanization actually occurred. However, considering only humanness attributions to the two groups, communal relations were able to increase such attributions to both groups when compared to market pricing, which did not elicit a recategorization of the groups into a common uniting category. The interpretation of this result is problematic because even if participants were to perceive the other two groups as part of one single category, this would not be a category of which the ingroup would be a part of. Humanization of these groups is likely occurring through another process. Unfortunately, in this study, we lacked the measures that could provide an answer to what process is responsible for the humanization of the Sequera in CSR through the “one group” representation. One possibility would be that participants took the perspective of one group to a greater extent than the other in CSR and that this group may have become somewhat of an ingroup. However, because we did not measure identification with or perspective taking of the Tasmanian or the Sequera, this is but an exercise of speculation. Moreover, given that the ingroup was never mentioned in the survey, it is not possible to address the relative humanness participants attributed to each of the groups in a

relation. We do not know if when thinking about the two groups that were involved in a relation and rating their humanness, participants were only comparing them to each other or also with their ingroup.

Additionally, in study 1, we had already identified the attribution of human characteristics as a possibly unreliable measure. However, in order to make the results comparable, the same measure was introduced in this study and will be so again in study 3.

Given the methodological problems identified in this study, it did not provide an answer to the specific research question we intended it to tackle. Insofar the evidence obtained seems to point to the involvement of the ingroup in the intergroup relation as a necessary condition for the humanization of an outgroup. Study 3 aims to constitute a proper test of whether intergroup relations that do not involve ingroup members also reduce dehumanization of the groups involved when compared to the absence of relation.

#### **4.4. Study 3**

The purpose of study 3 was not only to clarify the findings of study 2, but also to assess the degree of humanness attributed to the ingroup when it did not participate in a relation and compare it to that of the other two groups involved in a relation.

This study includes humanness ratings to the ingroup, making it possible to assess the relative attribution of humanness to the ingroup and outgroups. We expect participants to attribute more humanness to the ingroup than to both outgroups.

On one hand, because the ingroup is not involved, outgroup dehumanization may not differ across experimental conditions (as found in Study 2 for the word association measure). If so, it may be because relations in which the ingroup is not involved may be perceived as not relevant to ingroup members. On the other hand, participating in relations may indeed humanize the groups involved in the relation. If so, groups are expected to be more

humanized in the relational conditions than in the absence of a relation. Admittedly, this pattern was only found for the Sequera and not the Tasmanian population in the previous study. In this study, the same groups were used and the same relational conditions operationalized. Additionally, to understand possible differences in the humanization of outgroups, identification with the Sequera and Tasmanian were also measured.

#### **4.4.1. Method**

##### ***4.4.1.1. Participants and design.***

100 participants were randomly assigned to a (3 type of relation: communal sharing vs. market pricing vs. no relation) between-subjects design. From those, 19 did not respond to the main dependent variables and one was not of Italian nationality. Hence, 80 participants (59 females, mean age = 24.76,  $SD = 6.68$ ) entered the analysis.

##### **4.4.1.2. Procedure, materials and measures.**

This study was also conducted online using Survey Monkey software.

Participants were presented with an article describing the Sequera population as having travelled to a region in northern Tasmania in the 1800s and establishing either a communal (CSR condition) or economic exchange (MPR condition) relation or no relation (NoR condition) with the local Tasmanian population.

The procedure and measures used were also the same as in studies 1 and 2. However, participants had to rate not only the two groups described in the article, Sequera and Tasmanian, but also a third group: Italians (ingroup). To keep the procedure comparable to that of study 1, the Sequera population was always rated first, and then the Italian group and the ratings regarding the Tasmanian population were completed at the end.

A single item measure of identification with the groups was added: “To what extent do you identify with the Italians/Sequera/Tasmanian?”

#### **4.4.2. Results**

##### ***4.4.2.1. Manipulation check.***

As in the previous study, three indices were computed by adding up the number of sentences that corresponded to each type of relation between the two groups or to the absence of a relation (Table 19).

A 3 (type of sentence: CS vs. MP vs. NR) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and type of sentence as a within-subjects factor was conducted.

Type of relation,  $F(2,77) = 14.41, p < .001, \eta_p^2 = .272$ , and type of sentence,  $F(1.68, 129.10) = 10.42, p < .001, \eta_p^2 = .119$ , had an effect on the extent to which participants agreed that the sentences described the relation.

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(3,35, 129,10) = 174.76, p < .001, \eta_p^2 = .819$ . Planned contrasts showed that participants chose CSR sentences to a greater extent in the CSR condition than in other conditions,  $t(77) = 16.01, p < .001$ , MPR sentences to a greater extent in the MPR condition than in other conditions,  $t(77) = 20.13, p < .001$ , and NoR sentences to a greater extent in the NoR condition than in other conditions,  $t(77) = 21.29, p < .001$ . Simple mean comparisons (Bonferroni adjustment) in table 19 show the same results as obtained in the planned contrasts.



Table 19. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation as a function of type of relation.

	Type of sentence		
	CS	MP	NoR
CSR	2.74 (1.21) <sup>a,x</sup>	0.30 (0.64) <sup>b,y</sup>	0.04 (0.21) <sup>b,y</sup>
MPR	0.04 (0.19) <sup>b,y</sup>	2.62 (0.86) <sup>a,x</sup>	0.00 (0.00) <sup>b,y</sup>
NoR	0.11 (0.57) <sup>b,y</sup>	0.00 (0.00) <sup>b,y</sup>	1.68 (0.55) <sup>a,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xy</sup> Different superscripts on the same condition indicate significant differences on the extent to which participants considered that each type of sentence described the relation.

#### 4.4.2.2. Outgroup dehumanization.

##### 4.4.2.2.1. Human and animal related words.

Regarding human and animal-related words, we first computed six indices, namely for human and animal related words chosen for each group (see Table 20). A composite measure of humanness was then created following the same procedure described in the previous two studies. From that, we obtained a composite a measure of humanness in words for the Sequera ( $M = 6.04$ ;  $SD = 1.50$ ), the Tasmanian ( $M = 6.01$ ;  $SD = 1.57$ ) and Italian ( $M = 7.39$ ;  $SD = 1.37$ ) groups.

Table 20. Means (and standard deviations) of human and animal-related words attributed to the Sequera, Italian and Tasmanian populations.

	Sequera	Italian	Tasmanian
Human-related	4.24 (2.45)	5.34 (2.90)	4.21 (2.55)
Animal-related	2.54 (1.88)	1.46 (1.42)	2.57 (1.92)

A 3 (group: Sequera vs. Tasmanian vs. Italians) x 3 (type of relation: CSR vs. MPR vs. NoR) GLM with type of relation as a between-subjects factor and group as a within-subjects factor was run on the humanness in words attributed to the groups (see Table 21).

A significant main effect was found for group,  $F(1.56, 120.29) = 29.99, p < .001, \eta_p^2 = .280$ . Participants significantly attributed humanness to a greater extent to the ingroup than to the Sequera and the Tasmanian (both  $p$ 's  $< .001$ ). No other difference was significant ( $p = 1$ ).

No significant main effect was found for type of relation,  $F < 0.37$ .

More importantly, no significant interaction between the group and type of relation was found,  $F(3.12, 120.29) = 1.14, p = .337, \eta^2 = .021$ . Although the interaction was not significant, to verify if the dehumanization (difference between Italians and both outgroups taken together) of outgroup members differed across conditions, we ran planned contrasts as in the previous studies.

We started by testing if the dehumanization of outgroups was higher in the NoR than in both relational conditions taken together. This contrast was not significant,  $t(75) = -0.67, p = .506$ . The residual contrast,  $t(75) = 0.72, p = .475$ , as well as the contrasts concerning the difference between CSR and NoR,  $t(75) = -0.26, p = .841$ , and MPR and NoR,  $t(75) = -0.97, p = .335$ , were all non-significant.

Because we were also interested in assessing whether the attribution of humanness to groups varied across conditions, we ran planned contrasts separately for groups as in the previous studies.

We first tested whether the attribution of humanness to each group was lower in the NoR than in both relational conditions taken together. Contrasts concerning the Sequera,  $t(75) = -0.29$ ,  $p = .773$  and the Italian,  $t(75) = -0.13$ ,  $p = .900$ , were non-significant. However, at a marginally significant level, humanness attributed to the Tasmanian group was unexpectedly higher in NoR than in both relational conditions taken together,  $t(75) = 1.71$ ,  $p = .091$ . We then tested the residual contrast. All three were non-significant ( $p$ 's  $> .468$ ). We also tested if the humanness attributions in CSR and MPR were higher than in the NoR. The contrasts concerning the difference between CSR and NoR were all non-significant, ( $p$ 's  $> .261$ ). Regarding the difference between MPR and NoR, contrasts concerning the Sequera,  $t(75) = -0.60$ ,  $p = .549$ , and the Italian,  $t(75) = 0.02$ ,  $p = .981$ , were non-significant. However, at a marginally significant level, humanness attributed to the Tasmanian group was higher in NoR than in MPR,  $t(75) = 1.84$ ,  $p = .070$ . Simple mean comparisons (Bonferroni adjustment) showed that in CSR and MPR, participants attributed more humanness to Italians than to the Sequera and the Tasmanian. No difference was found between the Tasmanian and the Sequera. In the absence of a relation, participants attributed more humanness to Italians than to the Sequera and slightly more humanness to the Italians than to the Tasmanians. Moreover, the Tasmanian were attributed more humanness in MPR than NoR.

Table 21. Means (and standard deviations) of humanness (words) attributed to the Sequera, Italian and Tasmanian populations as a function of type of relation.

	Humanness in words			
	Sequera	Tasmanian	Italian	Outgroup dehumanization
CSR	6.24 (1.44) <sup>a,y</sup>	5.94 (1.46) <sup>ab,y</sup>	7.35 (1.72) <sup>a,x</sup>	1.26 (2.27) <sup>a</sup>
MPR	5.93 (1.78) <sup>a,y</sup>	5.67 (1.74) <sup>a,y</sup>	7.45 (1.35) <sup>a,x</sup>	1.65 (2.11) <sup>a</sup>
NoR	5.98 (1.26) <sup>a,y</sup>	6.43 (1.41) <sup>bx,y</sup>	7.36 (1.08) <sup>a,x</sup>	1.15 (1.32) <sup>a</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Sequera, Tasmanians and Italians on the same condition indicate significant differences in humanness attributions to the Sequera, Tasmanians and Italians.

Analyses were run entering attitude towards the Sequera ( $M = 8.27$ ;  $SD = 1.73$ ), the Tasmanian ( $M = 7.84$ ;  $SD = 1.64$ ) and the Italians ( $M = 7.09$ ;  $SD = 2.05$ ) as covariates. Hence, a 3 (group: Sequera vs. Tasmanian vs. Italians) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects and attitudes towards each group as covariates, was conducted on the attribution of humanness in words to the groups. No significant main effects,  $F$ 's  $< 0.88$ , and no significant interactions,  $F$ 's  $< 0.61$ , were found.

More importantly, when controlling for attitudes towards the groups, the interaction between group and type of relation remained non-significant,  $F(3.07, 104.47) = 0.87$ ,  $p = .459$ ,  $\eta^2 = .023$ .

Analyses were run entering identification with the Sequera ( $M = 3.03$ ;  $SD = 1.73$ ), the Tasmanian ( $M = 2.94$ ;  $SD = 1.70$ ) and the Italians ( $M = 4.49$ ;  $SD = 1.71$ ) as covariates. A 3 (group: Sequera vs. Tasmanian vs. Italians) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as between subject factor, group as within-subjects and

identification with the groups as covariates was conducted on the attribution of humanness in words to the groups. A significant interaction between group and identification with the ingroup was found,  $F(1.57, 109.70) = 4.04, p = .029, \eta_p^2 = .055$ . No other effects were significant,  $F$ 's  $< 1.24$ .

As with attitudes, when controlling for identification with the groups, the interaction also remained non-significant,  $F(3.13, 109.70) = 1.51, p = .216, \eta^2 = .038$ .

#### 4.4.2.2.2. *Human characteristics.*

The value for internal consistency of the aggregated items concerning the Sequera and Tasmanian populations, as well as for Italians is considered as ranging from acceptable to poor ( $\alpha = .66, \alpha = .59$  and  $\alpha = .45$  respectively). Therefore, the following analyses should be interpreted with caution.

Regarding human characteristics, three indices of humanness were obtained for the Sequera ( $M = 4.17; SD = 0.87$ ), the Tasmanian ( $M = 4.21; SD = 0.77$ ) and the Italian ( $M = 4.38; SD = 0.81$ ) groups.

A 3 (type of relation: CSR vs. MPR vs. NoR) x 3 (group: Sequera vs. Tasmanian vs. Italians) was conducted with type of relation as a between-subjects factor and group as a within-subjects factor on the mean level of human characteristics attributed to the groups.

No significant main effect was found for group,  $F(1.49, 112.05) = 2.50, p = .101, \eta_p^2 = .032$ . No significant main effect of type of relation,  $F < 0.49$ , as well as no interaction between group and type of relation,  $F(2.99, 112.05) = 0.55, p = .650, \eta^2 = .015$ , were found. Although the interaction was not significant, we ran the same planned contrasts as in the previous studies to verify if outgroup dehumanization as well as the attribution of humanness to groups varied across conditions. No contrasts were significant, either for outgroup dehumanization,  $p$ 's  $> .415$ , humanness attributions to the ingroup,  $p$ 's  $> .843$ , to the Tasmanians,  $p$ 's  $> .370$  or

to the Sequera,  $p$ 's > .179. Additionally, simple mean comparisons (Bonferroni adjustment) in table 22 did not show any significant differences (all  $p$ 's > .139).

Table 22. Means (and standard deviations) of human characteristics attributed to the Sequera, Italian and Tasmanian populations as a function of type of relation.

	Human characteristics			
	Sequera	Tasmanian	Italian	Outgroup dehumanization
CSR	4.22 (0.99) <sup>a,x</sup>	4.34 (0.84) <sup>a,x</sup>	4.43 (0.76) <sup>a,x</sup>	0.08 (1.31) <sup>a</sup>
MPR	4.29 (0.78) <sup>a,x</sup>	4.18 (0.66) <sup>a,x</sup>	4.39 (0.72) <sup>a,x</sup>	0.09 (1.11) <sup>a</sup>
NoR	3.97 (0.88) <sup>a,x</sup>	4.15 (0.84) <sup>a,x</sup>	4.43 (0.92) <sup>a,x</sup>	0.37 (1.09) <sup>a</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Sequera, Tasmanians and Italians on the same condition indicate significant differences in humanness attributions to the Sequera, Tasmanians and Italians.

Analyses were run entering attitude towards the Sequera, the Tasmanian and the Italians as covariates. We conducted a 3 (group: Sequera vs. Tasmanian vs. Italians) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and attitudes towards each group as covariates, was conducted on the attribution of humanness to the groups. A significant interaction between group and attitude towards the ingroup was found,  $F(1.51, 102.54) = 11.19$ ,  $p < .001$ ,  $\eta_p^2 = .141$ . A significant main effect was also found for attitude towards the ingroup,  $F(1, 68) = 4.20$ ,  $p = .044$ ,  $\eta_p^2 = .058$ . No other effects were significant,  $F$ 's < 2.06.

More importantly, the interaction between group and type of relation remained non-significant,  $F(3.02, 102.54) = 0.35$ ,  $p = .791$ ,  $\eta^2 = .009$ .

Analyses were also run entering identification with the Sequera, the Tasmanian and the Italians as covariates. A 3 (group: Sequera vs. Tasmanian vs. Italians) x 3 (type of relation: CSR vs. MPR vs NoR) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects factor and identification with the groups as covariates, was conducted on the attribution of humanness to the groups. A significant interaction between group and identification with the ingroup was found,  $F(1.54, 107.61) = 9.60, p < .001, \eta_p^2 = .121$ . A significant main effect was also found for identification with the ingroup,  $F(1, 70) = 6.10, p = .016, \eta_p^2 = .080$ . No other effects were significant,  $F$ 's  $< 1.31$ .

More importantly, the interaction remained non-significant,  $F(3.08, 107.61) = 0.719, p = .546, \eta^2 = .017$ .

#### ***4.4.2.3. Attitude towards the groups.***

A 3 (type of relation: CSR vs. MPR vs. NoR) X 3 (group: Sequera vs. Tasmanian vs. Italians) mixed GLM with repeated measures on the last factor was conducted on attitudes towards the groups.

A significant main effect was found for group,  $F(1.20, 85.35) = 13.87, p < .001, \eta_p^2 = .164$ . Simple mean comparisons show that participants' attitude was more positive towards the Sequera population ( $M = 8.35; SD = 1.65$ ) than towards the Tasmanian population ( $M = 7.94; SD = 1.61, p = .001$ ) and Italians ( $M = 7.06; SD = 2.10, p < .001$ ). Participants' attitude towards the Tasmanian population was also more positive than towards Italians ( $p = .001$ ).

A marginally significant main effect of type of relation was also found,  $F(2,71) = 3.09, p = .052, \eta_p^2 = .080$ . Simple mean comparisons showed that attitudes towards the groups were slightly more positive in CSR than MPR (although only marginally,  $p = .078$ ). No difference was found between CSR and NoR, nor between MPR and NoR.

No significant interaction between group and type of relation was found,  $F(2.40, 85.35) = 1.53$ ,  $p = .220$ ,  $\eta_p^2 = .041$ . However, as shown in the simple mean comparisons (Bonferroni adjustment) in table 23, participants' attitude towards the Sequera was more positive in CSR than MPR and NoR and participants' attitude towards the Tasmanian was slightly more positive in CSR than MPR. Furthermore, in CSR participants' attitude towards the Sequera was more positive than towards Italians and the Tasmanian, and slightly more positive towards the Tasmanian than towards Italians. In the absence of a relation, participants' attitude towards the Sequera was more positive than towards the Italians.

*Table 23.* Means (and standard deviations) of attitude towards the Sequera and the Tasmanian as a function of type of relation.

	Attitude		
	Sequera	Tasmanians	Italians
CSR	9.24 (1.41) <sup>a,x</sup>	8.57 (1.40) <sup>a,y</sup>	7.24 (2.10) <sup>a,y</sup>
MPR	7.82 (1.42) <sup>b</sup>	7.46 (1.40) <sup>a</sup>	7.21 (1.89) <sup>a</sup>
NoR	8.30 (1.73) <sup>b,x</sup>	7.84 (1.93) <sup>ax,y</sup>	6.46 (2.30) <sup>a,y</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Sequera, Tasmanians and Italians on the same condition indicate significant differences in attitudes towards the Sequera, Tasmanians and Italians.

#### **4.4.2.4. Representation of the intergroup situation.**

A repeated measures analysis of variance was conducted on representation. The design was a 3 (type of relation: CSR vs. MPR vs. NoR) X 3 (representation: “one group” vs. “two groups” vs. “separate individuals”) with repeated measures on the last factor.



A main effect of representation was found,  $F(1.66, 117.71) = 26.26, p < .001, \eta_p^2 = .270$ , but type of relation did not yield a significant main effect,  $F < 0.59$ .

More importantly, a significant interaction between group and type of relation was found,  $F(3.32, 117.71) = 30.68, p < .001, \eta_p^2 = .464$  (see Table 24). As predicted, simple mean comparisons showed that in the CSR condition the “one group” representation was stronger than in the MPR and NoR conditions. The “two groups” representation was weaker in CSR than in MPR and NoR and slightly weaker in MPR than in NoR. Moreover, participants in the CSR condition considered the intergroup situation more as “one group” than “two groups” or “separate individuals”; in the MPR condition more as “two groups” than “one group” or “separate individuals”; and in the NoR condition as “two groups” more than as “one group” or “separate individuals”.

*Table 24.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	6.27 (1.08) <sup>a,x</sup>	2.32 (1.56) <sup>a,y</sup>	2.14 (1.32) <sup>a,y</sup>
MPR	3.15 (1.67) <sup>b,y</sup>	4.92 (1.90) <sup>b,x</sup>	2.50 (1.73) <sup>a,y</sup>
NoR	2.50 (2.08) <sup>b,y</sup>	6.08 (1.62) <sup>b,x</sup>	2.77 (1.75) <sup>a,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between representations on the same condition indicate significant differences in representations.

We also examined whether the “one group” representation significantly predicted humanness attributions to the groups involved in the relation. Perceiving the Sequera and the Tasmanian as one single group did not significantly predict humanness attributions to any of the groups, neither in terms of words ( $p$ 's > .212) or characteristics ( $p$ 's > .603).

Additionally we tested if the “one group” representation predicted the perceived humanness of the ingroup which was not involved in the relation. The “one group” representation did not predict humanness attributions the ingroup, neither in terms of words ( $p$  > .634) or characteristics ( $p$  > .677).

We tested if CSR and MPR (dummy coded) predicted a “one group” representation. CSR significantly predicted a “one group” representation,  $\beta = .69$ ,  $t(74) = 8.14$ ,  $p < .001$ ,  $R^2 = 0.47$ , but MPR did not,  $\beta = -0.21$ ,  $t(74) = -1.86$ ,  $p = .066$ ,  $R^2 = .45$ .

We then proceeded to test if a “one group” representation mediated the relationship between CSR and humanness attributions to groups. Indirect effects were not significant for humanness in words and human characteristics attributed to the Sequera, Tasmanians or Italians.

#### **4.4.2.5. Valence and collaboration.**

A two-way analysis of variance was conducted on the mean valence and collaboration attributed to the relation between the local Tasmanian and the Sequera populations using type of relation as a between subjects factor.

A main effect of type of relation was found for perceived valence of the relation,  $F(2,75) = 39.23$ ,  $p < .001$ ,  $\eta_p^2 = .511$ . Simple mean comparisons (Bonferroni correction) show that when the two populations engaged in a CSR the relation was perceived as significantly more positive than MPR or the absence of relation. MPR was also perceived as more positive than NoR.

Table 25. Means (and standard deviations) of the perceived valence of the relation according to the type of relation.

	Valence
CSR	6.36 (0.85) <sup>a</sup>
MPR	5.36 (0.99) <sup>b</sup>
NoR	4.00 (0.98) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .01$ , two-tailed).

A main effect of type of relation was found for perceived collaboration in the relation,  $F(2,74) = 60.89$ ,  $p < .001$ ,  $\eta_p^2 = .651$ . Simple mean comparisons showed that when the two populations engaged in CSR, the relation was perceived as significantly more collaborative than MPR or NoR. MPR was also perceived as more collaborative than NoR.

Table 26. Means (and standard deviations) of the perceived collaboration of the relation according to the type of relation.

	Collaboration
CSR	6.52 (0.87) <sup>a</sup>
MPR	5.75 (0.80) <sup>b</sup>
NoR	4.11 (0.57) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .01$ , two-tailed).

#### 4.4.2.6. Identification with the groups.

In order to verify if identification with the groups varied as a function of the manipulation, a repeated measures analysis of variance was conducted on the mean identification with each group. The design was a 3 (type of relation: CSR vs. MPR vs. NoR) X 3 (group: Sequera vs. Italians vs. Tasmanians) with repeated measures on the last factor.

Significant main effects of group,  $F(1.25, 91.60) = 24.47, p < .001, \eta_p^2 = .251$ , and of type of relation were found,  $F(2,73) = 7.71, p = .001, \eta_p^2 = .174$ .

A significant interaction was found between group and type of relation,  $F(2.51, 91.60) = 6.37, p = .001, \eta_p^2 = .149$  (see Table 27). Simple mean comparisons (Bonferroni adjustment) showed no significant differences in identification between the groups in the CSR condition. In MPR and NoR, participants identified with the ingroup to a greater extent than with the Sequera and the Tasmanian. Moreover, identification with the Tasmanian and the Sequera was higher in CSR than MPR and NoR.

Table 27. Means (and standard deviations) of the identification with groups according to the type of relation.

	Identification		
	Sequera	Tasmanian	Italian
CSR	4.09 (1.93) <sup>a,x</sup>	4.32 (1.86) <sup>a,x</sup>	4.19 (1.94) <sup>a,x</sup>
MPR	2.85 (1.49) <sup>b,y</sup>	2.70 (1.24) <sup>b,y</sup>	4.63 (1.45) <sup>a,x</sup>
NoR	2.33 (1.44) <sup>b,y</sup>	2.04 (1.26) <sup>b,y</sup>	4.52 (1.74) <sup>a,x</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Sequera, Tasmanians and Italians on the same condition indicate significant differences in identification with the Sequera, Tasmanians and Italians.

#### **4.4.3. Discussion**

As in Study 1, participants attributed humanness to a greater extent to the ingroup than to outgroups.

In study 1, however, participating in a relation humanized outgroup members when compared to the absence of a relation (both for communal sharing and market pricing relations). In this study, participating in a relation compared to not participating in a relation did not increase the outgroups' perceived humanness, neither in terms of words nor in terms of characteristics. Therefore, being a partner in a relation did not moderate outgroup dehumanization, when the ingroup was not involved. Intergroup relations in which the ingroup is not involved may be considered as not relevant to participants, because no relational motivations are present and therefore they do not influence their perception of the other groups' humanness, regardless of eliciting a more or less common uniting category, being positive and collaborative.

#### **4.5. General Discussion**

Participants in studies 1 and 3 attributed more humanness to the ingroup than the outgroup(s). These results also provide further evidence of outgroup dehumanization as a subtle and pervasive phenomenon occurring outside of contexts of hatred and violence.

Study 1 showed that when the outgroup was a partner in a relation (communal sharing or market pricing) with ingroup members, participants perceived the outgroup as more human than when there was no relation between groups. This provided support for the hypothesis that being a partner in a relation decreases outgroup dehumanization when compared to not being a partner in a relation.

In both studies, groups were more perceived as constituting one single group, and therefore being part of a more general and inclusive category, when they were partners in a communal

sharing relation than when they were involved in market pricing relation or had no relation between them.

Even though the market pricing relation predicted a common uniting category to a lesser extent than a communal sharing relation, in Study 1 both relations significantly reduced outgroup dehumanization when compared to no relation. Moreover, the one group representation did not predict the reduction of outgroup dehumanization. These findings go beyond those of previous studies (e.g.: Andrighetto et al., 2012) that focus on the role of recategorization into a common ingroup identity in the reduction of outgroup dehumanization. These studies suggest that relations that do not produce a one-group representation and that are seen as less positive and collaborative, such as market pricing relations, also increase the perceived humanness of outgroup members.

However, although these results suggest that being a partner in a relation with ingroup members suffices to increase the perceived humanness of the outgroup, not much is known about what aspects of a relation are involved in this process. As shown in studies 2 and 3, being a partner in a relation only reduces dehumanization of outgroup members when the ingroup is involved. Relations in which the ingroup is not involved may be considered as not relevant by participants and therefore do not influence their perception of other groups' humanness, even if eliciting a more or less common uniting category, being positive and collaborative. Moreover, participants were asked to attribute humanness to two outgroups with whom their ingroup was never involved in a relation with. Therefore, it is reasonable to assume that no relational motivations were present that could moderate participants' judgments of outgroups' humanness. Given that these two outgroups would have been disregarded as social interaction partners, the information that they were partners in a relation with one another, was not perceived as relevant to an extent that it would reduce dehumanization of its members.

Future research should explore what dimensions in a relation with the ingroup were responsible for a reduction in outgroup dehumanization.

If it is not specific to communal sharing relations, could it be specific to communal sharing and market pricing relations? Further studies should also focus on testing whether other types of relation such as equality matching and authority ranking reduce outgroup dehumanization. Regarding authority ranking relations, it would be of particular interest to explore whether status would play a role in outgroup dehumanization. Research has shown that both high and low status groups dehumanize and, because of that, status was said to be neither necessary nor sufficient for outgroup dehumanization (Leyens et al., 2009). However, other studies have shown that high status groups dehumanize more than low status groups (e.g.: Vaes & Paladino, 2010).

Although the measure concerning the attribution of human characteristics to ingroup and outgroup may contribute to broaden the range of measures used in the dehumanization literature, given the inconsistent results it provided, further studies should rely on other measures. Especially interesting are those that allow a distinction of which dimensions of humanness (human nature and human uniqueness) potentially increase when groups are involved in specific relations. This would shed more light on to what aspects of relations are responsible for reducing outgroup dehumanization. It would also strengthen the claim that the construct being measured is in fact humanness.

With the aim of testing the aspects involved in a relation that contribute to the reduction of outgroup dehumanization, in the next chapter we will describe three studies using different populations in which the moderating role of all relational models in intergroup dehumanization is tested.





## **CHAPTER 5- Intergroup Relations Moderate the Dimension of Humanness Denied to Groups**

What do two different relations, such as communal sharing and market pricing, have in common? The short answer is that these are two social relations, both involving coordination of two or more people thinking and acting in a complementary way. The more elaborated answer we are able to give now after the results of Study 1, is that, despite one being able to unite ingroup and outgroup members under a common and inclusive category more than the other, both relations can humanize members of outgroups involved in such relations with ingroup members.

The next question to ask now is: if two distinct social relations are able to reduce outgroup dehumanization to the same extent, can all coordinated social relations do the same?

In this chapter we intend to expand the claim that outgroup dehumanization is reduced by social relations in which ingroup and outgroup are involved. We will do so by testing all relational models proposed by RMT (Fiske, 1991, 1992). Thus, to the models used in the previous chapter we will add authority ranking (AR) and equality matching (EM).

In AR, people are involved in asymmetrical hierarchical relations. In these relations people are positioned in a linear hierarchy in which those with higher rank have more prestige and privileges than those with lower rank (Fiske, 1992, 2004a). In EM relations people are entitled to the same amount as others in the relation. In EM, people are concerned with keeping balance in their relations and therefore engage in concrete actions of “balancing, comparing or counting out items in one-for-one correspondence.” (Fiske, 1992, p. 691).

According to RMT, being a partner in a relation, in which two or more people are either seen as interchangeable and undifferentiated (CS); as distinct social units engaged in operations to restore balance in their interactions (EM); as assuming different positions in a

linear social hierarchy (AR); or as being guided by contextually meaningful ratios and proportionality (MP) should always require perceiving the other as a meaningful interaction partner to whom specific relational concerns are activated, as opposed to “null” interactions. In the latter, people are disregarded as potential interaction partners. Hence, all relational motivations are absent, and others are likened to objects or obstacles.

Haslam and colleagues (2005) proposed two different senses of humanness: Human uniqueness (HU) and Human nature (HN). The first corresponds to those characteristics that distinguish humans from other animals. The latter pertains to characteristics that are seen as fundamentally human, representing the core of the concept of humanness. These two dimensions represent two distinct constructs. HN concerns warmth, cognitive openness, agency and depth, whereas HU comprehends civility, refinement, moral sensibility and rationality (Haslam, 2006; Bain, 2014). Among other characteristics, human nature has been characterized by capacities for primary consciousness as well as for forming social groups and maintaining affectionate relationships. Human uniqueness has been characterized by capacities for higher-order consciousness as well as cognitively complex capacities for rationality (Wilson & Haslam, 2013).

These two distinct senses of humanness are connected to two types of dehumanization (Haslam, 2006). Denying HU to individuals or groups corresponds to likening them subtly or overtly to animals. Denying HN is likening individuals or groups to inanimate objects.

As proposed by Haslam (2006), “null” interactions can be connected to mechanistic dehumanization. Therefore, through a distancing and objectifying approach, mechanistic dehumanization involves a perceived lack of relatedness in which no social relation is perceived to exist with the dehumanized other.

Moreover, what makes us human has been shown to be contextually dependent (e.g.: Bain et al., 2009). Certain cultural groups, when asked to describe themselves (Bain et al., 2009)

and to describe humans (Bain and colleagues, 2012), emphasize HN terms (e.g., Australians), HU terms (e.g., Chinese) or both (e.g., Italians). Studies have also found that sometimes outgroup dehumanization does not occur (e.g. Capozza et al., 2012). Other studies show superhumanization of outgroups. Vaes, Heflick & Goldenberg (2010) found that American participants were shown to attribute the British with greater HU than their group. Bain and colleagues (2009) also found that Australians attributed greater HU to a Chinese outgroup than to their own group. Iatridis (2013), in the context of occupational groups (e.g. blue-collar vs. white-collar workers), found that low status groups attributed greater HU to the outgroup than the ingroup.

Although these previous studies show the importance of taking context into account in the (de)humanization of groups, there is no clear explanation of what may cause such differences across groups in the attribution of HN and HU to one's own group and to other groups. We claim that one of the underlying variables in the (de)humanization in the aforementioned studies is actually the relation between groups. This chapter proposes to address exactly that.

### **5.1. Overview of the Studies and Hypotheses**

In the previous chapter we showed that both communal sharing and market pricing relations with the ingroup reduced outgroup dehumanization to the same extent, when compared to the absence of a relation between ingroup and outgroup members. We then challenged the recategorization hypothesis that proposed that reduced outgroup dehumanization results from the inclusion of outgroup members in a more common uniting category.

The present research aims to replicate the results found in the Study 1 of the previous chapter, hence strengthening the claim that the reduction of outgroup dehumanization does

not occur through recategorization of ingroup and outgroup into a common uniting category, but because of the relation in which these groups are involved.

In the three studies presented in this chapter, all relational models were tested in order to further understand the role of social relations in the degree of humanness attributed to groups. Therefore, we operationalized four types of relations between the groups: communal sharing, equality matching, authority inferior and superior, as well as market pricing, and compared them all to a condition with no intergroup relation. Participants were presented scenarios in which an unknown human (studies 4 and 5) or an alien population (study 6) established one of the abovementioned relations or no relation with the ingroup: Italians (study 4), Portuguese (study 5) or fictional Humans (study 6).

To assess the perceived humanness of ingroup and outgroup, to the word association task (Viki et al., 2006) used in the previous chapter we added measures of human nature (HN) and human uniqueness (HU) of groups (adapted from Bastian, Jetten & Radke, 2012).

Similarly to what has been found extensively (for a review see Haslam & Loughnan, 2014) we hypothesized that participants would attribute more humanness to the ingroup than to the outgroup.

Once again, we do expect communal relations to induce a “one group” representation between the groups to a greater extent than other relations. However, what we predict is that the reduction in outgroup dehumanization does not occur through recategorization of group members into a common uniting category.

Instead, we predict that all relations, irrespective of the degree to which they elicit recategorization, will reduce outgroup dehumanization when compared to the absence of relation. This occurs because when in relations with the ingroup, outgroup members will be perceived as potential interaction partners.

Drawing from RMT, we further hypothesize that outgroup members will be less dehumanized on the HN dimension in all relations when compared to no relation (i.e. “null” relation), because in the absence of any relational motivations, members of the outgroup may be perceived more as objects and lacking HN. Considering that this dimension is associated with capacities for forming social groups and maintaining relationships, when participating in relations with the ingroup, outgroup members should be attributed more HN than when they are not in a relation.

Moreover, given that HN is characterized by warmth, cognitive openness, emotional responsiveness and depth, whereas HU involves characteristics such as rationality, maturity, refinement and civility, some particular predictions are also possible for certain types of relations.

First, because it is possible to cooperate according to MP independently of an attachment (i.e. warmth) to the partner (as compared to CS, for example) and it does not require engaging in emotional depth, MP may probably require less HN than other relations.

Second, AR relations, given that they involve status, are expected to moderate the dimension of humanness being denied to outgroup members. We expect low status groups to be dehumanized more than high status groups. Furthermore, given the link between HU and competence, which is often used as a proxy for status (Fiske, Cuddy, Glick, & Xu, 2002), we also expect the dehumanization of low status groups to occur rather on the HU dimension than on the HN dimension. Following this reasoning, low status groups are either expected to refrain from dehumanizing outgroup members (e.g. Cappozza et al., 2012), or to superhumanize them (e.g. Iatridis, 2013), especially on the HU dimension.

## **5.2. Study 4**

In this study, we operationalized four types of relations between the groups: communal sharing, equality matching, authority ranking (inferior and superior) and market pricing. Participants were presented scenarios in which an unknown population (Sequera) established one of the abovementioned relations or no relation with the ingroup (Italians).

### **5.2.1 Method**

#### ***5.2.1.1 Participants.***

442 participants were recruited in Northern Italy on social networks for a study on “Science and the media”. From these, 169 did not respond to the main dependent variables and nine were not of Italian nationality. Hence, data of 264 participants (154 females, mean age = 26.68,  $SD = 7.92$ ) entered the analysis.

#### ***5.2.1.2. Procedure and materials.***

This study was conducted online using Qualtrics software and justified by a cover story stating that the survey intended to understand the effectiveness of the scientific divulgation process in the media.

Participants were presented with a supposed article published in the journal “Visione” stating a recent anthropological finding. This fictional research referred to the first documented evidence of the presence of a population of unknown origin, the Sequera, in Northern Italy in the 1800s. This population was either said to have established one of the aforementioned relations or no relation (NoR) with the local Italian population. For CSR, MPR and NoR, we used the same texts as in Chapter 4. Manipulation texts for AR superior, AR inferior and EMR, as well as all original materials (and translations) are in Appendix B.

In CSR, the populations established a relation based on mutual help in which both contributed with their work and according to their possibilities to the collective well-being. In MPR they developed an economic exchange relation, in which interactions were guided solely by financial considerations and by cost-benefit analyses. In EMR they developed an egalitarian relation, in which the logic of reciprocity was applied and in which everyone received the same, regardless of what they wanted or needed. In AR superior, they developed a hierarchical relation, in which the local Italian population had a more privileged position than the Sequera. In AR inferior, the local Italian population had a less privileged position than the Sequera.

In the NoR condition, the article informed participants that the two populations never had contact with one another. The reason given for this lack of contact was the geographic contingencies of the landscape that at the time made the passage through some mountains impossible.

We used the same measures as in the previous chapter, except new manipulation check items were used, the human characteristics measure was replaced by a measure of human nature and human uniqueness and the attitude measure was changed from a 10 point scale to a thermometer scale (participants could choose any value between -100 and 100)

### ***5.2.1.3. Measures***

#### *5.2.1.3.1. Manipulation check.*

Participants were asked to rate the extent to which 15 sentences described the relation between the two populations on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). Five sentences regarded resource distribution (e.g.: “The resources that both populations have belong to both of them together”), five regarded division of labor (e.g.:

“The higher status population controls and directs the work of the lower status population”) and five described the relation in general terms (e.g.: “There was no relation between the two populations.”). In every domain, each sentence pertained to one type of relation.

#### *5.2.1.3.2.. Human nature and human uniqueness.*

Participants were asked to rate the extent to which eight items concerning human uniqueness (e.g.: “I think the Sequera/Italians have no self-control, like animals.”) and human nature (e.g.: “I think the Sequera/Italians are mechanic and cold, like robots.”) described each of the populations on a 7-point Likert scale ranging from 1 (not at all) to 7 (completely). Half of the items were reversed so that higher values corresponded to a higher attribution of HN and HU.

After completing a demographic survey, participants were redirected to another survey where they were asked to indicate their email address in order to participate in a lottery of five 15€ vouchers and be debriefed. Order of measures (concerning the ingroup first or the outgroup first) was counterbalanced across conditions.

### **5.2.2. Results<sup>7</sup>**

#### *5.2.2.1. Manipulation check.*

Five indices were computed by aggregating the sentences in the three domains (resource distribution, division of labor and general terms) that corresponded to each type of relation between the two groups or to the absence of a relation.

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<sup>7</sup> Analyses with gender and order of measures as factors will not be reported because no relevant interactions were found.



A 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs. MPR vs. NoR) x 5 (type of sentence: CS vs. MP vs. EM vs. AR vs. NR) mixed GLM with type of relation as a between-subjects factor and type of sentence as a within-subjects factor was conducted.

Type of relation,  $F(5,258) = 5.189$ ,  $p < .001$ ,  $\eta_p^2 = .091$ , and type of sentence,  $F(3.25, 837.75) = 54.18$ ,  $p < .001$ ,  $\eta_p^2 = .174$ , had a significant main effect on the extent to which participants agreed that sentences described the relation.

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(16.24,837.75) = 73.43$ ,  $p < .001$ ,  $\eta_p^2 = .587$  (Table 28). Planned contrasts were performed to verify if participants considered that those sentences that best described the relation corresponded to the manipulated type of relation. Participants chose CS sentences to a greater extent in the CSR than in other,  $t(254) = 7.33$ ,  $p < .001$ , MP sentences to a greater extent in the MPR than in other conditions,  $t(254) = 13.55$ ,  $p < .001$ , AR sentences to a greater extent in AR than in other conditions,  $t(254) = 21.17$ ,  $p < .001$ , EM sentences to a greater extent in EMR than in other conditions,  $t(254) = 13.53$ ,  $p < .001$  and NoR sentences in NR than in other conditions,  $t(254) = 18.61$ ,  $p < .001$ .

Simple mean comparisons (Bonferroni adjustment) in Table 28 show the same pattern found in contrasts.

Table 28. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation, as a function of type of relation.

	Type of sentence				
	CS	AR	EM	MP	NR
CSR	5.49(1.08) <sup>a,x</sup>	2.04 (1.49) <sup>b,z</sup>	3.91 (1.38) <sup>b,y</sup>	2.31(1.45) <sup>b,z</sup>	1.94 (1.28) <sup>bc,z</sup>
AR superior	3.88 (1.47) <sup>b,y</sup>	5.26 (1.44) <sup>a,x</sup>	3.45 (1.40) <sup>b,y</sup>	2.78 (1.24) <sup>b,z</sup>	2.22 (1.43) <sup>bc,z</sup>
AR inferior	4.10 (1.52) <sup>b,z</sup>	5.23 (1.30) <sup>a,x</sup>	3.29 (1.38) <sup>b,y</sup>	3.12 (1.19) <sup>bc,y</sup>	2.08 (1.13) <sup>bc,w</sup>
EMR	5.18 (1.62) <sup>a,z</sup>	1.42 (0.73) <sup>b,w</sup>	6.31 (0.90) <sup>a,x</sup>	3.72 (1.82) <sup>c,y</sup>	1.49 (0.97) <sup>b,w</sup>
MPR	2.75 (1.59) <sup>bc,z</sup>	1.64 (1.05) <sup>b,w</sup>	3.65 (1.25) <sup>b,y</sup>	5.99 (1.00) <sup>a,x</sup>	2.53 (1.22) <sup>c,z</sup>
NoR	2.62 (1.46) <sup>bc,y</sup>	1.85 (1.30) <sup>b,z</sup>	2.48 (1.39) <sup>bc,yz</sup>	2.41 (1.51) <sup>b,yz</sup>	5.80 (1.56) <sup>a,x</sup>

Note: <sup>abc</sup> Conditions with different superscripts for the same measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>wxyz</sup> Different superscripts between each measure on the same condition indicate significant differences on the extent to which participants considered that each type of sentence described the relation.

### 5.2.2.2. Outgroup dehumanization.

Three measures of humanness were used: HN, HU and humanness in words.

Items for HN and HU were averaged into a single index for each group. We computed four indices: HN of the ingroup ( $\alpha = .62$ ), HN of the outgroup ( $\alpha = .65$ ), HU of the ingroup ( $\alpha = .49$ ) and HU of the outgroup ( $\alpha = .57$ ).

Regarding human and animal words, we first computed four indices: human related words attributed to the ingroup ( $M = 6.26$ ;  $SD = 1.40$ ), animal related words attributed to the ingroup ( $M = 2.09$ ;  $SD = 1.42$ ), human related words attributed to the outgroup ( $M = 5.46$ ;  $SD = 1.58$ ) and animal related words attributed to the outgroup ( $M = 2.90$ ;  $SD = 1.58$ ). Following the

same procedure as described in the previous chapter, a measure of humanness for the ingroup ( $M = 7.09$ ;  $SD = 1.37$ ) and the outgroup ( $M = 6.28$ ;  $SD = 1.55$ ) was obtained.

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs. MPR vs. NoR) mixed GLM with type of relation as a between-subjects factors and the other two as within-subjects, was conducted (see Table 29).

A significant main effect of group was found,  $F(1,258) = 17.30$ ,  $p < .001$ ,  $\eta_p^2 = .063$ . Participants attributed more humanness to the ingroup ( $M = 5.56$ ;  $SD = 0.80$ ) than to the outgroup ( $M = 5.34$ ;  $SD = 0.86$ ).

In addition, a significant main effect of type of relation,  $F(5,258) = 10.91$ ,  $p < .001$ ,  $\eta_p^2 = .175$  and a significant main effect of type of measure were found,  $F(1.49,384.97) = 499.62$ ,  $p < .001$ ,  $\eta_p^2 = .659$ . Significant interactions were found between type of relation and type of measure,  $F(7.46,384.97) = 6.17$ ,  $p < .001$ ,  $\eta_p^2 = .107$ ; group and type of measure,  $F(1.81,468.13) = 59.18$ ,  $p < .001$ ,  $\eta_p^2 = .187$ ; and group and type of relation,  $F(5,258) = 6.80$ ,  $p < .001$ ,  $\eta_p^2 = .116$ .

More importantly, a significant interaction between group, type of relation and type of measure was found,  $F(9.07,468.13) = 6.57$ ,  $p < .001$ ,  $\eta^2 = .014$  (table 29). To test whether this effect corresponded to the main hypotheses, we first conducted planned contrasts analyses on the attribution of humanness to each group separately by measure and then on outgroup dehumanization (by calculating the difference between ingroup and outgroup in the contrasts: ingroup minus outgroup).

We first tested whether the attribution of humanness to the outgroup was lower in NoR than in all conditions taken together. Humanness attributions to the outgroup were lower in NoR than in all the other conditions taken together,  $t(253) = -5.51$ ,  $p = .010$  and this effect was

significant on all three measures, HN,  $t(253) = -5.51, p < .001$ , HU,  $t(253) = -4.98, p < .001$ , and words,  $t(253) = -3.83, p < .001$ .

Next we analyzed humanness attributions to the ingroup. Humanness attributions to the ingroup were lower in NoR than in all the other conditions taken together,  $t(253) = -3.95, p < .001$ . This effect was due to the fact that humanness attributed to ingroup members was lower in NoR than in all relations regarding HN,  $t(253) = -2.69, p = .008$ , and words,  $t(253) = -1.98, p = .049$ , but not HU,  $t(253) = -0.98, p = .330$ . Notably, ingroup members were also more humanized in the relational conditions when compared to the absence of relation. To verify whether there was still an effect of type of relation on outgroup dehumanization, we ran planned contrasts on the difference between groups (ingroup minus outgroup).

We tested whether dehumanization of the Sequera was higher in the NoR condition than in all the other conditions taken together,  $t(256) = 2.88, p = .004, \eta^2 = .056$ . Participating in a relation indeed reduced outgroup dehumanization when compared to the absence of a relation. Importantly, given the direction of the effect for ingroup humanization reported above, the effect on the difference (outgroup dehumanization) cannot be explained by a decrease in ingroup humanization. It rather suggests it is due to the increase of outgroup humanization in the relational conditions.

Planned contrasts testing each relational condition separately against NoR, showed that dehumanization of the outgroup was significantly greater in NoR than in CSR,  $t(256) = 2.29, p = .023$ , EMR,  $t(256) = 2.99, p = .003$ , AR superior,  $t(256) = 2.12, p = .035$ , AR inferior,  $t(256) = 5.65, p < .001$ , but only marginally in MPR,  $t(256) = 1.62, p = .106$ .

Because we were interested in the dimension in which outgroup dehumanization was reduced, we tested if outgroup dehumanization was lower in all relational conditions taken together when compared to NoR, separately for each of the three measures. This contrast was

significant, for HN,  $t(256) = 2.79, p = .006, \eta^2 = .029$ , HU,  $t(256) = 3.90, p < .001, \eta^2 = .056$ , and words,  $t(256) = 2.04, p = .042, \eta^2 = .016$ .

Separate contrasts for each relational condition showed that outgroup dehumanization of the outgroup in HN was significantly greater in NoR than in EMR,  $t(256) = 1.96, p = .051$ , AR superior,  $t(256) = 4.15, p < .001$ , and MPR,  $t(256) = 2.33, p = .021$ . It did not differ from CSR,  $t(256) = 1.22, p = .223$  and AR inferior,  $t(256) = .84, p = .399$ .

Regarding HU, dehumanization of the outgroup was significantly greater in NoR than in CSR,  $t(256) = 2.26, p = .025$ , EMR,  $t(256) = 2.01, p = .046$  and AR inferior,  $t(256) = 8.54, p < .001$ . It did not differ from AR superior,  $t(256) = .19, p = .847$ , nor from MPR,  $t(256) = 1.55, p = .121$ .

Concerning the attribution of words, dehumanization of the outgroup was significantly greater in NoR than in EMR,  $t(256) = 2.28, p = .023$  and AR inferior,  $t(256) = 3.02, p = .003$ . It did not differ from CSR,  $t(256) = 1.46, p = .146$ , AR superior,  $t(256) = 0.71, p = .476$ , or MPR,  $t(256) = 0.15, p = .881$ .

Interestingly, in AR, the relative position of ingroup and outgroup members, affected the dimension in which outgroup dehumanization occurred. Placing participants' ingroup in the superior AR position only reduced outgroup dehumanization compared to NoR on the HN dimension. On the other hand, placing participants' ingroup in an inferior AR position only reduced outgroup dehumanization on the HU dimension and in humanness in words.

Given this difference in outgroup dehumanization according to dimension in AR relations, we decided to also test if AR superior and AR inferior differed in their degree of outgroup dehumanization. Planned contrasts showed that participants dehumanized the outgroup to a greater extent in AR superior than in AR inferior,  $t(256) = -3.44, p = .001, \eta^2 = .044$ . More importantly, when looking at the dimensions in which it occurred, we found that outgroup dehumanization was higher in AR superior than in AR inferior only in HU,  $t(256) = -8.02, p <$

.001, and on the words measure,  $t(256) = -2.23, p = .027$ . On the HN dimension, however, participants dehumanized the outgroup more in the AR inferior condition than in the AR superior condition,  $t(256) = 3.09, p = .002$ .

Table 29. Means (and standard deviations) of HN, HU, word attributions to the Sequera and Italians and outgroup dehumanization according to the type of relation.

	Sequera			Italians			Outgroup dehumanization		
	HN	HU	Words	HN	HU	Words	HN	HU	Words
CSR	5.82 <sup>b,x</sup> (0.93)	4.73 <sup>b,x</sup> (0.92)	6.46 <sup>ab,x</sup> (1.68)	5.72 <sup>b,x</sup> (0.88)	4.85 <sup>b,x</sup> (0.75)	7.19 <sup>abc,y</sup> (1.40)	-.10 <sup>a</sup> (0.38)	.12 <sup>bc</sup> (0.82)	.73 <sup>b</sup> (1.46)
AR Superior	4.98 <sup>a,x</sup> (1.01)	4.01 <sup>ac,x</sup> (.94)	6.43 <sup>ab,x</sup> (1.44)	4.29 <sup>a,y</sup> (1.17)	4.56 <sup>ab,y</sup> (1.00)	7.40 <sup>bc,y</sup> (1.34)	-.69 <sup>a</sup> (1.52)	.55 <sup>b</sup> (1.34)	.97 <sup>b</sup> (1.76)
AR Inferior	4.78 <sup>a,x</sup> (1.20)	5.30 <sup>b,x</sup> (0.90)	6.24 <sup>ab,x</sup> (1.37)	4.74 <sup>a,x</sup> (1.12)	4.06 <sup>a,y</sup> (1.31)	6.44 <sup>a,x</sup> (1.13)	-.03 <sup>a</sup> (1.18)	-1.24 <sup>a</sup> (1.44)	.20 <sup>a</sup> (1.27)
EMR	5.93 <sup>b,x</sup> (0.78)	4.89 <sup>b,x</sup> (1.09)	6.66 <sup>b,x</sup> (1.18)	5.67 <sup>b,x</sup> (0.83)	5.06 <sup>b,x</sup> (0.99)	7.11 <sup>abc,x</sup> (1.25)	-.26 <sup>a</sup> (0.67)	.17 <sup>bc</sup> (0.67)	.45 <sup>b</sup> (1.27)
MPR	5.00 <sup>a,x</sup> (0.81)	4.53 <sup>bc,x</sup> (0.99)	6.50 <sup>b,x</sup> (1.61)	4.68 <sup>a,y</sup> (0.95)	4.80 <sup>b,x</sup> (0.72)	7.65 <sup>b,y</sup> (1.35)	-.32 <sup>a</sup> (0.79)	.27 <sup>bc</sup> (0.76)	1.15 <sup>b</sup> (1.52)
NoR	4.47 <sup>a,x</sup> (1.01)	3.93 <sup>a,x</sup> (1.05)	5.55 <sup>a,x</sup> (1.70)	4.61 <sup>a,x</sup> (0.86)	4.52 <sup>ab,y</sup> (0.87)	6.75 <sup>ac,y</sup> (1.43)	.14 <sup>a</sup> (0.90)	.59 <sup>bc</sup> (0.90)	1.20 <sup>b</sup> (1.90)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Sequera and Italians on the same measure within the same condition indicate significant differences in humanness attributions to the Sequera and Italians.

Analyses were run entering attitude towards the Italians ( $M = 38.20$ ;  $SD = 39.73$ ) and the Sequera ( $M = 39.55$ ;  $SD = 37.01$ ) as covariates. Hence, a 2 (group: Sequera vs. Italians) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as a between-subjects factor, group as a within-subjects and attitudes towards each group as covariates, was conducted on the attribution of humanness to the groups.

Significant main effects were found for attitude towards the ingroup,  $F(1,252) = 4.49$ ,  $p = .035$ ,  $\eta_p^2 = .018$ , and for attitude towards the outgroup,  $F(1,252) = 23.54$ ,  $p < .001$ ,  $\eta_p^2 = .085$ . Attitude towards the ingroup,  $F(1,252) = 25.89$ ,  $p < .001$ ,  $\eta_p^2 = .093$ , as well as attitude towards the outgroup,  $F(1,252) = 19.04$ ,  $p < .001$ ,  $\eta_p^2 = .070$ , significantly interacted with group. Additionally, attitude towards the ingroup significantly interacted with type of measure,  $F(1.52,383.49) = 8.95$ ,  $p = .001$ ,  $\eta_p^2 = .034$ .

More importantly, when controlling for attitudes, the interaction between group, type of relation and type of measure remained significant,  $F(9.08,457.68) = 6.08$ ,  $p < .001$ ,  $\eta^2 = .018$ .

Analyses were also run controlling for identification with the ingroup ( $M = 4.74$ ;  $SD = 1.67$ ) and identification with the outgroup ( $M = 3.57$ ;  $SD = 1.82$ ) in attributions of humanness to the groups. Hence, a 2 (group: Sequera vs. Italians) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as between subject factor, group as within-subjects and identification with each group as covariates was conducted on the attribution of humanness to the groups. A significant main effect was found for identification with the ingroup,  $F(1,250) = 16.24$ ,  $p < .001$ ,  $\eta_p^2 = .061$ , but not for identification with the outgroup,  $F < 0.51$ . Identification with the ingroup,  $F(1,250) = 6.45$ ,  $p = .012$ ,  $\eta_p^2 = .025$ , as well as with the outgroup,  $F(1,250) = 7.67$ ,  $p = .006$ ,  $\eta_p^2 = .030$ , interacted with group.

Moreover, identification with the ingroup interacted with type of measure,  $F(1.50, 453.66) = 5.65, p = .008, \eta_p^2 = .022$ .

More importantly, when controlling for identification with groups, the interaction between group, type of relation and type of measure, remained significant,  $F(9.07, 453.66) = 6.59, p < .001, \eta^2 = .024$ .

### ***5.2.2.3 Attitude towards the groups.***

To verify whether attitudes varied as a function of the manipulation, we conducted a repeated measures analysis of variance with type of relation as a between-subjects factor on the attitudes towards the ingroup and the outgroup.

There was no significant main effect of group,  $F(1, 254) = 1.04, p = .309, \eta_p^2 = .004$ . A significant main effect of type of relation was found,  $F(5, 254) = 12.05, p < .001, \eta_p^2 = .192$ .

More importantly, a significant interaction was found between group and type of relation,  $F(5, 254) = 6.69, p < .001, \eta_p^2 = .116$ . Participants' attitudes towards the groups were more positive in CSR and EMR than in other relations. Regarding the outgroup, participants had a less positive attitude towards the outgroup in the absence of a relation than when the groups were involved in a relation (see table 30). Furthermore, in CSR and EMR, participants' attitude towards the outgroup was more positive than in other relations. Regarding the ingroup, participants showed a less positive attitude in both AR relations and in the absence of a relation with the outgroup, when compared to other relations. Noteworthy is the fact that attitudes towards the ingroup were less positive when its members were in the higher status position than in other conditions. Regarding intergroup differences, in NoR participants expressed a more positive attitude towards the ingroup than the outgroup, but in AR superior participants showed a more positive attitude towards the outgroup than the ingroup.



Table 30. Means (and standard deviations) of attitude towards the Sequera and Italians as a function of type of relation.

	Attitudes	
	Sequera	Italians
CSR	62.05 (30.55) <sup>a,x</sup>	62.34 (28.04) <sup>a,x</sup>
AR superior	43.86 (33.24) <sup>b,x</sup>	19.67 (41.68) <sup>ab,y</sup>
AR inferior	27.87 (33.55) <sup>b,x</sup>	23.05 (39.40) <sup>b,x</sup>
EMR	56.64 (33.21) <sup>ac,x</sup>	57.35 (31.86) <sup>a,x</sup>
MPR	30.21 (37.00) <sup>c,x</sup>	35.03 (35.15) <sup>b,x</sup>
NoR	18.29 (33.35) <sup>b,x</sup>	29.65 (40.64) <sup>bc,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Sequera and Italians on the same condition indicate significant differences in attitudes towards the Sequera and Italians.

#### 5.2.2.4. Representation of the intergroup situation.

A 3 (groups' representation: one group vs. two groups vs. separate individuals) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs MPR vs. NoR) mixed GLM with type of relation as a between-subjects factor and the other factor as within-subjects was conducted.

A significant main effect of groups' categorization was found,  $F(1.79, 459.95) = 76.88, p < .001, \eta_p^2 = .230$ . No type of relation main effect was found,  $F < 0.91$ .

A significant interaction between groups' categorization and type of relation was found,  $F(8.95, 459.95) = 20.73, p < .001, \eta_p^2 = .287$  (see Table 31). As predicted, participants perceived the groups as "one group" to a greater extent in CSR than in all other relations. However, in EMR participants also perceived the groups as constituting "one group" more

than in other relations. Participants perceived the populations as “two groups” to a greater extent in NoR than in all other conditions. Moreover, in MPR participants also perceived the Sequera and the Italians as “two groups” to a greater extent than in other relations. Additionally, in CSR and EMR participants perceived the groups more as “one group” than “two groups” or “separate individuals”. In MPR, the Sequera and the Italians were perceived more as “two groups” than “one group” or “separate individuals”. The same was found in NoR.

*Table 31.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	5.27 (1.35) <sup>a,x</sup>	2.77 (2.02) <sup>c,y</sup>	2.68(2.04) <sup>a,y</sup>
AR superior	4.02 (2.06) <sup>b,y</sup>	4.12 (2.03) <sup>b,y</sup>	2.07 (1.12) <sup>a,x</sup>
AR inferior	4.08 (1.82) <sup>b,y</sup>	3.85 (1.92) <sup>b,y</sup>	2.37 (1.41) <sup>a,x</sup>
EMR	5.10 (1.69) <sup>ab,x</sup>	3.33 (1.95) <sup>c,y</sup>	1.83 (1.15) <sup>a,z</sup>
MPR	3.36 (1.75) <sup>bd,y</sup>	4.93 (1.62) <sup>ab,x</sup>	2.70 (1.83) <sup>a,y</sup>
NoR	2.08 (1.54) <sup>c,y</sup>	6.18 (1.10) <sup>a,x</sup>	2.68 (1.86) <sup>a,y</sup>

Note: <sup>abcd</sup> Conditions with different superscripts within the same measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xyz</sup> Different superscripts between representations indicate significant differences in representations.

We also ran regression analyses to examine whether the “one group” representation significantly predicted outgroup dehumanization. The “one group” representation did not significantly predict outgroup dehumanization, neither in HN,  $\beta = .06$ ,  $t(261) = 1.04$ ,  $p = .299$ ,

$R^2 = .00$ , nor in HU,  $\beta = -.10$ ,  $t(261) = -1.64$ ,  $p = .103$ ,  $R^2 = .01$ . However, it significantly predicted outgroup dehumanization in the attribution of words,  $\beta = -.13$ ,  $t(261) = -2.05$ ,  $p = .042$ ,  $R^2 = .02$ . Therefore, the more participants perceived the ingroup and the outgroup as constituting one single group, the less they dehumanized outgroup members.

In regressions with dummies, we then tested if each relation significantly predicted the “one group” representation. CSR,  $\beta = .30$ ,  $t(261) = 5.03$ ,  $p < .001$ ,  $R^2 = .09$ , EMR,  $\beta = .25$ ,  $t(261) = 4.19$ ,  $p < .001$ ,  $R^2 = .06$ , and MPR (negatively),  $\beta = -.13$ ,  $t(261) = -2.05$ ,  $p = .041$ ,  $R^2 = .02$ , significantly predicted the “one group” representation. AR superior,  $\beta = .02$ ,  $t(261) = .32$ ,  $p = .746$ ,  $R^2 = .00$  and AR inferior,  $\beta = .03$ ,  $t(261) = .49$ ,  $p = .628$ ,  $R^2 = .00$ , did not.

After that, we proceeded to test if the relationship between CSR, EMR and MPR and outgroup dehumanization (separately for HU, HN and words) was mediated by the “one group” representation. There was only one significant negative indirect effect of CSR on outgroup dehumanization in words through a “one group” representation,  $\beta = -.17$ ,  $SE=0.09$ , 95% CI [-0.35, -0.02]. The reduction of outgroup dehumanization in the other relational conditions when compared to the absence of relation (although only marginal in MPR) did not occur through a “one group” representation.

#### ***5.2.2.5. Valence of consequences and collaboration.***

Two one-way GLMs were conducted on the perceived valence of consequences and collaboration attributed to the relation between the local Italians and the Sequera populations entering type of relation as a between-subjects factor.

A main effect of type of relation was found for perceived valence of the consequences of the relation,  $F(5, 258) = 20.71$ ,  $p < .001$ ,  $\eta_p^2 = .291$  (see table 32). NoR was perceived as less positive than all relational conditions. Moreover, AR superior relations were perceived as less

positive than CSR, EMR and MPR, but more positive than NoR. Moreover, participants perceived both AR relations as positive to the same extent.

*Table 32.* Means (and standard deviations) of perceived valence of the relation according to the type of relation.

	Valence
CSR	6.05 (1.06) <sup>b</sup>
AR superior	4.74 (1.73) <sup>c</sup>
AR inferior	5.26 (1.07) <sup>bc</sup>
EMR	5.95 (1.16) <sup>b</sup>
MPR	5.56 (1.20) <sup>b</sup>
NoR	3.87 (0.94) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

A main effect of type of relation was also found for perceived collaboration in the relation,  $F(2, 260) = 25.45, p < .001, \eta_p^2 = .334$  (see table 33). NoR was perceived as less collaborative than all relations (all  $p$ 's  $< .001$ ). AR superior and AR inferior were also perceived as less collaborative than CSR and EMR. No other differences were significant ( $p$ 's  $> .159$ ).

Table 33. Means (and standard deviations) of perceived collaboration in the relation according to the type of relation.

	Collaboration
CSR	6.03 (1.44) <sup>cd</sup>
AR superior	5.19 (1.30) <sup>b</sup>
AR inferior	5.33 (1.25) <sup>bd</sup>
EMR	6.22 (0.94) <sup>c</sup>
MPR	5.61 (0.88) <sup>bcd</sup>
NoR	3.94 (0.59) <sup>a</sup>

Note: <sup>abcd</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

#### 5.2.2.6. Identification with the groups.

To test if identification varied as a function of the manipulation, a 2 (group: Sequera vs. Italians) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) mixed GLM with type of relation as a between-subjects factor and group as a within-subjects factor was conducted on the attribution of humanness to the groups.

Significant main effects of type of relation,  $F(5, 252) = 6.57, p < .001, \eta_p^2 = .115$ , and group,  $F(1, 252) = 84.18, p < .001, \eta_p^2 = .250$ , were found. Participants showed greater identification with the ingroup than the outgroup.

Furthermore, a significant interaction was found between group and type of relation,  $F(5, 252) = 3.69, p = .003, \eta_p^2 = .068$  (see Table 34). Participants identified more with the ingroup than the outgroup in all conditions. This difference in identification with groups was not significant when groups were involved in EMR. Regarding differences between conditions, participants identified more with the ingroup in CSR than in both AR relations. Identification with the outgroup, in turn, was lower in the absence of a relation and when the outgroup was

in a higher status position than in all other conditions (but only differed significantly from EMR and CSR).

*Table 34.* Means (and standard deviations) of identification with Sequera and Italians according to the type of relation.

	Identification	
	Sequera	Italians
CSR	4.43 (1.47) <sup>b,x</sup>	5.39 (1.33) <sup>b,y</sup>
AR superior	3.40 (1.84) <sup>ab,x</sup>	4.30 (1.70) <sup>a,y</sup>
AR inferior	3.15 (1.84) <sup>a,x</sup>	4.18 (1.85) <sup>a,y</sup>
EMR	4.34 (1.64) <sup>b,x</sup>	4.80 (1.59) <sup>ab,x</sup>
MPR	3.49 (1.87) <sup>ab,x</sup>	5.00 (1.54) <sup>ab,y</sup>
NoR	2.58 (1.58) <sup>a,x</sup>	4.73 (1.77) <sup>ab,y</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Sequera and Italians on the same condition indicate significant differences in identification with the Sequera and Italians.

### 5.2.3. Discussion

Participants attributed less overall humanness to outgroup than to ingroup members. Moreover, type of relation moderated the dehumanization of outgroup members. Outgroup dehumanization was therefore reduced by all relations taken together when compared to the absence of a relation between ingroup and outgroup members.

Importantly, perceiving the ingroup and the outgroup as part of a more inclusive common category did not predict outgroup dehumanization in the HN and HU dimensions but it did negatively predict outgroup dehumanization in the attribution of humanness in words. CSR

and EMR relations elicited a stronger “one group” representation compared to the other conditions, but only CSR reduced outgroup dehumanization in words through a “one group” representation. The reduction of outgroup dehumanization in the other relational conditions when compared to the absence of relation, cannot be explained by a “one group” representation.

All relations (taken together and individually, but not significantly in CSR and AR inferior) reduced outgroup dehumanization in the HN dimension to the same extent. This supports the hypothesis that social relations are opposed to “null” relations especially in the HN dimension, in which individuals are seen as objects or obstacles.

The moderation of outgroup dehumanization by type of relation also varied between humanness dimensions. This variation was mostly explained by the difference between AR superior and AR inferior relations. Participants in the high status group attributed more HU and humanness in words to their group but more HN to the low status outgroup. On the other hand, participants in the low status group attributed more HU to the high status outgroup.

Evidence (Jones-Lumby and Haslam, 2005) was found for a direct link between HN and HU and the dimensions of social judgment (warmth and competence). While HN tended to be related with both warmth and competence, groups perceived as high on HU tended to be seen as competent, but not warm. Following the same reasoning, low status groups should be seen as less uniquely human than high status groups. Accordingly, some studies (Vaes & Paladino, 2010, Miranda, Gouveia-Pereira & Vaes, 2010b), linking status with competence, found that high status outgroups were seen as more human than the low status, less competent outgroups. This concurs with our finding that in relations in which the ingroup was in a high status position, participants dehumanized the low status outgroup in the HU and words dimensions (the latter also focuses on the human-animal divide).

In this study we also found that when the ingroup was in a low status position, participants did not dehumanize the high status outgroup. Similar results were found by Miranda and colleagues (2010) with Gypsies and Blacks with reference to the White Portuguese outgroup and by Capozza and colleagues (2012) with Southern Italians regarding Northern Italians. As to why low status groups sometimes do not dehumanize, Jost and Banaji (1994) argue that, in the case of dominant groups, the motivation to hold a favorable image of one's group and the motivation to legitimate the status quo are aligned. Regarding dominated groups, however, the latter motivation may prevent low status groups from favorably differentiating their ingroup from high status outgroups.

Interestingly, in this study we found that participants in the high status group attributed more HN to the low status outgroup and that participants in the low status group attributed more HU to the high status outgroup. This superhumanization of outgroups has been found in previous research with Australians regarding a Chinese outgroup (Bain et al., 2009) and Americans with reference to a British outgroup (Vaes, Heflick & Goldenberg, 2010). More recently, studies focusing on the role of occupational status in dehumanization (Iatridis, 2013) found that high status occupational groups (e.g. blue-collar vs. white-collar workers) were not dehumanized, and were even sometimes superhumanized in the HU dimension by people in low status occupations. This finding that participants attributed their high status ingroup less HN than the low status outgroup is also in line with results by Bain and colleagues (2009, Study 1) in which the Chinese attributed higher HN to the Australian outgroup and higher HU to their own group. Groups tend to emphasize the dimension of humanness on which they feel relatively more prototypical and downplay or ignore the other dimension (Bain, 2014).

Additionally, attitudes towards and identification with the groups, perceived valence and collaboration did not follow the same pattern as outgroup dehumanization.



In order to verify if these findings would be replicated using a different population, study 5 was run.

### **5.3. Study 5**

Study 5 is a methodological replication of the results of the previous study using a Portuguese population.

#### **5.3.1. Method**

##### ***5.3.1.1. Participants.***

482 participants were recruited in Portugal via e-mail and using social networks for a study on “Science and the media”. From those, 216 had missing data on the main dependent variables, one was not of Portuguese nationality and one was underage. Hence, data of 264 participants (198 females, mean age= 30.24,  $SD = 8.68$ ) entered the analysis.

##### ***5.3.1.2 Procedure, materials and measures.***

This study was conducted online using Qualtrics software and justified by a cover story stating that the survey intended to understand the effectiveness of the scientific divulgation process in the media. With few exceptions, the manipulation texts and measures in this study were identical to those used in study 4 (after translation and back translation from Italian to Portuguese).

Manipulations texts differed from those used in the previous study in the following aspects: the journal had a Portuguese name: “Explora”; the name of the population was Seibava and it was located in Central Portugal in the 1300s. The date used in the Study 4 was

1800's. However, because Portugal has a smaller territory than Italy, it could have seemed less believable for an unknown population to have existed just over 200 years ago.

Human and animal related words used in this study were pretested for the Portuguese population. In a pilot study, ten animal and ten human related words were selected.<sup>8</sup>

After completing a demographic survey, participants were redirected to another survey where they were asked to indicate their email address in order to participate in a lottery of five 70€ vouchers and be debriefed.

### **5.3.2. Results**

#### **5.3.2.1. Manipulation check.**

Type of relation,  $F(5,258) = 9.47, p < .001, \eta_p^2 = .155$ , and type of sentence,  $F(3.42,883.38) = 61.42, p < .001, \eta_p^2 = .192$ , had main effects on the extent to which participants considered that each sentence described the relation.

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(17.12, 883.38) = 61.07, p < .001, \eta_p^2 = .542$ . Planned contrasts were performed to verify if participants considered that those sentences that best described the relation corresponded to the manipulated type of relation. Participants chose CS sentences to a greater extent in the CSR than in other conditions,  $t(254) = 4.74, p < .001$ , MP sentences to a greater extent in the MPR than in other conditions,  $t(254) = 9.16, p < .001$ , AR sentences to a greater extent in both AR relations,  $t(254) = 20.06, p < .001$  than in other conditions, EM sentences to a greater extent in EMR than in other conditions,  $t(254) = 9.39, p < .001$  and more NR sentences in NoR than in other conditions,  $t(254) = 19.92, p < .001$ .

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<sup>8</sup> Animal and human related words differed in human uniqueness,  $t(31) = 11.88, p < 0.001$ , but not in valence,  $t(30) = -0.86, p = .394$ .

The table below showed the same pattern as found in the contrasts, with one exception. Unexpectedly, participants chose more CS sentences in EMR than in CSR. Nonetheless, participants in CSR chose more CS than EM sentences and participants in EMR chose more EM sentences than CS sentences (although the latter difference was not significant).

*Table 35.* Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation as a function of type of relation.

	Type of sentence				
	CS	AR	EM	MP	NR
CSR	5.36 (1.21) <sup>c,x</sup>	2.19 (1.44) <sup>a,w</sup>	4.18 (1.22) <sup>b,y</sup>	2.66 (1.49) <sup>a,w</sup>	2.33 (1.22) <sup>ab,w</sup>
AR superior	4.24 (1.35) <sup>b,x</sup>	5.52 (1.39) <sup>b,z</sup>	3.46 (1.41) <sup>b,y</sup>	4.22 (1.39) <sup>b,x</sup>	2.40 (1.12) <sup>ab,w</sup>
AR inferior	4.44 (1.42) <sup>b,x</sup>	5.63 (1.08) <sup>b,y</sup>	4.04 (1.30) <sup>b,x</sup>	4.49 (1.13) <sup>b,x</sup>	2.47 (1.21) <sup>b,w</sup>
EMR	5.59 (1.43) <sup>cd,x</sup>	1.87 (1.26) <sup>a,w</sup>	5.63 (1.18) <sup>c,x</sup>	4.16 (1.56) <sup>b,y</sup>	1.69 (1.04) <sup>a,w</sup>
MPR	3.99 (1.93) <sup>bc,x</sup>	2.10 (1.27) <sup>a,w</sup>	4.21 (1.30) <sup>b,x</sup>	5.91 (1.34) <sup>c,y</sup>	2.55 (1.20) <sup>b,w</sup>
NoR	2.67 (1.49) <sup>a,wy</sup>	2.24 (1.41) <sup>a,w</sup>	2.54 (1.51) <sup>a,wy</sup>	3.06 (1.52) <sup>a,y</sup>	6.16 (1.33) <sup>c,x</sup>

Note: <sup>abcd</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>wxyz</sup> Different superscripts between measures on the same condition indicate significant differences on the extent to which participants considered that the sentence described the relation.

### **5.3.2.2. Outgroup dehumanization.**

As in study 4, three measures of humanness were used: HN, HU, and human and animal words.

Items for HN and HU were averaged into a single index for each group. We computed four indices: HN of the ingroup ( $\alpha = .73$ ), HN of the outgroup ( $\alpha = .72$ ), HU of the ingroup ( $\alpha = .64$ ) and HU of the outgroup ( $\alpha = .68$ ).

Regarding human and animal words, we first computed four indices: human related words attributed to the ingroup ( $M = 6.38$ ;  $SD = 1.27$ ), animal related words attributed to the ingroup ( $M = 1.94$ ;  $SD = 1.23$ ), human related words attributed to the outgroup ( $M = 5.66$ ;  $SD = 1.56$ ) and animal related words attributed to the outgroup ( $M = 2.60$ ;  $SD = 1.53$ ).

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs. humanness in words) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs. MPR vs. NoR) mixed GLM with type of relation as a between-subjects factors and the other two as within-subjects was conducted (Table 35).

A significant main effect of group was found,  $F(1,256) = 53.93$ ,  $p < .001$ ,  $\eta_p^2 = .174$ . Participants attributed more humanness to the ingroup ( $M = 5.81$ ;  $SD = 0.75$ ) than to the outgroup ( $M = 5.42$ ;  $SD = 0.91$ ). A significant main effect of type of relation,  $F(5,256) = 6.84$ ,  $p < .001$ ,  $\eta_p^2 = .118$  and a significant main effect of type of measure were found,  $F(1.31,336.40) = 437.62$ ,  $p < .001$ ,  $\eta_p^2 = .631$ . Significant interactions were found between type of relation and type of measure,  $F(6.57,336.40) = 2.41$ ,  $p = .023$ ,  $\eta_p^2 = .045$ ; group and type of measure,  $F(1.87,478.87) = 18.52$ ,  $p < .001$ ,  $\eta_p^2 = .067$ ; and group and type of relation,  $F(5,256) = 6.86$ ,  $p < .001$ ,  $\eta_p^2 = .118$ .

More importantly, a significant interaction between group, type of relation and type of measure was found,  $F(9.35,478.87) = 5.42$ ,  $p < .001$ ,  $\eta^2 = .011$ . We then ran planned contrast analyses on the attribution of humanness to each group separately for measure.

We tested whether the attribution of humanness to the outgroup was lower in NoR than in all conditions taken together. Humanness attributions to the outgroup were significantly lower in NoR than in all the other conditions taken together,  $t(251) = -4.62$ ,  $p < .001$ . Humanness

attributed to outgroup members was also lower in NoR than in all relations regarding HN,  $t(251) = -5.25, p < .001$ , HU,  $t(251) = -4.33, p < .001$ , and, only marginally, in words,  $t(251) = -1.69, p = .092$ .

Then we tested effects on the humanness attributions to the ingroup. It did not differ significantly between NoR and all the other conditions taken together,  $t(251) = -1.30, p = .196$ . However, HN attributed to ingroup members was significantly lower in NoR than in all relations taken together,  $t(251) = -2.69, p = .007$ . The effect was in the same direction, but not significant for HU,  $t(251) = -1.58, p = .115$ , and words,  $t(251) = -1.52, p = .130$ . As in study 4, both ingroup and outgroup were more humanized in relational conditions than in the absence of a relation.

To understand if there would still be an effect of relation on outgroup dehumanization we ran the same planned contrasts on the difference between groups. As we had also found in study 4, outgroup dehumanization was higher in the NoR condition than in all the other conditions taken together,  $t(254) = 3.77, p < .001, \eta^2 = .053$ . Again, we cannot explain outgroup dehumanization by a decrease in the perceived humanness of ingroup members, but as due to an increase in outgroup humanization in relational conditions. Additionally, we tested through planned contrasts if outgroup dehumanization was lower in each relational condition than in the NoR.

Dehumanization of the outgroup was significantly greater in NoR than in CSR,  $t(254) = 3.17, p = .002$ , EMR,  $t(254) = 3.61, p < .001$ , AR inferior,  $t(254) = 4.31, p < .001$  and MPR,  $t(254) = 3.34, p = .001$ . Dehumanization of outgroup members did not differ between AR superior and in NoR,  $t(254) = .11, p = .910$ .

In order to understand in which dimensions outgroup dehumanization was reduced, we performed contrasts for each measure separately. These contrasts were all significant, for HN,

$t(254) = 2.52, p = .012, \eta^2 = .024$ , HU,  $t(254) = 2.66, p = .008, \eta^2 = .027$ , and words,  $t(254) = 2.90, p = .004, \eta^2 = .032$ .

We also tested, in planned contrasts, the difference between each relational condition and NoR separately for measure.

Dehumanization of the outgroup in HN was significantly greater in NoR than in CSR,  $t(254) = 2.77, p = .006$ , EMR  $t(254) = 3.17, p = .002$  and, marginally, MPR,  $t(254) = 1.94, p = .055$ . It did not differ from AR inferior,  $t(254) = 0.98, p = .328$  or AR superior,  $t(254) = 0.91, p = .365$ .

Dehumanization of the outgroup in HU was significantly greater in NoR than in CSR  $t(254) = 2.01, p = .045$ , EMR,  $t(254) = 1.97, p = .050$ , MPR,  $t(254) = 2.72, p = .007$ , and AR inferior:  $t(254) = 6.02, p < .001$ . In AR superior, dehumanization of the outgroup in HU was higher than in NoR,  $t(254) = -2.48, p = .014$ .

Dehumanization of the outgroup measured by the attribution of words was significantly greater in NoR than in CSR,  $t(254) = 2.20, p = .028$ , EMR,  $t(254) = 2.75, p = .006$ , MPR,  $t(254) = 2.48, p = .014$ , and AR inferior,  $t(254) = 2.26, p = .025$ . It did not differ from AR superior,  $t(254) = 1.51, p = .131$ .

In order to understand the dynamic played by status in the dehumanization of the outgroup, we then proceeded to test the difference between AR superior and AR inferior. Again, we found that participants dehumanized the outgroup to a greater extent in AR superior than in AR inferior,  $t(254) = -4.10, p < .001, \eta^2 = .062$ . More importantly, when looking at the dimensions specifically, we found that outgroup dehumanization was only higher in AR superior than in AR inferior in the HU dimension,  $t(254) = -8.31, p < .001$ , but not in HN,  $t(254) = -0.07, p = .948$ , or in words,  $t(254) = -0.72, p = .474$ . In fact, when looking at the table below one can see that participants in a AR superior position attribute more HU to their own group than to the lower status outgroup, whereas participants in a AR inferior position

attribute more HU to the higher status outgroup than to their own group. Participants in both AR superior and AR inferior relations, attributed more HN and words to their own group than to the outgroup.

*Table 36.* Means (and standard deviations) of HN, HU, word attributions to the Seibava and the Portuguese and outgroup dehumanization according to the type of relation.

	Seibava			Portuguese			Outgroup dehumanization		
	HN	HU	Words	HN	HU	Words	HN	HU	Words
CSR	5.61 <sup>bc,x</sup> (1.21)	4.90 <sup>b,x</sup> (0.99)	6.76 <sup>a,x</sup> (1.28)	5.55 <sup>b,x</sup> (1.28)	5.11 <sup>abc,x</sup> (1.01)	7.35 <sup>a,y</sup> (1.28)	-0.05 <sup>ab</sup> (0.66)	.21 <sup>b</sup> (0.61)	0.59 <sup>a</sup> (1.20)
AR superior	4.78 <sup>ab,x</sup> (1.01)	4.21 <sup>a,x</sup> (1.22)	6.29 <sup>a,x</sup> (1.41)	5.10 <sup>ab,y</sup> (1.02)	5.51 <sup>b,y</sup> (0.93)	7.10 <sup>a,y</sup> (1.25)	0.32 <sup>ab</sup> (1.00)	1.30 <sup>c</sup> (1.41)	0.81 <sup>a</sup> (1.62)
AR inferior	4.65 <sup>ab,x</sup> (1.00)	5.33 <sup>b,x</sup> (1.02)	6.24 <sup>a,x</sup> (1.62)	4.95 <sup>ab,y</sup> (1.16)	4.57 <sup>a,y</sup> (1.14)	6.81 <sup>a,y</sup> (1.23)	0.31 <sup>ab</sup> (1.16)	-.76 <sup>a</sup> (1.46)	0.57 <sup>a</sup> (1.74)
EMR	5.62 <sup>c,x</sup> (1.07)	5.00 <sup>b,x</sup> (1.16)	7.04 <sup>a,x</sup> (1.50)	5.51 <sup>b,x</sup> (1.30)	5.22 <sup>bc,x</sup> (1.08)	7.49 <sup>a,y</sup> (1.26)	-0.11 <sup>b</sup> (0.80)	.24 <sup>b</sup> (1.03)	0.45 <sup>a</sup> (1.10)
MPR	4.95 <sup>b,x</sup> (0.94)	4.94 <sup>b,x</sup> (0.86)	6.68 <sup>a,x</sup> (1.27)	5.07 <sup>ab,x</sup> (1.09)	4.98 <sup>abc,x</sup> (0.89)	7.18 <sup>a,y</sup> (0.88)	0.11 <sup>ab</sup> (0.69)	.04 <sup>b</sup> (0.73)	0.50 <sup>a</sup> (0.98)
NoR	4.23 <sup>a,x</sup> (0.99)	4.12 <sup>a,x</sup> (1.06)	6.19 <sup>a,x</sup> (1.75)	4.73 <sup>a,y</sup> (0.95)	4.82 <sup>ac,y</sup> (0.95)	7.48 <sup>a,y</sup> (1.10)	0.50 <sup>a</sup> (1.17)	.69 <sup>bc</sup> (1.27)	1.29 <sup>a</sup> (1.99)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Seibava and the Portuguese on the same measure within the same condition indicate significant differences in humanness attributions to the Seibava and the Portuguese.

Analyses were run entering attitude towards the ingroup ( $M = 47.62$ ;  $SD = 40.05$ ) and attitude towards the outgroup ( $M = 44.91$ ;  $SD = 40.19$ ) as covariates. Hence, a 2 (group: Seibava vs. Portuguese) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as between subject factor, group and type of measure as within-subjects and attitudes towards each group as covariates was conducted on the attribution of humanness to the groups.

A significant main effect was found for attitude towards the outgroup,  $F(2,249) = 49.44$ ,  $p < .001$ ,  $\eta_p^2 = .166$ . Significant interactions were found between attitude towards the ingroup and type of measure,  $F(1.34,333.13) = 3.71$ ,  $p = .042$ ,  $\eta_p^2 = .015$ , attitude towards the outgroup and type of measure,  $F(1.34,333.13) = 14.31$ ,  $p < .001$ ,  $\eta_p^2 = .054$ , attitude towards the outgroup, group and type of measure,  $F(1.87,466.69) = 3.93$ ,  $p = .023$ ,  $\eta_p^2 = .016$ .

More importantly, when controlling for attitudes, the interaction between group, type of relation and type of measure remained significant,  $F(9.37,466.69) = 5.55$ ,  $p < .001$ ,  $\eta^2 = .014$ .

Regarding identification with the ingroup ( $M = 5.18$ ;  $SD = 1.51$ ) and with the outgroup ( $M = 4.09$ ;  $SD = 1.79$ ), a 2 (group: Seibava vs. Portuguese) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as between subject factor, group and type of measure as within-subjects and identification with each group as covariates, was conducted on the attribution of humanness to the groups.

Significant main effects were found for identification with the ingroup,  $F(1,240) = 13.15$ ,  $p < .001$ ,  $\eta_p^2 = .052$ , and for identification with the outgroup,  $F(1,240) = 11.87$ ,  $p = .001$ ,  $\eta_p^2 = .047$ . Significant interactions were found between identification with the ingroup and group,  $F(1,240) = 6.58$ ,  $p = .011$ ,  $\eta_p^2 = .027$ , type of measure,  $F(1.33, 319.71) = 9.47$ ,  $p = .001$ ,  $\eta_p^2 =$



.038, group and measure,  $F(1.89,452.93) = 3.54, p = .032, \eta_p^2 = .015$ . Identification with the outgroup only significantly interacted with group,  $F(1,240) = 11.50, p = .001, \eta_p^2 = .046$ .

More importantly, the interaction between group, type of relation and type of measure remained significant,  $F(9.44,452.93) = 5.39, p < .001, \eta^2 = .019$ .

### ***5.3.2.3. Attitude towards the groups.***

A 2 (group: Seibava vs. Portuguese) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as a between-subjects factor, group and type of measure as within-subjects factors was conducted on attitudes towards the groups.

No significant main effect of group,  $F(1,251) = 1.59, p = .209, \eta_p^2 = .006$ , as well as no significant interaction between group and relation were found,  $F < 0.78$ .

A significant main effect of relation was found,  $F(5,251) = 7.26, p < .001, \eta_p^2 = .126$ . Simple mean comparisons showed that attitudes were more positive in CSR than in AR inferior and NoR. Attitudes were also more positive in EMR than AR inferior and NoR (see table 37).

Table 37. Means (and standard deviations) of attitude towards the Seibava and the Portuguese as a function of type of relation.

	Attitudes	
	Seibava	Portuguese
CSR	59.61 (44.17) <sup>b,x</sup>	68.54 (32.21) <sup>b,x</sup>
AR superior	47.45 (36.23) <sup>ab,x</sup>	42.90 (42.63) <sup>ac,x</sup>
AR inferior	27.46 (39.51) <sup>a,x</sup>	28.83 (48.21) <sup>a,x</sup>
EMR	58.00 (35.66) <sup>b,x</sup>	59.31 (33.80) <sup>bc,x</sup>
MPR	45.73 (37.74) <sup>ab,x</sup>	48.05 (34.86) <sup>abc,x</sup>
NoR	29.48 (37.51) <sup>a,x</sup>	36.71 (35.80) <sup>ac,x</sup>

Note: <sup>abc</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Seibava and the Portuguese on the same condition indicate significant differences between attitudes towards the Seibava and the Portuguese.

#### 5.3.2.4. Representation of the intergroup situation.

A 3 (groups' representation: one group vs. two groups vs. separate individuals) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs. MPR vs. NoR) mixed GLM with type of relation as a between-subjects factor and the other factor as within-subjects was conducted.

A main effect of groups' representation was found,  $F(1.63, 402.23) = 57.98, p < .001, \eta_p^2 = .190$ . Type of relation did not yield a significant main effect,  $F(5,247) = 1.11, p = .354, \eta_p^2 = .022$ .

A significant interaction between groups' representation and type of relation was found,  $F(8.14, 402.23) = 15.27, p < .001, \eta_p^2 = .236$  (see Table 38). Simple mean comparisons

showed that participants perceived the groups as “one group” to a lower extent in NoR than in all other relations. Participants also perceived the groups as “two groups” to a greater extent in NoR than all other relations, and to a greater extent in AR inferior than CSR. In CSR, as predicted, groups were perceived more as “one group” than “two groups” or “separate individuals”; in EMR, groups were perceived more as “one group” than “two groups” or “separate individuals” and more as “two groups” than “separate individuals”; in AR inferior, AR superior and MPR groups were perceived less as “separate individuals” than “one group” or “two groups”. In NoR, groups were perceived more as “two groups” than “one group” or “separate individuals” and more as “separate individuals” than “one group”.

*Table 38.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	5.16 (1.91) <sup>b,x</sup>	2.98 (1.73) <sup>b,y</sup>	2.28 (1.78) <sup>a,y</sup>
AR superior	4.61 (1.81) <sup>b,y</sup>	3.45 (2.13) <sup>bc,y</sup>	2.16 (1.29) <sup>a,x</sup>
AR inferior	4.18 (2.22) <sup>b,y</sup>	4.40 (2.10) <sup>c,y</sup>	2.30 (1.76) <sup>a,x</sup>
EMR	5.02 (2.24) <sup>b,x</sup>	3.25 (2.30) <sup>bc,y</sup>	1.94 (1.44) <sup>a,z</sup>
MPR	4.15 (2.21) <sup>b,y</sup>	3.78 (2.43) <sup>bc,y</sup>	2.28 (1.85) <sup>a,x</sup>
NoR	1.73 (1.55) <sup>a,y</sup>	6.43 (0.97) <sup>a,x</sup>	2.86 (2.14) <sup>a,z</sup>

Note: <sup>abc</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xyz</sup> Different superscripts between representations on the same condition indicate significant differences between representations.

The “one group” representation did not significantly predict outgroup dehumanization, neither in HN,  $\beta = -.06$ ,  $t(251) = -0.99$ ,  $p = .324$ ,  $R^2 = .00$ , nor in HU,  $\beta = -.08$ ,  $t(251) = -$

1.28,  $p = .203$ ,  $R^2 = .01$ . However, it significantly predicted outgroup dehumanization in the attribution of words,  $\beta = -.19$ ,  $t(251) = -3.09$ ,  $p = .002$ ,  $R^2 = .04$ . Therefore, the more participants perceived the ingroup and the outgroup as constituting one single group, the less they dehumanized outgroup members in terms of words

We ran regression analyses to test if each relational condition separately predicted a “one group” representation. CSR,  $\beta = .30$ ,  $t(261) = 5.03$ ,  $p < .001$ ,  $R^2 = .09$ , EMR,  $\beta = .25$ ,  $t(261) = 4.19$ ,  $p < .001$ ,  $R^2 = .06$ , and MPR (negatively),  $\beta = -.13$ ,  $t(261) = -2.05$ ,  $p = .041$ ,  $R^2 = .02$ , significantly predicted the “one group” representation. AR superior,  $\beta = .02$ ,  $t(261) = 0.32$ ,  $p = .746$ ,  $R^2 = .00$  and AR inferior,  $\beta = .03$ ,  $t(261) = 0.49$ ,  $p = .628$ ,  $R^2 = .00$ , did not.

We also tested if the relationship between CSR, EMR and MPR and outgroup dehumanization was mediated by a “one group” representation. There were significant indirect effects of CSR,  $\beta = -.16$ ,  $SE = 0.07$ , 95% CI [-0.32,-0.05] and EMR,  $\beta = -.13$ ,  $SE=0.06$ , 95% CI [-0.29,-0.04] on outgroup dehumanization in words through a “one group” representation. Both CSR and EMR reduced outgroup dehumanization in words through a “one group” representation.

### **5.3.2.5. Valence and collaboration.**

Two 2 (group: ingroup vs outgroup) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs. MPR vs. NoR) mixed GLMs with type of relation as between-subjects factor and the group as within-subjects were conducted separately for valence and collaboration.

A main effect of type of relation was found for perceived valence of the relation,  $F(5, 242) = 2.53$ ,  $p = .030$ ,  $\eta_p^2 = .050$ . CSR was perceived as more positive than NoR but no other difference was significant (see table 39).

Table 39. Means (and standard deviations) of perceived valence of the relation according to the type of relation.

	Valence
CSR	6.26 (1.43) <sup>b</sup>
AR superior	5.58 (1.40) <sup>ab</sup>
AR inferior	5.54 (1.10) <sup>ab</sup>
EMR	6.06 (1.22) <sup>ab</sup>
MPR	5.80 (1.38) <sup>ab</sup>
NoR	5.28 (2.13) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

A main effect of type of relation was also found for perceived collaboration in the relation,  $F(2, 241) = 36.01, p < .001, \eta_p^2 = .428$ . NoR was perceived as less collaborative than all relational conditions (see table 40).

Table 40. Means (and standard deviations) of perceived collaboration in the relation according to the type of relation.

	Collaboration
CSR	6.41 (0.96) <sup>b</sup>
AR superior	5.75 (1.18) <sup>b</sup>
AR inferior	5.63 (1.30) <sup>b</sup>
EMR	6.04 (1.38) <sup>b</sup>
MPR	5.93 (1.27) <sup>b</sup>
NoR	3.75 (0.70) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

### 5.3.2.6. Identification with the groups.

To test if identification varied as a function of the manipulation, we conducted a repeated measures analysis of variance with type of relation as between- subject factor on the level of ingroup and outgroup identification.

Significant main effects of type of relation,  $F(5, 242) = 6.69$ ,  $p < .001$ ,  $\eta_p^2 = .121$ , and group,  $F(1, 242) = 86.52$ ,  $p < .001$ ,  $\eta_p^2 = .263$ , were found.

Furthermore, a significant interaction was found between group and type of relation,  $F(5, 242) = 5.71$ ,  $p < .001$ ,  $\eta_p^2 = .106$  (see Table 41). Simple mean comparisons (Bonferroni adjustment) showed that participants identified with the ingroup to a greater extent than with the outgroup in all conditions (although only marginally in AR inferior,  $p = .068$ ). Ingroup identification was lower in AR inferior and in NoR than in other conditions, whereas outgroup identification was lower in NoR than in other conditions.

Table 41. Means (and standard deviations) of identification with the Seibava and the Portuguese according to the type of relation.

	Identification	
	Seibava	Portuguese
CSR	4.93 (1.55) <sup>c,x</sup>	5.67 (1.29) <sup>b,y</sup>
AR superior	3.94 (1.53) <sup>bc,x</sup>	5.14 (1.44) <sup>ab,y</sup>
AR inferior	3.64 (1.97) <sup>b,x</sup>	4.18 (1.85) <sup>a,x</sup>
EMR	4.60 (1.61) <sup>bc,x</sup>	5.28 (1.39) <sup>b,y</sup>
MPR	4.32 (1.67) <sup>bc,x</sup>	5.33 (1.35) <sup>b,y</sup>
NoR	3.00 (1.73) <sup>a,x</sup>	5.37 (1.36) <sup>b,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Seibava and the Portuguese on the same condition indicate significant differences between identification with the Seibava and the Portuguese.

### 5.3.3. Discussion

As in the previous study, participants attributed less overall humanness to outgroup than to ingroup members. Type of relation was again found to moderate the dehumanization of outgroup members.

As in the previous study, the “one group” representation only predicted lower outgroup dehumanization in the attribution of words, but not on the measures of human nature and human uniqueness. Moreover, only in CSR and EMR, was outgroup dehumanization in words reduced by a “one group” representation. Therefore, it cannot account for the reduction of outgroup dehumanization in other relational conditions.

When addressing the reduction of outgroup dehumanization in each type of relation when compared to the absence of relation, the same overall pattern was found for all relations in all measures of humanness used, except for AR superior relations.

The dimension in which outgroup dehumanization was reduced when compared to the absence of relation differed according to the relative status position of groups. AR superior and AR inferior did not reduce outgroup dehumanization in HN when compared to no relation. AR inferior also did not reduce outgroup dehumanization in words. More importantly, we found that outgroup dehumanization was higher in HU in AR superior than when there was no relation between the groups.

Moreover, when looking at the difference between AR superior and AR inferior, we found that participants in AR superior dehumanized the outgroup in HU more than participants in AR inferior. As in the previous study, participants in an AR superior position attributed more HU to their own group than to the lower status outgroup, whereas participants in a AR inferior position attribute more HU to the higher status outgroup than to their own group. Unlike study 4, participants attributed more HN and humanness in words to their ingroup than to the outgroup regardless of being placed in a higher or lower status position. Low status participants, while admitting inferiority on HU, attributed more HN to their group than to the high status outgroup. Some studies (e.g. Reichl, 1997) found that low status groups positively differentiate themselves in dimensions not related to status, such as warmth. This suggests that members of low status groups use a social creativity strategy allowing them to dehumanize the high status group as well. Research on uniquely human emotions (e.g. Miranda et al., 2014) had already provided evidence of social creativity strategies in low status groups. Moreover, Cambon and colleagues (2014) found that this is more likely to occur when the groups share a cooperative view of the intergroup relation. This may have



been the case in this study, given that AR relations were perceived as positive and collaborative to the same extent as all other relations.

The next study in this chapter provides a further test of the moderating effect of social relations on outgroup dehumanization by using a fictional intergroup setting.

#### **5.4. Study 6**

This study provided a conceptual replication of the previous two studies, using fictional characters (i.e. Humans and Aliens) instead of national groups and an ethnic outgroup of unknown origin. One could assume that, by using human groups, the dehumanization baseline (the absence of relation) already entails some humanization of outgroup members, just by the fact that these belong to the human category even if they are of different ethnic origin. What we want to test in this study is if a relation with fictional outgroup members would have the potential to humanize even outgroups that by definition are not part of the human category in the conventional sense (aliens). Aliens have been used in previous research on outgroup dehumanization (Castano & Giner-Sorolla, 2006), and it is known that people often anthropomorphize non-human agents such as pats or spirits. In this study, we would like to test whether participation in a relation with the ingroup is one of the factors that are responsible for such attribution of humanness to non-human agents, as it would add particularly strong evidence to the claim of the key role of social relations in the humanization of groups. Moreover, another objective of this study was to use a different participant population (US Mechanical Turk workers) in order to assure the generalizability of the results of studies 1, 4 and 5 which were all run with southern European participants.

### **5.4.1. Method**

#### ***5.4.1.1. Participants.***

411 participants from the United States completed the experiment through Amazon's Mechanical Turk (Mturk). Each of them was randomly, but not equally, assigned to one of the following 5 conditions (type of relation: communal sharing vs. authority ranking vs. equality matching vs. market pricing vs. no relation) in a between-subjects design. In order to guarantee an adequate distribution for the hypothesis test, the randomization was programmed to assure that the probability to end up in the non-relational control condition was twice as high (resulting in 27.2% of participants in this condition) than that of ending up in each of the relational conditions (between 13.6 and 15.3%). From those 411 participants, 116 were excluded because they did not respond to the main dependent variables and one participant reported to be underage (13 years old). Hence, data of 294 participants (184 females, mean age=35.95;  $SD = 12.72$ ) entered the analysis.

#### ***5.4.1.2. Procedure, materials and measures.***

This study was conducted online using Qualtrics software and justified by a cover story stating that the survey intended to understand how individuals form impressions of fictional characters. Participants were recruited via Mturk and were paid 65 cents (USD) for their participation.

Part of the manipulation texts in this study were identical to those used in the previous studies (after translation from Portuguese to English and back translation).

However, some changes were introduced as following: participants were presented with a text describing fictional characters and their relationships, during which they were asked to form an impression about them. This text referred to a future time in which Earth was

colonized by an alien population called Zyqrat. With time, this population was said to have entered in contact with Humans and either established a relation (CSR, EMR, MPR, AR superior, AR inferior) or no relation (NoR) with the Human population.

The same measures were used as in study 5, but referring to the target groups used in the current study (Humans and Zyqrat).

After completing a demographic survey, participants were debriefed.

## **5.4.2. Results**

### ***5.4.2.1 Manipulation check.***

Type of relation,  $F(5,288) = 14.01, p < .001, \eta_p^2 = .196$ , and type of sentence,  $F(3.15, 908.46) = 48.66, p < .001, \eta_p^2 = .145$ , had significant main effects on the extent to which participants considered that each sentence described the relation. More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(15.77,908.46) = 126.74, p < .001, \eta_p^2 = .688$  (table 42). Planned contrasts showed that participants chose CS sentences to a greater extent in the CSR than in other conditions,  $t(288) = 9.17, p < .001$ ; MP sentences to a greater extent in the MPR than in other conditions,  $t(288) = 9.60, p < .001$ , AR sentences to a greater extent in AR relations than in other conditions,  $t(288) = 27.62, p < .001$ , EM sentences to a greater extent in EMR than in other conditions,  $t(288) = 12.14, p < .001$ , and NoR sentences in NoR than in other conditions,  $t(288) = 31.33, p < .001$ .

Table 42. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation, as a function of type of relation.

	Type of sentence				
	CS	AR	EM	MP	NR
CSR	6.05 (1.04) <sup>c,z</sup>	2.21 (1.26) <sup>a,wy</sup>	3.66 (1.50) <sup>c,x</sup>	2.53 (1.32) <sup>b,y</sup>	1.75 (0.68) <sup>b,w</sup>
AR superior	3.53 (1.51) <sup>b,xy</sup>	5.88 (0.86) <sup>b,z</sup>	3.31 (1.48) <sup>c,xy</sup>	3.67 (1.36) <sup>a,y</sup>	2.68 (1.27) <sup>c,x</sup>
AR inferior	3.75 (1.38) <sup>b,y</sup>	6.14 (0.67) <sup>b,z</sup>	3.35 (1.21) <sup>c,y</sup>	3.64 (1.13) <sup>a,y</sup>	2.42 (0.96) <sup>c,x</sup>
EMR	6.05 (1.09) <sup>c,y</sup>	1.78 (0.99) <sup>ac,x</sup>	5.85 (0.90) <sup>b,y</sup>	3.52 (1.53) <sup>a,z</sup>	2.02 (1.04) <sup>b,x</sup>
MPR	3.78 (1.81) <sup>b,y</sup>	2.10 (1.35) <sup>ac,x</sup>	3.89 (1.46) <sup>c,y</sup>	5.24 (1.21) <sup>c,z</sup>	2.64 (1.01) <sup>c,x</sup>
NoR	2.27 (1.46) <sup>a,x</sup>	1.76 (1.27) <sup>c,w</sup>	2.00 (1.21) <sup>a,wx</sup>	2.44 (1.40) <sup>b,xz</sup>	6.40 (1.02) <sup>a,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xyz</sup> Different superscripts between each measure on the same condition indicate significant differences on the extent to which participants considered that each type of sentence described the relation.

#### 5.4.2.2. Outgroup dehumanization.

As in the previous studies, three measures of humanness were used: HN, HU, and human and animal words.

Four indices were computed: HN of the ingroup ( $\alpha = .77$ ), HN of the outgroup ( $\alpha = .82$ ), HU of the ingroup ( $\alpha = .79$ ) and HU of the outgroup ( $\alpha = .75$ ).

Regarding human and animal words, we first computed four indices: human related words attributed to the ingroup ( $M = 6.66$ ;  $SD = 1.67$ ), animal related words attributed to the ingroup ( $M = 1.80$ ;  $SD = 1.49$ ), human related words attributed to the outgroup ( $M = 5.20$ ;  $SD = 1.92$ ) and animal related words attributed to the outgroup ( $M = 3.10$ ;  $SD = 1.87$ ). Following the

same procedure described before, a composite measure of humanness was obtained for the ingroup ( $M = 7.43$ ;  $SD = 1.54$ ) and the outgroup ( $M = 6.05$ ;  $SD = 1.87$ ).

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 6 (type of relation: CSR vs. AR superior vs. AR inferior vs. EMR vs MPR vs. NoR) mixed GLM with type of relation as a between-subjects factor and the other two as within-subjects was conducted (see Table 43).

A significant main effect of group was found,  $F(1,288) = 79.13$ ,  $p < .001$ ,  $\eta_p^2 = .216$ . Overall, participants attributed more humanness to the ingroup ( $M = 6.18$ ;  $SD = 0.91$ ) than to the outgroup ( $M = 5.59$ ;  $SD = 1.08$ ). A significant main effect of type of relation,  $F(5,288) = 12.72$ ,  $p < .001$ ,  $\eta_p^2 = .181$  and a significant main effect of type of measure were found,  $F(1.34,386.04) = 268.38$ ,  $p < .001$ ,  $\eta_p^2 = .482$ . Significant interactions were found between group and type of measure,  $F(8.21,472.72) = 89.34$ ,  $p < .001$ ,  $\eta_p^2 = .148$ ; and group and type of relation,  $F(5,288) = 7.30$ ,  $p < .001$ ,  $\eta_p^2 = .113$ . A marginally significant interaction between type of relation and type of measure was also found,  $F(6.70,386.04) = 1.90$ ,  $p = .072$ ,  $\eta_p^2 = .032$ .

More importantly, a significant interaction between group, type of relation and type of measure was found,  $F(8.21,472.72) = 10.01$ ,  $p < .001$ ,  $\eta^2 = .029$  (see table 43). To test if the attribution of humanness to each group was greater in relational conditions than in the absence of relation, we ran planned contrast analyses on the attribution of overall humanness and then separately for measure.

We first tested whether the attribution of humanness to the outgroup was lower in NoR than in all conditions taken together. Humanness attributions to the outgroup were significantly lower in NoR than in all the other conditions taken together,  $t(283) = -3.37$ ,  $p = .001$ . Separately for measure, HN attributed to outgroup members was lower in NoR than in

all relations,  $t(283) = -3.35, p = .001$ , HU,  $t(283) = -2.60, p = .010$ , and in words,  $t(283) = -2.25, p = .025$ .

Then we analyzed effects on humanness attributions to the ingroup. They were not significantly different in NoR than in all the other conditions taken together,  $t(283) = -1.46, p = .146$ . However, humanness attributed to ingroup members was lower in NoR than in all relations regarding HU,  $t(283) = -3.05, p = .003$ , marginally in HN,  $t(283) = -1.72, p = .088$  but not different in words,  $t(283) = 0.68, p = .495$ .

As predicted, the outgroup was more humanized in relational conditions than in the absence of a relation. The ingroup, as in studies 4 and 5, was also more humanized in relational conditions than in the absence of a relation. This pattern was found for both HU and HN attributions (although only marginally) but not for the attribution of humanness in words.

To verify if there would still be effects on outgroup dehumanization, planned contrasts were run. Therefore, we tested whether dehumanization of the Zyqrat was higher in the NoR condition than in all the other conditions taken together. This contrast was significant,  $t(288) = 2.01, p < .045, \eta^2 = .014$ . As expected, dehumanization of the Zyqrat was higher in the NoR than in the all the relational conditions taken together.

Additionally, we ran planned contrasts separately for each relational condition against NoR. These showed that dehumanization of the outgroup was only greater in NoR than in AR inferior,  $t(288) = 5.04, p < .001$ , but did not differ from CSR,  $t(288) = 1.53, p = .128$ , EMR,  $t(288) = 1.39, p = .168$ , AR superior,  $t(288) = 1.17, p = .243$ , and MPR,  $t(288) = .24, p = .808$ . Unlike studies 4 and 5, only AR inferior reduced outgroup dehumanization when compared with NoR.

We also tested if outgroup dehumanization differed between relational conditions taken together and NoR, separately for the three measures. This contrast was significant for humanness in words,  $t(288) = 2.52, p = .012, \eta^2 = .022$ , marginally significant for HN,

$t(288) = 1.81, p = .071, \eta^2 = .011$  and not significant for HU,  $t(288) = -0.37, p = .710, \eta^2 = .000$ .

We then ran planned contrasts to examine whether outgroup dehumanization was higher in NoR than in each relational condition, separately for the three measures.

Dehumanization of the outgroup in HN was significantly greater in NoR than in CSR,  $t(288) = 2.01, p = .045$ , EMR,  $t(288) = 2.44, p = .015$  and AR superior,  $t(288) = 2.16, p = .031$ . No difference was found between NoR and MPR,  $t(288) = 0.17, p = .866$ , and AR inferior,  $t(288) = -0.58, p = .568$ .

Regarding HU, dehumanization of the outgroup was significantly lower in NoR than in AR superior,  $t(288) = -3.93, p < .001$  and higher than in AR inferior,  $t(288) = 4.45, p < .001$ . No difference was found between NoR and CSR,  $t(288) = 0.08, p = .935$ , EMR,  $t(288) = -0.47, p = .654$ , and MPR,  $t(288) = 1.34, p = .181$ .

Concerning the attribution of words, dehumanization of the outgroup was significantly greater in NoR than in AR inferior,  $t(288) = 6.19, p < .001$  and MPR,  $t(288) = 1.17, p = .007$ . No difference was found between NoR and CSR,  $t(288) = 1.28, p = .204$ , EMR,  $t(288) = 1.09, p = .277$  and AR superior,  $t(288) = -0.90, p = .370$ .

Again, in AR, the relative position of ingroup and outgroup members, affected the dimension in which outgroup dehumanization occurred. Placing participants' ingroup in the superior AR position increased outgroup dehumanization compared to NoR on the HU dimension. On the other hand, placing participants' ingroup in an inferior AR position only reduced outgroup dehumanization on the HU dimension and words attribution.

As in the previous studies, we also examined the difference between AR superior and AR inferior. We found that participants dehumanized the outgroup to a greater extent in AR superior than in AR inferior,  $t(288) = -5.37, p < .001, \eta^2 = .091$ . More importantly, when looking at the dimensions specifically, we found that outgroup dehumanization was

significantly higher in AR superior than in AR inferior on the HU dimension,  $t(288) = -7.31, p < .001, \eta^2 = .156$ , as well as in the attribution of words,  $t(288) = -6.11, p < .001, \eta^2 = .115$ . However, dehumanization of the outgroup was significantly higher in AR inferior than in AR superior in the HN dimension,  $t(288) = 2.41, p = .017, \eta^2 = .020$ .

*Table 43.* Means (and standard deviations) of HN, HU, word attributions to the Zyqrat and Humans and outgroup dehumanization according to the type of relation.

	Zyqrat			Human			Outgroup dehumanization		
	HN	HU	Words	HN	HU	Words	HN	HU	Words
CSR	6.04 <sup>b,x</sup> (0.95)	6.01 <sup>b,x</sup> (0.90)	6.51 <sup>a,x</sup> (1.57)	6.26 <sup>b,x</sup> (0.79)	5.90 <sup>a,x</sup> (0.90)	7.94 <sup>b,y</sup> (1.33)	0.23 <sup>a</sup> (0.89)	-0.11 <sup>c</sup> (0.92)	1.43 <sup>b</sup> (1.33)
AR superior	5.12 <sup>a,x</sup> (1.21)	4.60 <sup>a,x</sup> (0.94)	5.51 <sup>a,x</sup> (2.04)	5.30 <sup>a,x</sup> (1.35)	5.45 <sup>ac,y</sup> (1.00)	7.75 <sup>b,y</sup> (1.39)	0.18 <sup>a</sup> (1.58)	0.85 <sup>b</sup> (1.02)	2.24 <sup>b</sup> (2.49)
AR inferior	4.55 <sup>a,x</sup> (1.51)	5.76 <sup>bc,x</sup> (0.99)	6.33 <sup>a,x</sup> (1.43)	5.39 <sup>a,y</sup> (0.96)	4.63 <sup>b,y</sup> (1.23)	5.98 <sup>a,x</sup> (1.66)	0.84 <sup>a</sup> (1.66)	-1.13 <sup>a</sup> (1.60)	-0.35 <sup>a</sup> (2.14)
EMR	6.02 <sup>b,x</sup> (1.10)	5.95 <sup>b,x</sup> (0.93)	6.28 <sup>a,x</sup> (1.84)	6.15 <sup>bc,x</sup> (0.95)	5.97 <sup>a,x</sup> (0.93)	7.78 <sup>b,y</sup> (1.31)	0.13 <sup>a</sup> (0.64)	0.01 <sup>c</sup> (0.74)	1.50 <sup>b</sup> (1.57)
MPR	4.93 <sup>a,x</sup> (1.05)	5.25 <sup>ac,x</sup> (1.13)	6.08 <sup>a,x</sup> (1.60)	5.60 <sup>ac,y</sup> (0.89)	5.47 <sup>ac,x</sup> (0.84)	7.56 <sup>b,y</sup> (1.14)	0.67 <sup>a</sup> (1.06)	0.22 <sup>bc</sup> (1.25)	1.48 <sup>b</sup> (1.66)
NoR	4.81 <sup>a,x</sup> (1.19)	5.17 <sup>a,x</sup> (1.12)	5.63 <sup>a,x</sup> (1.89)	5.52 <sup>a,y</sup> (0.95)	5.07 <sup>bc,x</sup> (1.12)	7.53 <sup>b,y</sup> (1.43)	0.71 <sup>a</sup> (1.32)	-0.09 <sup>c</sup> (1.45)	1.90 <sup>b</sup> (2.11)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Zyqrat and Humans on the same measure within the same condition indicate significant differences between humanness attributions to the Zyqrat and Humans.



In order to control for the effect of attitudes towards the ingroup ( $M = 52.75$ ;  $SD = 41.76$ ) and towards the outgroup ( $M = 44.40$ ;  $SD = 40.63$ ) on the attribution of humanness to groups, a 2 (group: Zyqrat vs. Humans) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as a between-subjects factor, group and type of measure as within-subjects factors and attitudes towards each group as covariates was conducted.

Significant main effects were found for attitude towards the ingroup,  $F(1,286) = 25.60$ ,  $p < .001$ ,  $\eta_p^2 = .082$ , and attitude towards the outgroup,  $F(1,286) = 55.57$ ,  $p < .001$ ,  $\eta_p^2 = .163$ . Significant interactions with group were found for attitude towards the ingroup,  $F(1,286) = 53.64$ ,  $p < .001$ ,  $\eta_p^2 = .158$ , and towards the outgroup,  $F(1,286) = 58.81$ ,  $p < .001$ ,  $\eta_p^2 = .171$ , and between type of measure and attitude towards the ingroup,  $F(1.33,380.77) = 4.32$ ,  $p = .028$ ,  $\eta_p^2 = .015$ .

More importantly, when controlling for attitudes, the interaction between group, type of measure and type of relation remained significant,  $F(8.17,467.37) = 9.59$ ,  $p < .001$ ,  $\eta^2 = .035$

In order to control for the effects of identification with the ingroup ( $M = 5.88$ ;  $SD = 1.41$ ) and identification with the outgroup ( $M = 3.20$ ;  $SD = 1.85$ ) on the attribution of humanness to the groups, these variables were introduced as covariates.

A 2 (group: Zyqrat vs. Humans) x 6 (type of relation: CSR vs. AR superior vs AR inferior vs EMR vs MPR vs NoR) x 3 (type of measure: HN vs HU vs humanness in words) mixed GLM with type of relation as between subject factor, group and type of measure as within-subjects and identification with each group as covariates was conducted.

A significant main effect was found for identification with the ingroup,  $F(1,286) = 32.48$ ,  $p < .001$ ,  $\eta_p^2 = .102$ . Both identification with the ingroup,  $F(1,286) = 25.90$ ,  $p < .001$ ,  $\eta_p^2 = .083$  and identification with the outgroup,  $F(1,286) = 6.71$ ,  $p = .010$ ,  $\eta_p^2 = .023$ , significantly interacted with group.

More importantly, when controlling for identification, the interaction between group, type of relation and type of measure was still significant,  $F(8.23,470.60) = 9.94, p < .001, \eta^2 = .029$ .

#### ***5.4.2.3 Attitude towards the groups.***

To verify whether attitudes varied as a function of the manipulation, we conducted a repeated measures GLM with type of relation as a between- subjects factor on the attitudes towards the ingroup and the outgroup.

Significant main effects of relation,  $F(5,288) = 15.31, p < .001, \eta_p^2 = .210$ , and group were found,  $F(1,288) = 10.69, p = .001, \eta_p^2 = .036$ . Participants' attitude towards the ingroup was positive to a greater extent than towards the outgroup.

A significant interaction between group and type of relation was found,  $F(5,288) = 4.05, p = .001, \eta_p^2 = .066$ . Simple mean comparisons (Bonferroni adjustment) in table 44 showed that attitudes towards the ingroup were less positive in AR superior than in CSR, EM and NoR; less positive in AR inferior than in CSR and EMR and more positive in EMR than in MPR and NoR. Attitudes towards the outgroup were more positive in CSR and EMR than in all other conditions. Moreover, in MPR, NoR and AR inferior, participants attitudes towards the ingroup were more positive than towards the outgroup.

Table 44. Means (and standard deviations) of attitude towards the Zyqrat and Humans as a function of type of relation.

	Attitudes	
	Zyqrat	Human
CSR	73.79 (23.74) <sup>c,x</sup>	75.81 (30.06) <sup>a,x</sup>
AR superior	42.60 (43.31) <sup>a,x</sup>	34.88 (49.56) <sup>b,y</sup>
AR inferior	30.64 (54.05) <sup>ab,x</sup>	44.71 (41.45) <sup>b,x</sup>
EMR	76.93 (24.73) <sup>c,x</sup>	80.58 (22.99) <sup>a,x</sup>
MPR	43.56 (38.30) <sup>b,x</sup>	56.76 (30.84) <sup>b,y</sup>
NoR	32.21 (39.61) <sup>b,x</sup>	58.15 (37.12) <sup>b,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Zyqrat and Humans within the same condition indicate significant differences in attitudes towards the Zyqrat and Humans.

#### 5.4.2.4. Representation of the intergroup situation.

To verify whether the representation of groups varied as a function of the manipulation, we conducted a repeated measures GLM with type of relation as a between- subjects factor on groups' representations.

Significant main effects of groups' representation,  $F(1.87, 538.64) = 138.79, p < .001, \eta_p^2 = .325$ , and type of relation,  $F(5,288) = 2.73, p = .020, \eta_p^2 = .045$ , were found.

More importantly, a significant interaction between groups' representation and type of relation was found,  $F(9.35, 538.64) = 22.34, p < .001, \eta_p^2 = .279$  (see Table 45). Simple mean comparisons (Bonferroni adjustment) showed that participants perceived the groups as “one group” to a greater extent in CSR and EMR than in all other conditions. Moreover, they perceived the groups as “one group” less in NoR than in AR inferior. Participants also

perceived the groups as “two groups” to a lower extent in extent in CSR and EMR than in all other conditions. Furthermore, participants perceived the groups as “two groups” to a greater extent in NoR than in AR superior, AR inferior and MPR. In CSR, groups were perceived more as “one group” than two groups” or “separate individuals”; in EMR, groups were perceived less as separate individuals than “one group” or “two groups”; in AR superior and MPR, groups were perceived more as “two groups” than “one group” or “separate individuals”; in AR inferior and NoR, groups were perceived more as “two groups” than “one group” or “separate individuals” and more as “one group” than “separate individuals”.

*Table 45.* Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	5.05 (1.82) <sup>a,x</sup>	3.33 (1.93) <sup>a,y</sup>	2.81 (1.69) <sup>a,y</sup>
AR superior	2.68 (1.70) <sup>bc,y</sup>	5.35 (1.59) <sup>b,x</sup>	2.30 (1.80) <sup>a,y</sup>
AR inferior	2.98 (1.80) <sup>b,x</sup>	5.36 (1.63) <sup>b,y</sup>	1.95 (1.31) <sup>a,z</sup>
EMR	4.56 (1.82) <sup>a,y</sup>	4.28 (1.86) <sup>a,y</sup>	2.67 (1.74) <sup>a,x</sup>
MPR	2.64 (1.82) <sup>bc,y</sup>	5.42 (1.73) <sup>b,x</sup>	2.58 (1.70) <sup>a,y</sup>
NoR	1.75 (1.48) <sup>c,x</sup>	6.65 (1.01) <sup>c,y</sup>	2.71 (1.75) <sup>a,z</sup>

Note: <sup>abc</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xyz</sup> Different superscripts between representations on the same condition indicate significant differences in representations.

In regression analyses, we tested whether the “one group” representation predicted outgroup dehumanization. It negatively predicted outgroup dehumanization in HN,  $\beta = -$

.13,  $t(292) = -2.19$ ,  $p = .029$ ,  $R^2 = .02$ , but it did not in HU,  $\beta = -.04$ ,  $t(292) = -.70$ ,  $p = .486$ ,  $R^2 = .00$ , or in the attribution of words,  $\beta = -.04$ ,  $t(292) = -.71$ ,  $p = .477$ ,  $R^2 = .00$ .

We also tested if each relation (dummy coded) significantly predicted the “one group” representation. CSR,  $\beta = .20$ ,  $t(292) = 7.20$ ,  $p < .001$ ,  $R^2 = .15$ , and EMR,  $\beta = .30$ ,  $t(292) = 5.30$ ,  $p < .001$ ,  $R^2 = .09$ , significantly predicted the “one group” representation. MPR,  $\beta = -.09$ ,  $t(292) = -1.53$ ,  $p = .127$ ,  $R^2 = .01$ , AR superior,  $\beta = -.08$ ,  $t(292) = -1.33$ ,  $p = .186$ ,  $R^2 = .01$  and AR inferior,  $\beta = -.02$ ,  $t(292) = -.35$ ,  $p = .727$ ,  $R^2 = .00$ , did not.

We tested if the relationship between CSR and outgroup dehumanization or between EMR and outgroup dehumanization was mediated by a “one group” representation. A significant negative indirect effect of CSR on outgroup dehumanization in HN,  $\beta = -.16$ ,  $SE = 0.09$ , 95% CI [-0.34, -0.001] was found. CSR reduced outgroup dehumanization in HN through the “one group” representation.

#### **5.4.2.5. Valence and collaboration.**

Two one-way GLMs were conducted on the mean valence and collaboration attributed to the relation between Humans and Zyqrats entering type of relation as a between-subjects factor.

A main effect of type of relation was found for perceived valence of the relation,  $F(5, 263) = 33.41$ ,  $p < .001$ ,  $\eta_p^2 = .388$  (see table 46). CSR and EMR were perceived as more positive than all other conditions, except MPR; NoR was also perceived as less positive than all relational conditions and MPR was perceived as more positive than AR inferior. No other difference was significant.

Table 46. Means (and standard deviations) of perceived valence of the relation according to the type of relation.

	Valence
CSR	6.54 (0.90) <sup>c</sup>
AR superior	5.50 (1.30) <sup>b</sup>
AR inferior	5.25 (1.64) <sup>d</sup>
EMR	6.47 (1.16) <sup>c</sup>
MPR	6.04 (1.11) <sup>bc</sup>
NoR	4.00 (0.74) <sup>a</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

A main effect of type of relation was also found for perceived collaboration in the relation,  $F(5, 258) = 56.71, p < .001, \eta_p^2 = .524$  (table 47). CSR and EMR were perceived as more collaborative than all other conditions and NoR was perceived as less collaborative than all relational conditions. No other difference was significant.

Table 47. Means (and standard deviations) of perceived collaboration in the relation according to the type of relation.

	Collaboration
CSR	6.62 (0.58) <sup>a</sup>
AR superior	5.45 (1.09) <sup>b</sup>
AR inferior	5.35 (1.34) <sup>b</sup>
EMR	6.77 (0.48) <sup>a</sup>
MPR	5.67 (0.95) <sup>b</sup>
NoR	4.00 (0.78) <sup>c</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

#### 5.4.2.6. Identification with the groups.

To test if identification varied as a function of the manipulation, we conducted a repeated measures GLM with type of relation as a between-subjects factor on the level of ingroup and outgroup identification.

Significant main effects of type of relation,  $F(5, 288) = 6.01, p < .001, \eta_p^2 = .09$ , and group,  $F(1, 288) = 349.07, p < .001, \eta_p^2 = .548$ , were found. Participants showed greater identification with the ingroup than the outgroup.

Furthermore, a significant interaction was found between group and type of relation,  $F(5, 288) = 7.57, p < .001, \eta_p^2 = .116$  (see Table 48). Participants identified less with the ingroup in AR superior than in CSR. Participants identified less with the outgroup in NoR than in all relational conditions. Regarding intergroup differences, participants always identified more with the ingroup than the outgroup.

Table 48. Means (and standard deviations) of identification with the Zyqrat and the Human groups according to the type of relation.

	Identification	
	Zyqrat	Human
CSR	3.57 (1.82) <sup>b,x</sup>	6.29 (1.00) <sup>a,y</sup>
AR superior	3.75 (1.74) <sup>b,x</sup>	5.38 (1.74) <sup>b,y</sup>
AR inferior	3.30 (1.77) <sup>b,x</sup>	5.68 (1.57) <sup>ab,y</sup>
EMR	4.09 (1.73) <sup>b,x</sup>	6.23 (1.07) <sup>ab,y</sup>
MPR	3.60 (1.72) <sup>b,x</sup>	5.91 (1.24) <sup>ab,y</sup>
NoR	2.20 (1.66) <sup>a,x</sup>	6.12 (1.41) <sup>ab,y</sup>

Note: <sup>abc</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the Zyqrat and Humans on the same condition indicate significant differences between the Zyqrat and Humans.

### 5.4.3. Discussion

Participants' overall attribution of humanness to outgroup members was lower than towards ingroup members. Moreover, dehumanization of outgroup members was moderated by the type of relation between the groups. As expected, dehumanization of the Zyqrat was higher in the NoR than in the all the relational conditions taken together, but this time the effect varied more across type of relation and type of measure than in the previous studies.

The "one group" representation mediated the reduction of outgroup dehumanization on the HN dimension by CSR. However, given that it did not mediate the effect of any other relation on outgroup dehumanization, recategorization cannot completely account for the reduction of outgroup dehumanization in this study.



The reduction of outgroup dehumanization varied according to the dimension being denied to its members. Outgroup dehumanization was reduced in HN in all relations except MPR and AR inferior.

Unexpectedly, MPR did not reduce the dehumanization of outgroup members in the HN when compared to the absence of relation. Since market pricing relations entail rational analyses and decision-making processes, the Zyqrat as partners in such a relation may have been perceived as being “cold” or mechanical, and therefore low in HN. One can assume that because of this, being part of this relation did not increase perceived HN of outgroup members when compared to no relation. Our reasoning, derived from RMT, proposed that even relations perceived as lacking in warmth, such as MPR, would lead to less dehumanization of outgroup members in HN when compared to the absence of relation, in which others are not seen as potential interaction partners and may be likened to objects. Moreover, according to Wilson and Haslam (2013), HN is seen as the capacity for forming social relations and HU has been characterized by capacities for higher-order consciousness as well as cognitively complex capacities for rationality. A reduction in outgroup dehumanization in MPR would thus be expected in HN, because relational concerns are activated towards outgroup members, and in HU, because of the rationality and cognitive complexity it involves. Admittedly, in this study, MPR only increased the attribution of humanness in words, which addresses what makes us distinct from animals (i.e. human uniqueness) but not our more explicit measures of HU or HN. Moreover, aliens are usually perceived as lacking in warmth and emotional depth, as being colder and more technologically advanced than humans. This could have prevented MP relations to humanize the outgroup in HN.

Regarding the difference between AR relations, we found that participants overall dehumanization of the outgroup was higher in AR superior than in AR inferior. Moreover, when addressing the dimensions specifically, we found that outgroup dehumanization was

higher in HU and in words when the ingroup was in a high status position than when the ingroup was in a low status position, but higher in HN when the ingroup was in a low status than in a high status position. Looking at the difference between groups, in AR superior the ingroup was attributed more HU and humanness in words than the outgroup but no difference was found in HN. In AR inferior, the ingroup was attributed less HU than the outgroup but more HN and no difference was found in the attribution of words. Such as found in previous studies (e.g. Paladino & Vaes, 2009; Rodriguez et al., 2011), both high and low status groups dehumanized the outgroup. The findings regarding the attribution of more HU to the ingroup in a higher status position than outgroup members is consistent with previous studies (Vaes & Paladino, 2010, for a review see Vaes et al., 2012). On the other hand, the superhumanization of the outgroup in HU when its members are in a higher status position than ingroup members is also consistent with what was found in the attribution of secondary emotions by Iatridis (2013). Higher HN attributions to the low status ingroup than to higher status outgroup members were also found in this and in the previous study. Bain (2014) considers this process as similar to social creativity. Therefore, participants that are lower in status, unable to maintain a positive ingroup image concerning competence and rationality when comparing themselves with higher status outgroup members, choose to emphasize characteristics such as warmth and emotionality.

## **5.5. General Discussion**

Similarly to extensive previous research, in all studies participants attributed more overall humanness to their ingroup than to outgroup members (Leyens, 2000, but for a review see Haslam & Loughnan, 2014). More importantly, relations in which the ingroup and the outgroup were involved was found to moderate dehumanization of outgroup members in all

studies. As expected, dehumanization of the Sequera, the Seibava and the Zyqrats, was reduced by such relations.

Another important result is that this effect cannot be entirely explained by a recategorization of ingroup and outgroup into a common ingroup, as was suggested by previous research (e.g. Gaunt, 2009; Capozza et al., 2012). In all studies, CSR and EMR (and negatively MPR in study 4) predicted a “one group” representation to a greater extent than the other relations did, but all relations, even those that did not trigger recategorization, reduced the dehumanization of outgroup members when compared to the absence of a relation. The “one group” representation only mediated the effect of CSR (and EMR in study 5) on outgroup dehumanization. However, given that it did not mediate the effect of all other relations on outgroup dehumanization, recategorization cannot account for the reduction of outgroup dehumanization in these studies.

Moreover, in study 4, all relations reduced outgroup dehumanization on the HN dimension to the same extent. In study 5, the same pattern was found for all relations on all measures of humanness used, except for AR relations. In study 6, outgroup dehumanization was reduced in HN in all relations except MPR and AR inferior. This partially supports our hypothesis, advanced by Haslam (2006) that relatedness is opposed to mechanistic dehumanization.

Unexpectedly, in study 6, MPR did not reduce dehumanization of Zyqrats in HN. In this study the outgroup might have been perceived as being “cold” or mechanical, and therefore low in HN, since market pricing relations entail rational analyses and decision-making processes, and require less warmth. Given that in study 4 and 5 dehumanization of the Sequera and the Seibava was reduced in MPR when compared to the absence of relation, one could assume that MPR may have not been enough to humanize a non-human group, such as the Zyqrats. In comparison to human groups, aliens generally tend to be perceived as more technologically advanced and sophisticated, but lacking in emotional depth and warmth. One

can assume that because of this, being part of this relation further contributed to the low perceived HN of outgroup members.

Moderation of type of relation in outgroup dehumanization varied between humanness dimensions. In all three studies, participants whose ingroup was placed in a higher status position in an AR relation attributed more HU and humanness in words to the ingroup than to the outgroup. HN attributions, on the other hand, varied across studies. In study 4, participants in AR superior attributed less HN to the ingroup than the outgroup. In study 5, participants attributed more HN to their high status ingroup than to the outgroup. In study 6, no difference was found in HN.

In AR inferior, participants attributed less HU to the ingroup than to the outgroup. Regarding HN and words attributions, they again varied across studies. In study 4, no difference was found in the attribution of HN or words between the groups. In study 5, more HN was attributed to the ingroup than to the outgroup. In study 6, more HN and words were attributed to the ingroup than to the outgroup.

All studies consistently showed that participants in high status groups attributed higher HU and humanness in words to their groups than to outgroup members. This finding is consistent with studies linking status with competence (Vaes & Paladino, 2010, Miranda, Gouveia-Pereira & Vaes, 2010b) that found that high status outgroups were seen as more human than the low status, less competent outgroups.

Moreover, all studies also showed that participants in low status groups attribute more HU to the higher status outgroup. The status position (higher versus lower) of the target group was actually more important for the attribution of HU than whether the target group was the ingroup or the outgroup. This superhumanization of outgroups on the HU dimension has been found in previous research with the Australian regarding a Chinese outgroup (Bain et al.,

2009), Americans with reference to a British outgroup (Vaes, Heflick & Goldenberg, 2010), and a study focusing on the role of occupational status in dehumanization (Iatridis, 2013).

Interestingly, in study 4, we found that participants in the high status group attributed more HN to the low status outgroup. Bain and colleagues (2009, Study 4) reported similar findings in a study in which the Chinese attributed higher HN to the Australian outgroup and higher HU to their own group. In study 6, high status groups did not differentiate themselves from low status outgroup members in HN. Assuming that groups tend to emphasize the dimension of humanness which they feel relatively more prototypical and provides them with the most advantageous comparison with outgroup members (Bain, 2014), one could infer that the HN dimension is not as relevant to Italians and American participants as HU. In study 5, other than HU, participants also attributed more HN to their high status ingroup than to outgroup members. This concurs with what has been found by Jones-Lumby and Haslam (2005), that high status social groups are often considered simultaneously high on one or both senses of humanness.

Regarding the attribution of HN, in study 5 and 6, participants in a lower status position attributed more HN to the ingroup than to the outgroup. In order to maintain a positive ingroup distinctiveness (SIT, Tajfel & Turner, 1979), low status groups have been found to positively differentiate themselves on dimensions not related to status, such as warmth (e.g. Reichl, 1997). The status information provided by the experimental instructions might have pre-defined the relative position of the ingroup on some dimension, but left some room for favorable comparisons on others. In study 6, low status groups attributed more words to the ingroup than to the outgroup. Although the word association task can be considered as measuring the attribution of uniquely human words, the task is more implicit than HN and HU measures and not all words concern human uniqueness. Some of the human words refer to

more general human characteristics (e.g.: face). Because it may be perceived more as a measure of general humanness, it may also allow for social creativity in low status groups.

Status relations have provided conditions in which both ingroup and outgroup could be dehumanized. Participants consistently differentiated on the HU dimension according to their relative status position. HN attributions in AR relations varied more across studies, probably because HN lacks a direct link with status and was more subjected to intercultural differences.

The studies presented in this and in the previous chapter have strengthened our claim that social relations that do not trigger recategorization between groups, are also able to reduce outgroup dehumanization of outgroup members. However, in this and the previous chapter relations were presented in scenarios either occurring in the past or in the future, always involving an unknown or fictional outgroup. Would relations still reduce outgroup dehumanization with known groups? We are interested in testing if real status relations between natural groups would also yield the same pattern of results, namely the superhumanization of outgroup members. We address this in the following chapter.

## **Chapter 6- Status Relations Moderate Humanness Attributions to Groups**

Research on the role of status in the subtle dehumanization of groups is not recent (for reviews see Leyens et al., 2007; Vaes et al., 2012; Haslam & Loughnan, 2014). Studies showed that both high and low status groups dehumanize the outgroup (e.g. Leyens and colleagues, 2001; Paladino et al., 2002; Demoulin et al., 2005). Therefore, initial evidence pointed to the idea that status was not a necessary or sufficient condition for subtle dehumanization of groups to occur (Leyens, 2009).

Only recently Haslam and colleagues (2008) reported evidence for differences in the type of dehumanization by low and high status groups, based on a link between HN and HU and warmth and competence. Whereas HN tended to be positively related to both warmth and competence, HU was linked to competence but not warmth. Therefore, groups perceived as high on HU tended to be seen as competent but not warm. In turn, competence is considered informative and often used as a proxy of status (Fiske, Cuddy, Glick, & Xu, 2002). Moreover, Jones-Lumby and Haslam (2005) found that high status social groups are often considered simultaneously high on one or both senses of humanness. Following this reasoning, high status outgroups are expected to be seen as high in HU and low status groups as low in HU.

Vaes and Paladino (2010) tested this link using a large set of intergroup contexts that varied in terms of competence and warmth (e.g. Germans, Brazilians, Gypsies) and found that relatively competent, higher status outgroups were seen as more human than less competent, lower status outgroups. Miranda and colleagues (2010b) also found that only differences competence, but not warmth, predicted outgroup dehumanization. Capozza and colleagues (2012), using the association of human and animal words with target groups as a measure of dehumanization, found that only high status group members dehumanized the lower status outgroup, but low status groups did not dehumanize the higher status outgroup. The same

findings were obtained by Miranda and colleagues (2010a), by first asking participants to generate the characteristics that they considered to be human and then to attribute them to the ingroup and the outgroup. Whereas Gypsy and Black participants attributed equal amounts of human characteristics to their ingroup and to the White Portuguese outgroup, the latter dehumanized both low status outgroups. Moreover, research on occupational groups (Iatridis, 2013) has found that higher status occupational groups were not dehumanized and were sometimes superhumanized by members of the lower status groups in the attribution of secondary emotions. Iatridis (2013) argued that it might be the case that differences in status, at least of occupational groups, were acknowledged and legitimized by both higher and lower status groups.

In an attempt to integrate inconsistent and anomalous findings such as the super humanization of outgroups in HU, Bain (2014) proposed the concept of cultural status. It entails the recognition of national/ethnic groups' contributions to civilization, customs and manners adopted in other parts of the world. Such achievements can inform auto and hereto stereotypes of groups, influencing how groups are placed on a HU continuum. Countries with a higher cultural status (that is, those with a history of achievement in education, art and philosophy, etc...) deny HU to countries with a lower cultural status (that is, younger countries, such as those with a colonial background). The latter in turn attribute more HN to their own group than to others (e.g. Bain et al., 2009).

The present chapter intends to test the moderating role of status relations in the attribution of the two senses of humanness to ingroup and outgroup members, but to test it with natural groups involved in actual status relations. In the previous chapter, AR relations were manipulated using scenarios depicting unknown or fictional outgroups. In this chapter, we will present a study using natural groups and a different manipulation of status.



We hypothesize that status moderates the dimension of humanness attributed to each group, depending on its relative position. Specifically, we predict that members of a group in a higher status position will attribute more HU to ingroup than to outgroup members (e.g. Vaes & Paladino, 2010). Conversely, members of groups in a lower status position will either not differentiate themselves in HU from higher status outgroups (e.g. Miranda et al, 2010a) or attribute greater HU to the members of the higher status outgroup than to ingroup members (e.g. Iatridis, 2013).

We also predict that members of a group in the lower status position will attribute more HN to members of their own group than to members of the higher status outgroup, as a strategy to maintain a positive ingroup image by comparing themselves with the outgroup on a dimension which is unrelated to status (Reichl, 1997).

Given that results regarding the attribution of HN to lower status outgroups was inconsistent across studies in the previous chapter, we predict one of several outcomes. On one hand, participants in a higher status position may attribute more HN to the lower status outgroup than to their own group as a form of compensation (Cambon et al., 2014). Moreover, HN attributions tend to be perceived as less relevant than HU to distinguish groups on a vertical dimension. On the other hand, given that higher status groups are sometimes perceived to be concomitantly high on both senses of humanness (Jones-Lumby & Haslam, 2005), participants in a higher status position may attribute more HN to their own group than to the outgroup.

## **6.1. Method**

### **6.1.1. Participants and design.**

48 Portuguese university students (40 females, mean age=19.79, *SD* =3.12) participated in a study on people's perception about groups and situations in exchange for course credit. The design was a mixed 2 (target group: ingroup vs. outgroup; within-subject) x 2 (relative ingroup status: high vs. low; within subject) x 2 (order of status: high ingroup status first vs. low ingroup status first; between-subjects) design.

### **6.1.2. Procedure and Materials.**

Before introducing the status manipulation, participants were asked what their nationality was (Portuguese or other). After that they were asked how much they identified with the Portuguese group (from 1= Not at all to 7= Completely).

After that they were presented twice with a set of five sentences describing a present or past relation between the Portuguese and another group from a different nationality that was not specified. In the presented relation, the Portuguese had either a higher status (AR superior) or lower status position (AR inferior). For participants in the high ingroup status first condition, the first described relation was the AR superior relation and the second relation the AR inferior relation. For participants in the low ingroup first condition the order was reversed.

In the descriptions, the relations were presented as legitimate, and it was mentioned that the higher status group provided the lower status group the resources it needed, controlled their activities and was responsible for the protection of the lower status group (e.g.: "The Portuguese have the responsibility to guarantee the protection and defense of the members of the low status group."). In turn, the lower status group was portrayed as obeying and respecting the higher status group (e.g.: "The Portuguese obey and respect the will of the

members of the higher status group.”). After the presentation of each relation participants were asked to name a group that, in their opinion, had such a relation with the Portuguese. The exact sentences of the manipulation and frequency tables with outgroups named by participants can be found in Appendix C.

### **6.1.3. Measures.**

After the first relation was presented, participants were asked what was the relative status of the group they had named (from 1 = Very inferior to that of the Portuguese to 7 = Very superior to that of the Portuguese, 4 = Equal).

To assess humanness attributed to the groups, as in the previous chapter, we used the word association task (adapted from Viki et al., 2006, to the Portuguese population) and HN and HU items (adapted from Bastian, Jetten & Radke, 2012). The same measures as those in the previous chapter, concerning attitudes, representation of the intergroup situation and identification, were used.

Only after responding to measures concerning the first relation presented (AR superior or AR inferior), participants were presented with the second relation (AR superior or AR inferior) and responded to measures concerning that relation. All participants were presented with one relation, responded to measures concerning it, and then were presented with the other relation and responded to measures concerning that relation. The order of presentation was counterbalanced (AR superior first or AR inferior first). Participants were randomly assigned to one of the two order of measures for the different target groups (ingroup first or outgroup first). Order of measures was also counterbalanced.

## 6.2. Results<sup>9</sup>

### 6.2.1. Groups named by participants.

Participants in the AR superior condition (in which the Portuguese ingroup was in the higher status position and the outgroup in the lower status position) named outgroups such as: Angolans, Ex-colonies in Africa, and Brazilians. Participants in the AR inferior condition (in which the Portuguese ingroup was in the lower status position and the outgroup in the higher status position) named outgroups such as: Germans, British and the European Union.

### 6.2.2. Relative status of the outgroup.

In a 2 (outgroup status position: high vs. low) x 2 (order of status: AR superior first vs AR inferior first) mixed GLM with outgroup status position as a with-subjects factor and order of status as a between-subjects factor was conducted on the relative status of the outgroup.

A significant main effect of the outgroup status position was found,  $F(1,46) = 203.52$ ,  $p < .001$ ,  $\eta_p^2 = .816$ . Participants considered the relative status of the outgroups to be lower in the lower status position ( $M = 2.81$ ;  $SD = 1.09$ ) than when they were in the higher status position ( $M = 5.79$ ;  $SD = 0.85$ ).

There was no significant main effect of order of status,  $F(1,46) = 0.311$ ,  $p = .580$ ,  $\eta_p^2 = .007$ , nor a significant interaction between outgroup status position and order of status,  $F(1,46) = 2.24$ ,  $p = .141$ ,  $\eta_p^2 = .046$ . Our status manipulation was successful and it was not affected by the order of presentation of AR superior and AR inferior.

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<sup>9</sup> Analyses adding order of measures and order of status were run for every measure. However, these are only reported when relevant effects were found.

### 6.2.3. Humanness attributions.

#### 6.2.3.1. Human and animal words.

Eight indices were obtained for the mean number of animal and human related words attributed to both ingroup and outgroup either in a low or high status position (table 49).

Table 49. Means (and standard deviations) of the number of animal-related and human-related words as a function of group and status.

		Ingroup	Outgroup
Animal-related words	High Status	1.85 (1.17)	2.08 (1.35)
	Low Status	1.85 (1.17)	2.40 (1.46)
Human-related words	High Status	6.58 (1.18)	6.10 (1.40)
	Low Status	6.52 (1.03)	6.08 (1.57)

Following the same procedure as described in the previous chapters, we obtained a composite measure of humanness for the ingroup and outgroup in the high and low status positions.

A 2 (group: ingroup vs. outgroup) x 2 (status: high vs. low) repeated measures GLM was conducted on the attribution of humanness in words (Table 50).

A significant main effect of group was found,  $F(1,47) = 8.54$ ,  $p = .006$ ,  $\eta^2 = .070$ . Participants attributed more humanness in words to the ingroup ( $M = 7.35$ ;  $SD = 0.96$ ) than the outgroup ( $M = 6.93$ ;  $SD = 1.25$ ).

No significant main effect of status,  $F < 0.59$ , and no significant interaction between status and group,  $F(1,47) = 0.36$ ,  $p = .550$ ,  $\eta^2 = .002$ , were found.

Table 50. Means (and standard deviations) of humanness in words as a function of group and status.

	Humanness in words	
	Ingroup	Outgroup
High status	7.37 (1.11) <sup>a,x</sup>	7.01 (0.30) <sup>a,x</sup>
Low status	7.33 (1.05) <sup>a,x</sup>	6.84 (1.47) <sup>a,y</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in humanness attributions to the ingroup and outgroup.

In order to control for the effect of attitudes, a 2 (group: ingroup vs. outgroup) x 2(status: high vs. low) repeated measures GLM was conducted entering attitude towards the ingroup in the high status position ( $M = 54.35$ ;  $SD = 41.16$ ) and in the low status position ( $M = 58.69$ ;  $SD = 31.29$ ) as well as attitude towards the outgroup in the high status position ( $M = 25.04$ ;  $SD = 42.23$ ) and in the low status position ( $M = 33.77$ ;  $SD = 32.41$ ) as covariates. A significant main effect was found for attitude towards the low status outgroup,  $F(1,43) = 8.19$ ,  $p = .006$ ,  $\eta_p^2 = .160$ . No other significant main effects of attitudes were found,  $F$ 's  $< 2.21$ . Significant interactions were found between group and attitude towards the low status outgroup,  $F(1,43) = 5.94$ ,  $p = .019$ ,  $\eta_p^2 = .121$  and attitude towards the high status ingroup,  $F(1,43) = 8.00$ ,  $p = .007$ ,  $\eta_p^2 = .157$ , and between status and attitude towards the high status outgroup,  $F(1,43) = 4.87$ ,  $p = .033$ ,  $\eta_p^2 = .102$ . No other interactions with covariates were significant,  $F$ 's  $< 2.53$ .

Importantly, when controlling for attitude towards the groups, our hypothesized interaction between group and status remained non-significant,  $F(1,43) = 0.36$ ,  $p = .552$ ,  $\eta^2 = .002$ , and the group main effect remained significant,  $F(1,43) = 9.95$ ,  $p = .003$ ,  $\eta^2 = .067$ .

A 2 (group: ingroup vs. outgroup) x 2(status: high vs. low) repeated measures GLM was also conducted entering identification with the ingroup ( $M = 5.73$ ;  $SD = 1.03$ ) and identification with the outgroup (high status  $M = 3.63$ ;  $SD = 1.58$ , and low status,  $M = 3.52$ ;  $SD = 1.49$ ) as covariates. No significant main effects of identification with the ingroup or the outgroup,  $F$ 's  $< 1.51$  and no interactions were found,  $F$ 's  $< 1.96$ .

More importantly, when controlling for identification, our hypothesized interaction remained non-significant,  $F(1,44) = 0.34$ ,  $p = .561$ ,  $\eta^2 = .002$ , and the group main effect remained significant,  $F(1,44) = 8.10$ ,  $p = .007$ ,  $\eta^2 = .070$ .

### **6.2.3.2. Human nature and human uniqueness.**

Eight indices were obtained for the mean attribution of HN and HU to the ingroup and the outgroup either in a low or high status position (see table 51).

A 2 (ingroup vs. outgroup) x 2 (humanness dimension: HN vs. HU) x 2 (status: high vs low) repeated measures GLM was conducted on the attribution of humanness to the groups.

A significant main effect of group was found,  $F(1,47) = 13.06$ ,  $p = .001$ ,  $\eta_p^2 = .217$ . Participants attributed more humanness (that is, averaged HN and HU) to the ingroup ( $M = 4.91$ ;  $SD = 0.82$ ) than to the outgroup ( $M = 4.49$ ;  $SD = 0.69$ ).

A significant interaction between humanness dimension and status was found,  $F(1,47) = 89.86$ ,  $p < .001$ ,  $\eta_p^2 = .657$ . Participants attributed less HN than HU ( $p < .001$ ) to high status groups and more HN than HU to low status groups ( $p = .002$ ). Moreover, participants attributed less HN to high status than low status groups ( $p < .001$ ) and more HU to high status than low status groups ( $p < .001$ ).

More importantly, the predicted interaction between humanness dimension, group and status was significant  $F(1,47) = 76.88$ ,  $p < .001$ ,  $\eta^2 = .090$ . To test whether the attribution of HN and HU to the groups differed due to their status, we conducted planned contrast analyses

testing the differential attribution of HN and HU to the groups separately for the AR superior and the AR inferior relations.

When the ingroup was in the high status position and the outgroup in a low status position (AR superior relation), attributions of HU were higher to the ingroup than to the outgroup,  $t(44) = 4.17, p < .001$ , but no difference between the groups was reported for HN,  $t(44) = 0.14, p = .888$ . When the ingroup was in the low status position and the outgroup in the high status position (AR inferior relation), attributions of HU were higher to the outgroup than to the ingroup,  $t(44) = -3.86, p < .001$  and attributions of HN were higher to the ingroup than the outgroup,  $t(44) = 8.38, p < .001$ . In AR superior the difference between the groups in HU was greater than that in HN,  $t(44) = 3.46, p = .001$ . In AR inferior the difference between the groups in HU was smaller than the difference in HN,  $t(44) = -11.26, p < .001$ .

Simple mean comparisons (Bonferroni adjustment) in table 51 show that, concerning groups in high status positions, participants attributed more HN to the ingroup than to the outgroup and more HU to the outgroup than to the ingroup. For groups in a low status position, participants attributed more HU to the ingroup than to the outgroup but no difference between the groups was found in HN.

Moreover, when the ingroup was in a high status position participants attributed it less HN than when the ingroup was in a low status position, but no difference was reported for HU. When the outgroup was in a high status position participants attributed it less HN and more HU than when the outgroup was in a low status position.

There were also some other, theoretically irrelevant, effects. A significant interaction between humanness dimension and group was found,  $F(1,47) = 12.24, p = .001, \eta_p^2 = .207$ . A significant main effect of humanness dimension was also found,  $F(1,47) = 9.15, p = .004, \eta_p^2 = .163$ . No significant interaction between group and status was found,  $F(1,47) = 2.55, p = .117, \eta_p^2 = .052$ , as well as no significant main effect of status,  $F < 0.03$ .



Table 51. Means (and standard deviations) of the attribution of HN and HU as a function of group and status.

	Ingroup		Outgroup	
	HN	HU	HN	HU
High Status	4.79 (0.99) <sup>a,x</sup>	4.89 (1.05) <sup>a,x</sup>	3.70 (0.99) <sup>a,y</sup>	5.45 (0.89) <sup>a,y</sup>
Low Status	5.01 (0.88) <sup>b,x</sup>	4.94 (0.93) <sup>a,x</sup>	4.76 (1.27) <sup>b,x</sup>	4.06 (1.17) <sup>b,y</sup>

Note: <sup>ab</sup> Conditions with different superscripts for the same group within the same measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition within the same measure indicate significant differences in humanness attributions to the ingroup and outgroup.

A 2 (group: ingroup vs. outgroup) x 2(status: high vs. low) repeated measures GLM was conducted entering attitude towards the ingroup and the outgroup (high and low status position) as covariates. Significant main effects were found for attitude towards the ingroup in the high status position,  $F(1, 43) = 9.77, p = .003, \eta_p^2 = .185$ , attitude towards the outgroup in the high status,  $F(1, 43) = 5.88, p = .020, \eta_p^2 = .120$ , and attitude towards the outgroup in the low status position,  $F(1, 43) = 3.83, p = .057, \eta_p^2 = .082$ . No significant main effect of attitude towards the ingroup in a low status position was found,  $F < 0.02$ .

Significant interactions were found between attitude towards the ingroup in the high status position and group,  $F(1, 43) = 8.75, p = .005, \eta_p^2 = .169$ , status,  $F(1, 43) = 4.62, p = .037, \eta_p^2 = .097$ , and marginally with group, status and humanness dimension,  $F(1, 43) = 3.20, p = .081, \eta_p^2 = .069$ . Attitude towards the ingroup in the low status position significantly interacted with group,  $F(1, 43) = 5.55, p = .023, \eta_p^2 = .114$ , group and humanness dimension,

$F(1, 43) = 4.71, p = .036, \eta_p^2 = .099$ , and marginally with group, humanness dimension and status,  $F(1, 43) = 3.43, p = .071, \eta_p^2 = .074$ . Attitude towards the outgroup in the low status position significantly interacted with group,  $F(1, 43) = 15.80, p < .001, \eta_p^2 = .269$ , status,  $F(1, 43) = 11.27, p = .002, \eta_p^2 = .208$ , group and humanness dimension,  $F(1, 43) = 4.96, p = .031, \eta_p^2 = .104$  and group and status,  $F(1, 43) = 4.30, p = .044, \eta_p^2 = .091$ . No other interaction was significant,  $F$ 's  $< 2.66$ .

More importantly, when controlling for attitudes towards the groups, the hypothesized interaction between group, humanness dimension and status remained significant,  $F(1,43) = 77.85, p < .001, \eta^2 = .090$ .

A 2 (group: ingroup vs. outgroup) x 2(status: high vs. low) repeated measures GLM was conducted entering identification with the ingroup and identification with the outgroup (high and low status) as covariates. A main effect was found for identification with the ingroup,  $F(1, 44) = 5.89, p = .019, \eta_p^2 = .118$ , and identification with the outgroup in a low status position,  $F(1, 44) = 4.41, p = .042, \eta_p^2 = .091$ . No significant main effect was found for identification with the outgroup in a high status position,  $F(1, 44) = 1.43, p = .239, \eta_p^2 = .091$ .

Significant interactions were found between status and identification with the outgroup in a low status position,  $F(1, 44) = 9.30, p = .004, \eta_p^2 = .175$ ; humanness dimension and identification with the ingroup,  $F(1, 44) = 3.39, p = .034, \eta_p^2 = .099$ ; and between group, status and identification with the outgroup in the low status position,  $F(1, 44) = 4.05, p = .050, \eta_p^2 = .084$ . A marginally significant interaction was found between humanness dimension and identification with the outgroup in a high status position,  $F(1, 44) = 3.57, p = .065, \eta_p^2 = .075$ . No other interactions with the covariates were significant,  $F$ 's  $< 2.98$ .

More importantly, when controlling for identification with the groups, the interaction between group, humanness dimension and status remained significant,  $F(1,44) = 72.26, p < .001, \eta^2 = .091$ .

#### 6.2.4. Attitude towards the groups.

To verify if attitudes towards the groups varied as a function of our manipulation, we conducted a repeated measures GLM with 2 (status: high vs low) and 2 (group: ingroup vs outgroup) as within-subjects factors on the attitudes towards the groups (see table 52).

A significant main effect of group was found,  $F(1,47) = 32.98$ ,  $p < .001$ ,  $\eta_p^2 = .412$ . Participants' attitude towards the ingroup ( $M = 56.52$ ;  $SD = 31.93$ ) was more positive than towards the outgroup ( $M = 29.41$ ;  $SD = 27.96$ ). No significant main effect of status,  $F(1,47) = 2.24$ ,  $p = .141$ ,  $\eta_p^2 = .046$ , nor a significant interaction between group and status,  $F < 0.23$ , was found.

Table 52. Means (and standard deviations) of attitudes as a function of group and status.

	Attitudes	
	Ingroup	Outgroup
High Status	54.35 <sup>a,x</sup> (41.16)	25.04 <sup>a,y</sup> (42.23)
Low Status	58.69 <sup>a,x</sup> (31.29)	33.77 <sup>a,y</sup> (32.41)

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in attitudes towards the ingroup and outgroup.

#### 6.2.5. Identification with the outgroup.

To test if identification with the outgroup varied as a function of our manipulation, we conducted a repeated measures GLM with status as a within-subjects factor on the level of

identification with the outgroup. No main effect of status was reported,  $F < 0.12$  (see table 53).

Identification with the ingroup ( $M = 5.73$ ;  $SD = 1.03$ ) was measured only once at the beginning of the survey before the group status within-subjects manipulation was introduced. Therefore it was not tested as a dependent variable.

*Table 53.* Means (and standard deviations) of identification with the outgroup as a function of status.

	Identification Outgroup
High Status	3.63 <sup>a</sup> (1.58)
Low Status	3.52 <sup>a</sup> (1.49)

Note: <sup>ab</sup> Conditions with different superscripts differ significantly from each other ( $p < .05$ , two-tailed).

### 6.3. Discussion

Independently of the relative status of the ingroup, participants attributed more humanness to the Portuguese ingroup than to national outgroups when humanness was measured by the association of humanness in words with the target group. This supports the common finding that humanness is more often used to describe one's own group than to describe outgroups (Leyens et al., 2000, Leyens et al., 2007).

However, results are more complex when humanness was measured on the different dimensions, as the attribution of humanness varied for each dimension differently in the different status relations. Allowing participants to describe the groups using two distinct

senses of humanness revealed a complementary intergroup attribution of HU and HN. This finding replicates results of previous research (Bain et al., 2009), suggesting that the ingroup is not consistently seen as being superior to the outgroup on both dimensions. Groups may put greater emphasis on the dimension of humanness on which they believe their group is superior (Bain et al., 2009). Considering that the Portuguese have a long and well-known history of colonization, and assuming that they interpret this colonial history as indicating a relatively high “cultural status” (Bain, 2014) one would expect that Portuguese participants put a greater emphasis on the HU dimension than on the HN dimension to distinguish themselves from certain outgroups. However, to further examine how HU was attributed to groups, status relations must be taken into account.

As hypothesized, group status was found to moderate the attribution of humanness to groups in the HN and HU dimensions. Unexpectedly, that was not the case for the word association task (Viki et al., 2006).

The latter finding differs from the findings of Capozza and colleagues (2012). Using human and animal word associations as a measure of humanness as well, these authors found that ingroup status affected intergroup differences in the attribution of humanness. This previous research had used automatic associations (IAT and GNAT), not explicit associations as in the current study. Perhaps asking participants explicitly to choose human and animal related words they associate with the groups did not allow us to obtain status effects on the differential attribution of humanness. One may assume that this measure is less context-sensitive than more implicit measures, which might be able to better reflect the automatic impact of attitudes and cognitions (De Houwer, 2006).

Concerning the HN and HU dimensions, in this study, high status groups were attributed more HU and less HN than low status groups. This finding is consistent with the commonly

reported strong connection between HU and competence (Haslam et al., 2008) and between competence and status (Fiske, Cuddy, Glick, & Xu, 2002).

Within the different asymmetric status relations, as found in the previous chapter, participants first attributed more HU to the high status ingroup than to the low status outgroups. Notably, most participants indicated as low status outgroups former Portuguese colonies (e.g. Brazil, Angola). As proposed by Bain (2014), perceiving one's group as having a stronger history of cultural achievements than other groups, which is one usual – even if historically inaccurate and problematic – interpretation of Portugal's colonial past, may lead group members to see their group as more prototypically human on the HU continuum. Our finding also corresponds to those of previous studies (e.g. Vaes & Paladino, 2010) showing that competence and status are more closely associated with the HU dimension than with HN.

Second, as found in the previous chapter, participants also attributed more HU to the high status outgroup than to the low status ingroup. This superhumanization of outgroups on the HU dimension has been found with regard to several outgroups in previous research: the Chinese (Bain et al., 2009), the British (Vaes, Heflick & Goldenberg, 2010) and blue-collar workers (Iatridis, 2013).

Third, as we had also found in the previous chapter (studies 5 and 6), participants also attributed more HN to the low status ingroup than to the high status outgroup. As a social creativity strategy (Tajfel & Turner, 1979), low status groups may search for positive distinctiveness on dimensions not related to status, such as those connected to HN (e.g. Reichl, 1997). Moreover, this finding provides further support to the complementarity hypothesis advanced by Bain and colleagues (2009).

However, no difference in the attribution of HN was found between the high status ingroup and the low status outgroup. According to Cambon and colleagues (2014) members of high status groups tend to engage in compensation in intergroup relations in order to seem less

discriminatory. It can be used to deliberately avoid perceptions of outright prejudice or racism (Bain et al., 2009) and to satisfy the lower status groups' need for a positive social identity. However, if this reasoning applies, then why would such a compensation tendency only lead to equal humanization of ingroup and outgroup and not to outgroup superhumanization on HN? One reason could be that it counteracts a pervasive tendency of outgroup dehumanization on HN, as has been found, for instance, by Jones-Lumby and Haslam (2005) and in Study 5 of this thesis.

Neither HU nor HN are universal forms of subtle dehumanization. Groups are not invariably seen as superior on both. To the reasoning proposed by Bain and colleagues (2009) that dehumanization of groups is contextually dependent, we add that the dimension in which groups perceive themselves to be superior to others depends on the relation they have with such groups.

In this and in the previous chapter, we found evidence that status relations moderate outgroup dehumanization differently than other relations, particularly because they imply asymmetric positions of the two related groups.

Insofar, we have focused on the role of intergroup relations in the (de)humanization of groups. In chapter 4 and 5 we found that relations between ingroup and outgroup were able to humanize the outgroup in one or both senses of humanness. Participating in a relation has, in chapter 5, also contributed to the humanization of the ingroup. But why would relations humanize those involved? Does it matter with whom groups relate to? Studies 2 and 3 showed that intergroup relations between two outgroups did not contribute to their humanization when compared to the absence of relation. Moreover, humanness attributions to the ingroup (in study 3) were not affected by our relational manipulation. Could this have been due to the intergroup context? Would the same be expected in intragroup relations?

In the next chapter, we test if intragroup relations in which only outgroup members are involved, are responsible for the humanization of the outgroup. Additionally, we examine if not participating in a relation can be responsible for the dehumanization of the ingroup.



## Chapter 7

### **They are People: Relational Information leads to Group Humanization.\***

Ana Louceiro<sup>1,2</sup>, Sven Waldzus<sup>1</sup> & Maria Paola Paladino<sup>3</sup>

#### **Abstract**

An experimental scenario study (N = 234) tested the impact of social relations on group humanization. Participants were exposed to information about an alien outgroup arriving on earth. In four conditions, information was provided about relations between outgroup members, framed according to Relational Models Theory as communal sharing (CS), authority ranking (AR), equality matching (EM) or Market pricing (MP). The control condition did not provide relational information.

Results show that relational information increased humanization. Human nature was increased by all types of relations (although not significantly by AR), human uniqueness, only by EM and MP, but not by CS and AR relations. We conclude that studying targets as relational beings is key for the understanding of (de)humanization of outgroups.

1 Instituto Universitário de Lisboa (ISCTE-IUL), CIS-IUL, Lisboa, Portugal

2 Corresponding author's email address: [Ana\\_Filipa\\_Louceiro@iscte.pt](mailto:Ana_Filipa_Louceiro@iscte.pt)

3 University of Trento, Corso Bettini 31, 38068 Rovereto (TN), Italy

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## **Introduction**

What makes us human? When we talk about humanness we usually refer to a set of behaviors and attributes that are central or typical characteristics of humans and differentiate humans from other entities that are not humans. Haslam and colleagues (2005) proposed two different senses of humanness: Human uniqueness and Human nature. Human nature concerns warmth, cognitive openness, agency and depth, whereas human uniqueness comprehends civility, refinement, moral sensibility and rationality (Haslam, 2006; Bain, 2014). Among other characteristics, human uniqueness has been characterized by cognitively complex capacities involved in abstract and mathematical reasoning. Human nature, on the other hand, has been characterized by capacities of forming social groups and maintaining affectionate relationships (Wilson & Haslam, 2013).

These two distinct senses of humanness were connected to two types of dehumanization (Haslam, 2006). Denying human uniqueness to individuals or groups corresponds to likening them subtly or overtly to animals. Denying human nature is likening individuals or groups as inanimate objects. Thus, denying human nature involves a distancing and objectifying approach, in which no social relation is perceived to exist with the dehumanized other (Haslam, 2006).

One context in which dehumanization – either in its extreme form of complete denial of humanness or in its more subtle forms of incomplete attribution of humanness - has attracted the attention of a large amount of research is the perception of members of outgroups (Leyens et al., 2000; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; for a review see Vaes, Paladino & Miranda, 2012). There have been many studies on predictors and consequences of the dehumanization of outgroups. However, with its focus on the explanation of the pervasive lack of humanization of outgroups in general, this research has neglected one fundamental question so far: Why should people humanize anyone in the first place, and in particular,

outgroup members? In the current research we address this question and propose a parsimonious, yet consequential tentative answer. Humanization is most of all the belief or perception that a target is potentially participating in a social relation. Social relations are what we are made for. People are driven by a fundamental need to relate to others (e.g., Bowlby, 1969; Maslow, 1954) and several scholars have proposed that the way we think and feel about social relations is fundamentally distinct from the way we think and feel about non-social objects and constellations (Fiske, 1991, 1992; Kaufmann & Clément, 2014).

We assume that the most important function of humanization is to provide an appraisal of the target as a relational being, rendering the application of relational feeling, thinking, judgment and behavior appropriate. Although this assumption has rarely been claimed explicitly by social psychologists (for an exception in terms of human nature see Haslam, 2006), it is implicit, as a common denominator, in all previous conceptualizations of dehumanization. Therefore it is also compatible with existing evidence of implications of dehumanization such as the denial of empathic concern (Čehajić, Brown & González, 2009), moral disengagement (Bandura, 1999), exclusion from the scope of justice (Opatow, 1990), legitimization of violence (Bar-Tal, 1989), non-attribution of secondary emotions (Leyens et al, 2000; 2001) and instrumentalization (e.g. Vaes, Paladino & Puvia, 2011). All of these things that are denied to dehumanized targets are genuinely relational and normative in the regulation of social relations (Rai & Fiske, 2011): moral concerns such as the avoidance of harm or justice, secondary emotions and the non-reduction of targets to a potentially instrumental object.

From this assumption we derive our major hypothesis, which is that targets, including outgroup members, should be humanized to the degree that they are seen as participating in social relations. In the current study we tested this hypothesis for outgroup members in a scenario study in which we either provided (experimental conditions) or did not provide

(control condition) relational information about members of an outgroup and then measured the degree to which they were humanized.

In our approach and in the design of the study we rely on relational models theory (RMT; Fiske, 1991, 1992), which proposes that people use a limited number of cognitive relational models to interact with others. Relation is defined as the way in which people coordinate so that their actions, affects, evaluations or thoughts are complementary. There are just four elementary models, which are combined to produce more complex forms of social relations: in Communal Sharing (CS) participants share in an undifferentiated manner, in Authority Ranking (AR) they are ranked linearly, in Equality Matching (EM) they receive or exchange on equal terms, and in Market Pricing (MP) exchanges or distributions are based on ratios and proportions (Fiske, 1991).

According to RMT, being a partner in a relation, in which two or more people are either seen as interchangeable and undifferentiated (CS); as distinct social units engaged in operations to restore balance in their interactions (EM); as assuming different positions in a linear social hierarchy (AR); or as engaging in social exchange guided by proportionality and utilitarian rationality (MP) should always require perceiving the other as a meaningful interaction partner to whom specific relational concerns are activated.

Importantly, people do not always coordinate in such relational manner. People may think and act without reference to any relational standard (Fiske & Haslam, 2005). When these “null” interactions occur, relational motivations are absent and people disregard others as potential relation partners, treating them as if they lack meaningful desires, intentions or needs. Such null-relations define a case of complete dehumanization.

In the present research, we put forward the idea that information about social relations outgroup members are engaged in, as opposed to the absence of relational information, may increase the perceived humanness of outgroup members. Therefore, using the framework proposed by RMT, we tested to what extent the four abovementioned kinds of social relations would contribute to the humanization of an outgroup. We hypothesized that the perceived humanness of outgroup members is higher when these are involved in relations compared to when they are not.

We also explored whether the four relational models would differ in their humanizing potential, both from each other and on the two different dimensions proposed by Haslam et al. (2005): human nature and human uniqueness.

Moreover, in order to make it easier to investigate humanization, we chose an outgroup that by definition is not human (i.e. aliens).

## **Method**

### **Participants and Design**

380 participants were recruited using Amazon's Mechanical Turk for a study on perception of fictional characters and paid 65 cent (USD). Each of them was randomly, but not equally, assigned to one of 5 conditions (type of relation: communal sharing vs. authority ranking vs. equality matching vs. market pricing vs. no relation) in a between-subjects design. To assure an adequate distribution for our hypothesis test, the randomization was programmed to assure that the probability to end up in the non-relational control condition was twice as high (resulting in 34.2% of participants in this condition) as the probability to end up in each of the relational conditions (between 14.5 and 18.4%). From the total sample, 146 participants were

excluded because they did not respond to the main dependent variables. Hence, data of 234 participants (137 females, mean age = 34.59,  $SD = 11.95$ ) entered the analysis.

### **Procedure and materials**

This study was conducted online using Qualtrics software and justified by a cover story stating that the survey intended to understand how individuals form impressions of fictional characters.

Participants were presented with a text describing fictional characters and their relationships, during which they were asked to form an impression about them. This text referred to a future time in which an alien population called the Zyqrat was forced to land on Earth and began colonizing it. The text stated that the Zyqrat population (i.e. the outgroup) never established a relation with the Human population (i.e. the ingroup) and that these were unaware of each other's existence.

In the four relational conditions, but not in the no-relation control condition, additional information regarding specific intragroup relations among outgroup members was presented.

Outgroup members were said to have had established relations among themselves: a communal sharing (CS condition), an authority ranking (AR condition), an equality matching (EM condition) or a market pricing (MP condition) relation.

In the CS condition the text stated that "...The Zyqrat often established relations in which they shared experiences, activities and resources.", that they "...contributed with their efforts according to their possibilities to the collective well-being." and that they could also "...freely take what they needed from collective resources." It was also said that, "...if a family lost its harvest, it would receive help to survive the winter from those who had had a good harvest." The text further informed that "...the Zyqrat also shared moments of celebration and several

rituals... in which...they would dance and eat together...” usually marking “...the beginning of intimate and romantic relations (ex. marriages)...” between them.

In the AR condition the text indicated that the Zyqrat developed a relation characterized by “status differences and exercise of authority”, and in which some Zyqrats had a more privileged position than others. The “lower status Zyqrats respected and obeyed those with a higher status, which in turn, protected and took responsibility for the Zyqrat with a lower status.” Zyqrats with higher status directed and controlled the work done by the lower status Zyqrats. It was also stated that if a Zyqrat family lost its harvest “it would be allowed to work for Zyqrats with higher status, thereby surviving the winter.” Higher status Zyqrats also “advised lower status Zyqrats on some cereal cultivation methods and cattle raising techniques. The text further stated that “the lower status Zyqrat generally respected the wishes of their patrons and showed loyalty, since they considered their position of superiority as fully legitimate.”

In EM, the Zyqrat established a relation of strong reciprocity between them, “...in which they exchanged favors, gifts and tokens.” and in which they “all would receive the same, regardless of what they needed or wanted.” It was stated that if a family needed “...seeds and food to survive the winter from another family...” they would have to return “the same amount of seeds and food after the next summer.” The Zyqrat considered themselves as peers and their interactions were based on “equal treatment and balanced reciprocity.” The text further stated that they “would organize festivities in which they would engage in sports games as well as contests...” and “exchanged gifts among them.”

In MP, the text indicated that the Zyqrat developed a relation of trade and economic exchange, in which “they exchanged goods and services according to market rules.” It stated that “if a family lost its harvest, it would have the possibility to buy seeds and food to survive the winter from those who had had a good harvest.” The price of the products depended “on

the quality and quantity of what was purchased.” The text further indicated that “...meetings between Zyqrats were most frequent when rational cost-benefit analysis deemed them convenient and advantageous for all those involved.”

## **Measures**

### **Human nature and Human uniqueness**

Participants responded to eight items (adapted from Bastian, Jetten & Radke, 2012) concerning Human Nature (HN) and Human Uniqueness (HU). Four items pertained to Human Uniqueness (e.g.: I think members of the Zyqrat population: are refined and cultured) and four items referred to Human Nature (e.g.: I think that members of the Zyqrat population are open minded, like they can think openly about things). Half of the items were reverse coded as they asked in the opposite direction (e.g. “...lack self-restraint, like animals”). Participants responded on a 7-point Likert scale ranging from 1 (not at all) to 7 (completely). To obtain an informative anchor indicating the comparative standard for complete humanization, the same questions were asked regarding the Human population. The order of measures for the Zyqrat and the Human population was randomized for each participant.

### **Identification**

One item addressed participants’ identification with each population (i.e. “To what extent do you identify with the following populations?”) Participants responded on a 7-point Likert scale ranging from 1 (Not at all) to 7 (Completely).<sup>10</sup>

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<sup>10</sup> For explorative purposes several other variables were also measured, which are not relevant for the aim of this article and therefore not reported: Control questions regarding the relational information in the different



## Results

### Preliminary analysis

To ensure that the intergroup context was ecologically valid in the sense that the Zyqrat were actually seen as an outgroup and not as an ingroup, and therefore results cannot be explained by a shift of identification, we analyzed the identification with the ingroup and with the outgroup. Average ingroup identification ( $M = 5.77$ ;  $SD = 1.44$ ) was significantly above the scale midpoint of 4,  $t(233) = 18.80$ ,  $p < .001$ , whereas identification with the outgroup ( $M = 3.11$ ;  $SD = 1.85$ ) was significantly below the midpoint of the scale,  $t(233) = 7.35$ ,  $p < .001$ . Although, in a 2 (target group: ingroup vs. outgroup) x 5 (experimental condition: No-relation vs. CS vs. AR vs. EM vs. MP) GLM, the interaction between target group and experimental condition was significant,  $F(4,229) = 5.12$ ,  $p = .001$ ,  $\eta_p^2 = .082$ , the main effect of target group was much stronger,  $F(1,229) = 190.36$ ,  $p < .001$ ,  $\eta_p^2 = .454$ , and identification with the ingroup was stronger than identification with the outgroup in all experimental conditions,  $F_s(1,229) > 8.90$ ,  $p_s < .004$ ,  $\eta_s^2_p > .038$ . Thus, participants identified much more with the Human population in the scenario than with the Zyqrat and any eventual humanization of this outgroup as a result of the experimental manipulations cannot be explained by a shift of identification from the ingroup to the outgroup. Nevertheless, we will control for identification in our specific hypotheses tests.

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conditions, attitudes towards ingroup and outgroup, representation of the intergroup relation, overlap between self, ingroup and outgroup, perspective taking and images that were attributed to the groups. Immediately after reading the manipulation texts, participants were also asked to perform an association task (adapted from Viki, Winchester, Titshall, Chisago, Pina & Russel, 2006) which was intended to be used as an additional measure of humanization, but due to unexpected order effects, those results are difficult to interpret. Hence, for the sake of clarity we refrain from reporting them.

### **Human nature and Human uniqueness**

Items for human nature and human uniqueness were averaged into two indices for each group (see Table 54): Human Nature ( $\alpha = .73$ ) and Human Uniqueness ( $\alpha = .80$ ) of the ingroup as well as Human Nature ( $\alpha = .80$ ) and Human Uniqueness ( $\alpha = .75$ ) of the outgroup.

The four indices were included in a 2 (dimension: human nature vs human uniqueness) x 2 (target group: ingroup vs. outgroup) x 5 (experimental condition: no-relation vs. CS vs. AR vs. EM vs. MP) GLM with dimension and target group as within-subject factors. Results showed a significant main effect of target group,  $F(1,229) = 5.73, p = .017, \eta_p^2 = .024$ , which was qualified by an interaction with experimental condition,  $F(4,229) = 8.81, p < .001, \eta_p^2 = .133$ , by an interaction with dimension,  $F(1,229) = 38.73, p < .001, \eta_p^2 = .145$ , and by a three-way interaction with experimental condition and dimension,  $F(4,229) = 3.43, p = .010, \eta_p^2 = .056$ . No other effect was significant.

To test our hypothesis, we first conducted planned contrast analyses testing whether humanness attributed to the Zyqrats was lower in the no-relation condition than in all the other conditions taken together. This contrast was significant for both human nature,  $F(1,229) = 17.39, p < .001, \eta_p^2 = .071$ , and human uniqueness,  $F(1,229) = 8.11, p = .005, \eta_p^2 = .034$ . These results did not change when controlling for identification with humans and with the Zyqrats as covariates.

To explore whether the relational information in the different conditions had differential effects we then analyzed the pattern of means and performed simple mean comparisons. As can be seen in Table 54, in line with our hypothesis, more humanness was attributed to the outgroup in all relational conditions than in the no-relation condition. However, the attribution of human nature to the outgroup was not significantly higher in the AR than in the no-relation condition and the attribution of human uniqueness to the outgroup was only increased in the EM and MP condition, but not in the CS and AR condition.

Two additional results are noteworthy: First, while the outgroup was dehumanized on human nature in the no-relation condition, there was no outgroup dehumanization in any of the relational conditions. Second, there were unpredicted effects of the manipulation on the attribution of humanness to the ingroup. Most importantly, less human nature and less human uniqueness was attributed to the ingroup when EM information about the outgroup was presented (Table 54).

*Table 54.* Means (and standard deviations) of human nature (HN) and human uniqueness (HU) attributed to Zyqrats and Humans in the different experimental conditions regarding type of relations among Zyqrats.

Relational condition	Zyqrats		Humans	
	HN	HU	HN	HU
Communal Sharing	5.42 <sup>c,x</sup> (1.14)	5.29 <sup>abc,x</sup> (1.14)	5.41 <sup>a,x</sup> (1.15)	5.33 <sup>a,x</sup> (1.30)
Authority Ranking	4.71 <sup>ab,x</sup> (1.16)	5.18 <sup>ab,x</sup> (.82)	4.95 <sup>ab,x</sup> (.96)	4.86 <sup>abc,x</sup> (1.23)
Equality Matching	5.50 <sup>c,y</sup> (1.20)	5.77 <sup>c,y</sup> (1.09)	4.77 <sup>b,x</sup> (1.10)	4.47 <sup>c,x</sup> (1.07)
Market Pricing	5.08 <sup>bc,x</sup> (1.13)	5.51 <sup>bc,y</sup> (0.99)	5.17 <sup>ab,x</sup> (1.11)	4.79 <sup>bc,x</sup> (1.02)
No Relation	4.52 <sup>a,x</sup> (1.14)	5.01 <sup>a,x</sup> (1.21)	5.31 <sup>a,y</sup> (0.93)	4.98 <sup>ab,x</sup> (1.18)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between Zyqrats and Humans on the same measure within the same condition indicate significant differences between humanization of Zyqrats and Humans.

## Discussion

Participants attributed less humanness to outgroup members in the no-relation condition than in all the relational conditions taken together both in the HN and in the HU dimension.

That is, results support our hypothesis that participating in a relation increases humanness attributions to the targets involved in these relations, even if they are outgroup members.

Interestingly, however, not all relations framed in terms of relational models proposed by RMT (Fiske, 1992) had the same humanizing effect on each of the two humanness dimensions. All relations (although not significantly in AR, which will be discussed later) increased the perceived human nature of outgroup members, thereby eliminating the dehumanization in comparison with the ingroup that was found in the no-relation control condition. The introduction of an outgroup without providing any information about relations of its members might therefore correspond to the concept of a Null-relation in RMT (Fiske, 1991, 1992) and our results are in line with Haslam's (2005) suggestion that "[m]echanistic dehumanization may ... index the extent to which people see no relatedness to others" (p. 261). Moreover, our results are also in line with Wilson and Haslam's (2013) claim that human nature is perceived as the capacity of forming social groups, a capacity that might involve any of the four different relational models.

Results tell a different story for human uniqueness. Only EM and MP increased the human uniqueness of outgroup members, whereas CS and AR did not. Thus, it seems that these relations were not perceived as uniquely human by participants. This result is interesting, given that RMT assumes that CS and AR are both phylogenetically and ontogenetically older than EM and MP. Fiske (1991) mentions that primitives of social relations comparable to CS and AR are observed in non-human animals, such as altruism towards offspring and siblings (e.g.: social insects, Hamilton, 1963; African wild dogs, H. and J. Lawick-Goodall, 1970; other animals, Trivers, 1974) as well as dominance hierarchies (e.g.: Packer, 1979; Cheney & Seyfarth, 1990), respectively. In contrast, there is no consistent evidence of non-human animals engaging in EM and MP relations. There have been observations of reciprocity among primates (e.g.: Packer, 1977; Cheney and Seyfarth, 1985). However, Fiske (1991)

claims that evidence lacks on whether an animal intends to match the behavior of another. Moreover, there are no reports of turn-taking or balancing contributions in non-human animals. Regarding MP, humans are the only species known to use money and to use proportion in their contributions. One explanation that Fiske puts forward is that animals lack the cognitive abilities to organize themselves in full EM and MP relations. Therefore, EM and MP relations may be perceived as those in which only humans engage and therefore, participating in these would also increase the perceived human uniqueness of those involved. Moreover, as found by Wilson and Haslam (2013), behaviors such as performing calculations, verbal and numerical reasoning are perceived as high in both human uniqueness and human nature. Finally, EM and MP are assumed to develop later in children's development (Fiske, 1991).

Accordingly, in people's naïve sociology (Kaufmann & Clément, 2014), animals as well as small children might be seen as potentially participating in CS and AR relations without fully possessing the characteristics that define the uniqueness of humans as adults. One interesting research question would be whether they are partially humanized in terms of human nature, but not in terms of human uniqueness (e.g., Loughnan & Haslam, 2007).

Two other unpredicted results deserve some attention. First, attribution of human nature in the authority ranking condition did not differ significantly from the no-relation control condition but was significantly lower than in the EM and CS conditions. We abstain here from drawing strong conclusions from this result, given that we did not specify the status positions of the targets. One can assume that some participants might have imagined the higher status Zyqrats and others, the lower status Zyqrats when judging their humanness. Status position has been shown to moderate intergroup dehumanization (for a review see Vaes et al., 2012). Higher status groups tend to be attributed more human uniqueness than lower status groups (e.g. Vaes & Paladino, 2010), a tendency that might sometimes be compensated by attribution

of more human nature to lower status groups (Cambon et al., 2014, Reichl, 1997). Thus, AR as humanizing relation that depends on position deserves more research.

Secondly, although relational information about the ingroup was not manipulated, humanness attributions to the ingroup were found to vary across experimental conditions. Particularly, EM information about outgroup members decreased the humanness attributed to the human ingroup, both on human nature and human uniqueness. One reason that may explain this effect is the varying level of ingroup identification (Paladino, Vaes, Castano, Demoulin, & Leyens, 2004) between conditions. In order for people to humanize the ingroup, they must identify with it and attribute meaning to their membership. The EM condition was the one in which ingroup identification was lowest and identification with the outgroup was highest. Moreover, in contrast to the results on the outgroup ratings, the unpredicted reduction of humanization of the ingroup in the EM condition as compared to the no-relation control condition disappeared when the identification measures were entered as covariates. One limitation of this study is, of course, that the scenario design and the artificial character of the target group do not allow yet for far-reaching generalizations towards more ecologically valid intergroup contexts. Nevertheless, the results that could already be obtained with this study are evidence for the theoretical importance of and the necessity to study relational perception as key determinant of (de)humanization.

## **Chapter 8 – Social Relations in a Minimal Intergroup Context and Outgroup**

### **Dehumanization.**

In this chapter we will test if, when using a minimal group paradigm, social relations are also able to moderate outgroup dehumanization. One necessary and sufficient condition for outgroup dehumanization has been proposed by Leyens (2009): meaningful ingroup-outgroup distinction. Indeed, several studies (e.g. Demoulin et al., 2009) using a minimal group paradigm have found that participants attributed more humanness to the ingroup than to outgroup members.

Kofta, Baran and Tarnowska (2014), using a minimal group paradigm, found that the ascription of human potentials was faster for the ingroup than the outgroup. Capozza and colleagues (2012), manipulating group status in a minimal context, found that high status group members dehumanized the lower status outgroup and that this effect was driven by both a greater association between the ingroup and humanness and between the outgroup and animality. Buckels and Trapnell (2013) also showed that participants found it easier to associate outgroup members with animals, relative to ingroup members.

Demoulin and colleagues (2009) further explored the role of mere social categorization in dehumanization. When participants were randomly assigned to groups, ingroup favoritism arose but not outgroup dehumanization. This suggests that for dehumanization to occur mere categorization is not enough. Adding some meaning to the categories (e.g., color preferences) was necessary to produce a dehumanization pattern.

### **8.1. Overview and Hypotheses**

In previous chapters, we could not exclude the possibility that the content of ingroup and outgroup stereotypes partly accounted for the obtained results. So, in this chapter we tested if

outgroup dehumanization would emerge in the absence of cultural differences (auto and hetero-stereotypes) between ingroup and outgroup. If so, this would concur with previous findings (e.g. Demoulin et al., 2009; Kofta et al., 2014) that a meaningful ingroup-outgroup distinction suffices for outgroup dehumanization to occur. More importantly, we want to test if the moderation of outgroup dehumanization by social relations found in the previous chapters would also occur when the distinction between ingroup and outgroup is produced using a minimal setting.

Using an adaptation of the Klee-Kandinsky paradigm, participants were attributed to a quasi-minimal ingroup on the basis of their artistic preferences.

We hypothesize that participants attribute more humanness to ingroup than outgroup members. Moreover, we hypothesize that intergroup relations moderate humanness attributions to outgroup members. In study 9 we test the moderating role of CS, EM, MP compared to the absence of relation between the groups. In study 10 we test AR superior, AR inferior and EMR relations. Therefore, in study 10, we hypothesize that when intergroup relations involve group status, humanness attributions to both groups vary according to their relative status positions.

## **8.2. Study 9**

The goal of this study is to test if type of relation moderates the perceived humanness of ingroup and outgroup members, using a minimal group paradigm. We hypothesize that ingroup members will be attributed more humanness than outgroup members. More importantly, we hypothesize that participating in a relation with the ingroup would reduce dehumanization of outgroup members. According to what was found in the previous studies presented in this thesis, we predict that CS, EM and MP relations reduce overall outgroup dehumanization to the same extent.



## **8.2.1. Method**

### ***8.2.1.1. Participants and design.***

100 participants (65 female, mean age=21.80,  $SD = 5.02$ ) were recruited via e-mail, using social networks and approached at the University for a study on “Artistic preferences and impression formation”. They were randomly assigned to a (4 type of relation: communal sharing vs. market pricing vs. equality matching vs. no relation) between-subjects design.

### ***8.2.1.2. Procedure and materials.***

Participants entered one of two rooms in the laboratory. These rooms were connected by a partly covered two way mirror. This made it possible to see that the other room was being used without being able to see who was inside.

In individual sessions, participants were told that the purpose of the study was to test the association between people’s artistic preferences and the impressions they form regarding different situations. A modified Kandinsky versus Klee paradigm was used (Kofta et al., 2014). Each participant was shown six pairs of pictures of contemporary Portuguese painters and asked to choose the one in each pair that would best fit his/her personal taste. Immediately after the task was completed, participants were told he or she had chosen 83% of pictures painted by one artist and therefore they belonged to the group of people who preferred the paintings of José/Joana Aguiar (i.e. ingroup), whereas other people belonged to the group that preferred paintings by another painter: Mário/Maria Sousa (i.e. outgroup). Participants were then required to justify their choices in writing and then asked to guess which personal characteristics of people would be responsible for preferring one painter over the other.

After this, participants were told they would play a game with the participant in the other room. The goal of the task was to build a small city using a computer program. At this point the experimenter told the participant she needed to go to the other room in order to verify what result the other participant had in the artistic preference task. The experimenter returned almost a minute after with the alleged result written down in a paper sheet. She then opened one of a series of survey links and introduced a code composed by the session number and a series of letters and numbers, in order to make it seem more real that the participants' group was being taken into account. Participants then read some instructions on how they and the participant in the other room (always from the outgroup) should perform the task together. In the instructions, participants were told that they should establish a communal sharing (CSR), equality matching (EMR) or market pricing (MPR) interaction with the participant from the other group during the task, or that they should perform the task individually (no relation (NoR)). The full manipulation texts are presented in Appendix E.

In CSR the instructions they received specified that participants should work together and that they “should help each other every time you need to do so.” The materials available were said to be collective and to “belong to both of you together”. The work was also said to be collective as well as the points obtained in the task. Participants were also told that, if and when there would be need to make decisions, consensus should be reached.

In EM, participants were told that they may help the participant from the other group. However, s/he would later have to “reciprocate that help in the same manner and vice-versa”. Tasks were said to be of equal responsibility to each participant and the points obtained as well as the materials available were to be “divided in an equal manner”. Decision making was also said to follow egalitarian principles.

In MP, participants were told they should exchange with the other participant materials they had by others that were useful to the construction. “The materials exchanged should be of

proportional value to the materials taken (...) rendering the exchange advantageous for both...”. The tasks were said to be responsibility of each participant and the points obtained would be divided according to what each of them contributed to the task. Decision making should involve a cost-benefit analysis by each participant, in order for them to “understand what decision will be more convenient to each of you”.

In NoR, participants were instructed to “work in the construction of the city individually”. All tasks were their responsibility and the more constructions they completed the more points they would get”. Decision making was also said to be made individually.

The order of presentation of the measures described below was counterbalanced (ingroup first or outgroup first).

#### **8.2.1.3. Measures.**

Before starting the task, participants were asked to rate 16 sentences according to the extent to which these described the relation they would have with the participant from the other group. Four items were presented regarding the communal sharing relation (e.g.: “Members of each group should help each other mutually in the task without expecting anything in return.”), four regarding equality matching (e.g.: “Members of each group should split the points obtained in the tasks equally.”), four regarding market pricing (e.g.: “Members of a group should help those of the other group considering what they will receive/get in return.”) and two regarding no relation (e.g.: “The task will be performed individually” ). Participants responded on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree).

Participants responded to the following measures: word association task (adapted from Viki et al., 2006, to the Portuguese population), attitudes towards each group, representation

of the intergroup situation, identification with each group as well as human nature and human uniqueness items (adapted from Bastian, Jetten & Radke, 2012).

## 8.2.2. Results and Discussion<sup>11</sup>

### 8.2.2.1 Manipulation check.

Four indices were computed by aggregating the sentences in the three domains (resource distribution, division of labour and general terms) that corresponded to each type of relation between the two groups: CS ( $\alpha = .76$ ), EM ( $\alpha = .80$ ), MP ( $\alpha = .63$ ) and NoR ( $\alpha = .40$ ).

Type of sentence had a main effect on the extent to which participants considered that each sentence described the relation,  $F(2.20,211.56) = 142.08$ ,  $p < .001$ ,  $\eta_p^2 = .597$ . No significant type of relation main effect was found,  $F < 0.74$ .

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(6.61,211.56) = 2.52$ ,  $p = .019$ ,  $\eta_p^2 = .073$  (table 55). Planned contrasts were performed to verify if participants considered that those sentences that best described the relation corresponded to the type of relation condition they were in. Participants chose MP sentences to a greater extent in the MPR than in other conditions ( $t(96) = 2.06$ ,  $p = .042$ ), EM sentences to a greater extent in EMR than in other conditions ( $t(96) = 2.84$ ,  $p = .005$ ) and NR sentences in NoR than in other conditions ( $t(96) = 2.77$ ,  $p = .007$ ). No significant difference between conditions was found for the choice of CS sentences ( $t(96) = .79$ ,  $p = .434$ ). Therefore, our manipulation was only partially successful.

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<sup>11</sup> Analyses were not performed with gender in this study because the number of female participants ( $n=65$ ) was almost twice as much as the number of male participants ( $n = 35$ ). Analyses taking order of measures as a factor were performed for all dependent measures but yielded no relevant interaction effects. In Study 10, neither gender nor order of measures produced relevant interactions with our dependent variables.

Table 55. Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation, as a function of type of relation.

	Type of sentence			
	CS	MP	EM	NR
CSR	5.91 <sup>a,x</sup> (1.00)	4.41 <sup>a,y</sup> (1.35)	5.50 <sup>a,x</sup> (1.13)	2.52 <sup>a,z</sup> (1.26)
MPR	5.61 <sup>a,x</sup> (1.31)	5.21 <sup>a,x</sup> (1.28)	5.46 <sup>a,x</sup> (1.25)	2.56 <sup>a,y</sup> (1.11)
EMR	5.85 <sup>a,x</sup> (1.11)	4.76 <sup>a,y</sup> (1.31)	6.20 <sup>a,x</sup> (1.02)	2.70 <sup>a,z</sup> (1.38)
NoR	5.65 <sup>a,x</sup> (1.14)	4.53 <sup>a,y</sup> (1.36)	5.33 <sup>a,x</sup> (1.28)	3.38 <sup>a,z</sup> (1.13)

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xyz</sup> Different superscripts on the same condition indicate significant differences on the extent to which participants considered that each type of sentence described the relation.

#### 8.2.2.2. Outgroup dehumanization.

Three measures of humanness were used: human nature, human uniqueness and humanness in words.

Items for HN and HU were averaged into a single index for each group. We computed four indices: HN of the ingroup ( $\alpha = .71$ ), HN of the outgroup ( $\alpha = .74$ ), HU of the ingroup ( $\alpha = .62$ ) and HU of the outgroup ( $\alpha = .48$ ).

Regarding human and animal words, we first computed four indices: human related words attributed to the ingroup ( $M = 5.81$ ;  $SD = 1.64$ ), animal related words attributed to the ingroup ( $M = 2.58$ ;  $SD = 1.49$ ), human related words attributed to the outgroup ( $M = 5.09$ ;  $SD = 2.15$ ) and animal related words attributed to the outgroup ( $M = 3.35$ ;  $SD = 2.15$ ). The same

procedure as described in previous chapters was used to obtain a measure of humanness for the ingroup ( $M = 6.62$ ;  $SD = 1.53$ ) and the outgroup ( $M = 5.87$ ;  $SD = 2.12$ ).

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 4 (type of relation: CSR vs. MPR vs EMR vs. NoR) mixed GLM with type of relation as a between-subjects factor and type of measure and group as within-subjects factors was conducted on humanness attributions to the groups.

Significant main effects of type of measure,  $F(1.24, 118.71) = 64.89$ ,  $p < .001$ ,  $\eta_p^2 = .403$ , type of relation,  $F(2, 96) = 2.31$ ,  $p = .081$ ,  $\eta_p^2 = .067$ , and group,  $F(1, 96) = 41.02$ ,  $p < .001$ ,  $\eta_p^2 = .299$ , were found. Participants attributed more humanness to the ingroup ( $M = 5.72$ ;  $SD = 0.76$ ) than to the outgroup ( $M = 5.07$ ;  $SD = 0.95$ ). No significant interactions were found between type of relation and type of measure,  $F(3.71, 118.70) = 1.75$ ,  $p = .149$ ,  $\eta_p^2 = .052$ , group and type of relation,  $F < 0.12$  or group and type of measure,  $F < 0.22$ . Most importantly, no significant interaction between type of measure, group and type of relation was found,  $F(4.44, 142.10) = 2.92$ ,  $p = .145$ ,  $\eta^2 = .010$  (see table 56).

Table 56. Means (and standard deviations) of HN, HU, word attributions to the ingroup and outgroup, as well as outgroup dehumanization according to the type of relation.

	Ingroup			Outgroup			Outgroup dehumanization		
	HN	HU	Words	HN	HU	Words	HN	HU	Words
CSR	5.36 <sup>a,x</sup> (1.10)	5.53 <sup>a,x</sup> (0.87)	6.98 <sup>ab,x</sup> (1.28)	4.92 <sup>a,x</sup> (1.14)	4.58 <sup>a,y</sup> (0.86)	6.39 <sup>a,x</sup> (2.03)	0.43 <sup>a</sup> (1.45)	0.95 <sup>a</sup> (1.09)	0.60 <sup>a</sup> (2.18)
MPR	5.51 <sup>a,x</sup> (0.89)	5.30 <sup>a,x</sup> (0.97)	6.10 <sup>b,x</sup> (1.53)	4.54 <sup>a,y</sup> (0.98)	4.80 <sup>a,y</sup> (1.00)	5.90 <sup>a,x</sup> (2.03)	0.97 <sup>a</sup> (1.20)	0.50 <sup>a</sup> (0.97)	0.21 <sup>a</sup> (2.60)
EMR	5.06 <sup>a,x</sup> (1.00)	5.16 <sup>a,x</sup> (0.81)	7.24 <sup>a,x</sup> (1.26)	4.74 <sup>a,x</sup> (1.36)	4.70 <sup>a,y</sup> (0.73)	5.88 <sup>a,y</sup> (2.16)	0.32 <sup>a</sup> (1.24)	0.46 <sup>a</sup> (0.80)	1.36 <sup>a</sup> (2.12)
NoR	5.17 <sup>a,x</sup> (0.96)	5.16 <sup>a,x</sup> (0.87)	6.10 <sup>b,x</sup> (1.76)	4.48 <sup>a,y</sup> (0.75)	4.56 <sup>a,y</sup> (0.72)	5.30 <sup>a,x</sup> (2.23)	0.69 <sup>a</sup> (1.10)	0.60 <sup>a</sup> (0.92)	0.80 <sup>a</sup> (2.65)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the ingroup and outgroup on the same measure within the same condition indicate significant differences between humanness attributions to the ingroup and outgroup.

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 4 type of relation (CSR vs. MPR vs EMR vs. NoR) mixed GLM was conducted entering attitude towards the ingroup ( $M = 48.74$ ;  $SD = 34.61$ ) and attitude towards the outgroup ( $M = 25.72$ ;  $SD = 33.70$ ) as covariates on the attribution of humanness to groups. A significant main effect was found for attitude towards the outgroup,  $F(1,94) = 16.55$ ,  $p < .001$ ,  $\eta_p^2 = .150$ . Attitude towards the ingroup significantly interacted with group,  $F(1,94) = 7.13$ ,  $p = .009$ ,  $\eta_p^2 = .071$ , and type of measure,  $F(1.25,117.60) = 6.98$ ,  $p = .006$ ,  $\eta_p^2 = .069$ . Attitude towards the outgroup significantly interacted with group,  $F(1,94) = 5.12$ ,  $p = .026$ ,  $\eta_p^2 = .052$ .

More importantly, when controlling for attitudes towards the groups, our hypothesized interaction remained non-significant,  $F(4.44, 139.06) = 1.60, p = .172, \eta^2 = .010$ .

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs. humanness in words) x 4 type of relation (CSR vs. MPR vs. EMR vs. NoR) mixed GLM was conducted entering identification with the ingroup ( $M = 5.20; SD = 1.15$ ) and identification with the outgroup ( $M = 3.91; SD = 1.09$ ) as covariates on the attribution of humanness to groups. Identification with the ingroup significantly interacted with type of measure,  $F(1.22, 115.10) = 5.04, p = .020, \eta_p^2 = .051$ , and group,  $F(1, 94) = 6.52, p = .012, \eta_p^2 = .065$ .

More importantly, when controlling for identification with the groups, our hypothesized interaction remained non-significant,  $F(4.45, 139.34) = 1.67, p = .154, \eta^2 = .012$ .

### ***8.2.2.3 Attitude towards the groups.***

To verify if attitudes towards the groups varied as a function of our manipulation, we conducted a mixed GLM with type of relation as a between- subjects factor and group as a within-subjects factor (table 57). A significant main effect of group was found,  $F(1, 96) = 56.53, p < .001, \eta_p^2 = .371$ . Participants' attitude towards the ingroup was more positive than towards the outgroup. No significant main effect of type of relation,  $F < 0.63$  as well as no interaction between type of relation and group was reported,  $F < 0.35$ .



Table 57. Means (and standard deviations) of attitudes as a function of group and type of relation.

	Attitudes	
	Ingroup	Outgroup
CSR	51.15 <sup>a,x</sup> (35.31)	31.81 <sup>a,y</sup> (34.94)
MPR	52.13 <sup>a,x</sup> (34.08)	30.00 <sup>a,y</sup> (33.62)
EMR	42.88 <sup>a,x</sup> (36.22)	20.08 <sup>a,y</sup> (34.19)
NoR	48.84 <sup>a,x</sup> (34.12)	20.92 <sup>a,y</sup> (32.32)

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in attitudes towards the ingroup and outgroup.

#### 8.2.2.4. Representation of the intergroup situation.

A 3 groups' representation (one group vs. two groups vs. separate individuals) x 4 (type of relation: CSR vs MPR vs EMR vs NoR) mixed GLM with type of relation as a between-subjects factor and group representation as a within-subjects factor was conducted (table 58). A marginally significant interaction was reported,  $F(5.52,176.54) = 2.01$ ,  $p = .073$ ,  $\eta_p^2 = .059$ . Participants considered the "two group" representation to be less elicited by EMR than by MPR and NoR. Moreover, participants considered EMR to elicit less of a "two group" than a "one group" representation (although only marginally) and less than a "separate individuals" representation. No other difference was significant. No main effect of groups' representation was found,  $F < 0.70$  and no significant main effect of type of relation was reported,  $F < 0.75$ .

Table 58. Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
CSR	4.58 <sup>a,x</sup> (1.65)	3.73 <sup>ab,x</sup> (1.85)	3.88 <sup>a,x</sup> (1.84)
MPR	3.75 <sup>a,x</sup> (1.68)	4.17 <sup>b,x</sup> (1.86)	4.25 <sup>a,x</sup> (1.80)
EMR	4.16 <sup>a,xy</sup> (1.86)	2.80 <sup>a,x</sup> (1.80)	4.32 <sup>a,y</sup> (2.16)
NoR	3.88 <sup>a,x</sup> (1.69)	4.40 <sup>b,x</sup> (1.41)	3.68 <sup>a,x</sup> (2.21)

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between each representation of the intergroup situation on the same condition indicate significant differences between representations.

In regression analyses, we tested whether the “one group” representation predicted outgroup dehumanization. At a marginal level, it negatively predicted outgroup dehumanization in HN,  $\beta = -.18$ ,  $t(98) = -1.85$ ,  $p = .067$ ,  $R^2 = .03$ , but it did not in HU,  $\beta = -.04$ ,  $t(98) = -0.35$ ,  $p = .725$ ,  $R^2 = .00$ , or in the attribution of words,  $\beta = .03$ ,  $t(98) = 0.26$ ,  $p = .799$ ,  $R^2 = .00$ .

We then tested if each relation (dummy coded) significantly predicted the “one group” representation. CSR,  $\beta = .17$ ,  $t(98) = 1.65$ ,  $p = .102$ ,  $R^2 = .03$ , MPR,  $\beta = -.12$ ,  $t(98) = -1.14$ ,  $p = .257$ ,  $R^2 = .01$  and EMR,  $\beta = .02$ ,  $t(98) = 0.20$ ,  $p = .842$ ,  $R^2 = .00$ , did not significantly predict the “one group” representation.

Additionally, we tested if the relationship between each type of relation separately and outgroup dehumanization in HN, HU and humanness in words was mediated by a “one group” representation. No indirect effects were significant.

### 8.2.2.5. Identification with the groups.

To verify if identification with the groups varied as a function of our manipulation, we conducted a mixed GLM with type of relation as a between- subjects factor and the group as a within-subjects factor (table 59). A significant main effect of group was found,  $F(1,96) = 94.89$ ,  $p < .001$ ,  $\eta_p^2 = .497$ . Participants' identification with the ingroup was higher than with the outgroup. No significant main effect of type of relation,  $F(3,96) = 1.05$ ,  $p = .375$ ,  $\eta_p^2 = .032$ , as well as no interaction between type of relation and group was reported,  $F < 0.34$ .

Table 59. Means (and standard deviations) of identification with the ingroup and the outgroup according to the type of relation.

	Identification	
	Ingroup	Outgroup
CSR	5.35 <sup>a,x</sup> (1.16)	4.23 <sup>a,y</sup> (1.31)
MPR	5.21 <sup>a,x</sup> (1.18)	3.88 <sup>a,y</sup> (0.85)
EMR	4.96 <sup>a,x</sup> (1.43)	3.72 <sup>a,y</sup> (1.34)
NoR	5.28 <sup>a,x</sup> (0.74)	3.80 <sup>a,y</sup> (0.71)

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in identification with the ingroup and outgroup.

### 8.3. Study 10

CS, EM and MP were not found to moderate outgroup dehumanization in study 9. In Study 10 we test whether status differences between the groups would affect the extent to which

their members are perceived as human and the dimension of humanness chosen. We predict that status would moderate the perceived humanness of both ingroup and outgroup. High status groups are expected to be more humanized than low status groups, especially in HU terms. We do not have specific predictions on how status would affect HN attributions to the groups.

### **8.3.1 Method**

#### ***8.3.1.1. Participants and design.***

103 participants were recruited via e-mail, using social networks and approached on University campus for a study on “Artistic preferences and impression formation”. They were randomly assigned to a (3 type of relation: equality matching vs. authority ranking superior vs. authority ranking inferior) between-subjects design. One participant was excluded because of internet connection problems in the laboratory. Hence, 102 participants (49 females, mean age=22.67,  $SD = 5.47$ ) entered the analyses.

#### ***8.3.1.2. Procedure and materials.***

The procedure and materials were similar to those in study 9. The same manipulation text was used regarding EMR (equal status condition) and two others were introduced: AR superior and AR inferior. The manipulation texts for AR superior and AR inferior are also in Appendix E. In the AR superior condition, the ingroup (i.e. group Aguiar) was in a higher status position and the outgroup (i.e. group Sousa) in a lower status position. The ingroup was said to be responsible for supervising, selecting the materials and making decisions concerning the task to be performed by the participant from the other group. In the AR inferior condition, the ingroup was in a lower status position in relation with the outgroup (i.e.

group Sousa) and the ingroup was said to be responsible for the execution of the task and be under supervision from the participant from the other group.

### **8.3.1.3. Measures.**

The same measures were used as in Study 9. However, the order of presentation of measures differed: human nature and human uniqueness items were presented to participants immediately after the word association task. The order of the presentation of measures was counterbalanced (ingroup first or outgroup first).

## **8.3.2. Results and discussion**

### **8.3.2.1 Manipulation check.**

Two indices were computed by aggregating responses to the sentences in the three domains (resource distribution, division of labour and general terms) that corresponded to the type of relation between the two groups: AR ( $\alpha = .74$ ) and EM ( $\alpha = .88$ ).

A 2 (type of sentence: AR vs EM) x 3 (type of relation: AR superior vs AR inferior vs EMR) mixed GLM was conducted with type of relation as a between-subjects factor and type of sentence as a within-subjects factor.

Type of sentence had a main effect on the extent to which participants considered that each sentence described the relation,  $F(1,99) = 6.52$ ,  $p = .012$ ,  $\eta_p^2 = .062$ . No significant type of relation main effect was found,  $F < 0.39$ .

More importantly, a significant interaction effect between type of relation and type of sentence was found,  $F(2,99) = 38.92$ ,  $p < .001$ ,  $\eta_p^2 = .440$  (table 60). Contrasts were performed to verify if participants considered that the sentences that best described the relation corresponded to the type of relation condition they were in. Participants chose EM

sentences to a greater extent in the EMR than in all other conditions,  $t(98) = 5.69, p < .001$ ; and AR sentences to a greater extent in AR relations than in the EMR condition,  $t(98) = 8.90, p < .001$ . Our relational manipulation was successful.

*Table 60.* Means (and standard deviations) of the degree to which participants agreed that each type of sentence described the relation, as a function of type of relation.

	Type of sentence	
	AR	EM
AR superior	5.83 <sup>b,x</sup> (1.07)	3.91 <sup>b,y</sup> (1.62)
AR inferior	5.85 <sup>b,x</sup> (1.13)	3.97 <sup>b,y</sup> (1.84)
EMR	3.67 <sup>a,x</sup> (1.29)	5.81 <sup>a,y</sup> (1.16)

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .001$ , two-tailed). <sup>xy</sup> Different superscripts on the same condition indicate significant differences on the extent to which participants considered that each type of sentence described the relation.

### **8.3.2.2 Outgroup dehumanization.**

Three measures of humanness were used: human nature, human uniqueness and humanness in words.

Items for human nature and human uniqueness were averaged into a single index for each group. We computed four indices: HN of the ingroup ( $\alpha = .73$ ), HN of the outgroup ( $\alpha = .77$ ), HU of the ingroup ( $\alpha = .67$ ) and HU of the outgroup ( $\alpha = .77$ ).

Regarding human and animal words, we first computed four indices: human related words attributed to the ingroup ( $M = 6.10; SD = 1.85$ ), animal related words attributed to the ingroup ( $M = 2.36; SD = 1.83$ ), human related words attributed to the outgroup ( $M = 6.52; SD = 1.32$ )

and animal related words attributed to the outgroup ( $M = 1.82$ ;  $SD = 1.32$ ). The same procedure as described in previous chapters was used to obtain a measure of humanness for the ingroup ( $M = 6.87$ ;  $SD = 1.81$ ) and the outgroup ( $M = 7.35$ ;  $SD = 1.28$ ).

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 3 type of relation (AR superior vs. AR inferior vs EMR) mixed GLM with type of relation as a between-subjects factor and type of measure and group as within-subjects factors was conducted on the attribution of humanness to groups.

A significant main effect of measure was found,  $F(1.35,133.90) = 215.79$ ,  $p < .001$ ,  $\eta_p^2 = .686$ . No significant main effects of group,  $F(1,99) = 2.78$ ,  $p = .099$ ,  $\eta_p^2 = .027$ , or type of relation,  $F < 0.76$ , were found. No significant interactions between type of measure and type of relation,  $F < 0.53$ , group and type of relation,  $F < 0.06$ , were found.

A significant interaction was found between type of measure and group,  $F(1.85,183.85) = 12.08$ ,  $p < .001$ ,  $\eta_p^2 = .109$ . Simple mean comparisons (table 61) showed that participants attributed more humanness to ingroup than to outgroup members in HN and HU. However, participants attributed more humanness in words to outgroup than to ingroup members.

More importantly, our hypothesized interaction between type of measure, group and type of relation was not found,  $F(3.70,183.19) = 0.51$ ,  $p = .713$ ,  $\eta^2 = .002$ .

Table 61. Means (and standard deviations) of HN, HU, word attributions to the ingroup and outgroup, as well as outgroup dehumanization according to the type of relation.

	Ingroup			Outgroup			Outgroup dehumanization		
	HN	HU	Words	HN	HU	Words	HN	HU	Words
AR superior	5.13 <sup>a,x</sup> (0.98)	5.32 <sup>a,x</sup> (0.77)	7.02 <sup>a,x</sup> (1.62)	4.74 <sup>a,x</sup> (1.09)	4.75 <sup>a,y</sup> (0.98)	7.57 <sup>a,x</sup> (1.10)	0.39 <sup>a</sup> (1.39)	0.57 <sup>a</sup> (1.12)	-0.56 <sup>a</sup> (1.65)
AR inferior	5.07 <sup>a,x</sup> (1.22)	5.18 <sup>a,x</sup> (1.21)	6.69 <sup>a,x</sup> (1.81)	4.37 <sup>a,y</sup> (1.35)	4.86 <sup>a,x</sup> (1.21)	7.16 <sup>a,x</sup> (1.36)	0.71 <sup>a</sup> (1.31)	0.32 <sup>a</sup> (1.37)	-0.47 <sup>a</sup> (1.98)
EMR	5.32 <sup>a,x</sup> (1.15)	5.09 <sup>a,x</sup> (0.77)	6.90 <sup>a,x</sup> (2.01)	4.68 <sup>a,y</sup> (1.03)	4.96 <sup>a,x</sup> (0.97)	7.31 <sup>a,x</sup> (1.36)	0.63 <sup>a</sup> (1.57)	0.13 <sup>a</sup> (1.25)	-0.41 <sup>a</sup> (2.23)

Note: <sup>abc</sup> Conditions with different superscripts within one measure for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between the ingroup and outgroup on the same measure within the same condition indicate significant differences between humanness attributions to the ingroup and outgroup.

A 2 (group: ingroup vs. outgroup) x 3 (type of measure: HN vs. HU vs humanness in words) x 3 type of relation (AR superior vs. AR inferior vs EMR) mixed GLM was conducted entering attitude towards the ingroup ( $M = 53.75$ ;  $SD = 33.33$ ) and towards the outgroup ( $M = 33.21$ ;  $SD = 39.02$ ) as covariates on the attribution of humanness to groups.

A significant main effect was found for attitude towards the outgroup,  $F(1,97) = 22.22$ ,  $p < .001$ ,  $\eta_p^2 = .186$ . Attitude towards the ingroup significantly interacted with type of measure,  $F(1.38,133.66) = 5.46$ ,  $p = .012$ ,  $\eta_p^2 = .053$ , and attitude towards the outgroup significantly interacted with group,  $F(1,97) = 6.34$ ,  $p = .013$ ,  $\eta_p^2 = .061$ .



More importantly, when controlling for attitudes, our predicted interaction between group, type of measure and type of relation, remained non-significant,  $F(3.70,179.30) = 0.401$ ,  $p < .001$ ,  $\eta^2 = .001$ .

Analyses were also run entering identification with the ingroup ( $M = 5.02$ ;  $SD = 1.44$ ) and the outgroup ( $M = 3.97$ ;  $SD = 1.41$ ) as covariates on the attribution of humanness to groups. A significant main effect of identification with the outgroup was found,  $F(1,97) = 13.88$ ,  $p < .001$ , as well as a significant interaction between identification with ingroup and type of measure,  $F(1.37,132.65) = 4.66$ ,  $p = .022$ ,  $\eta_p^2 = .046$ .

More importantly, when controlling for identification, the hypothesized interaction between group, type of measure and type of relation remained non-significant,  $F(3.73,180.88) = 0.65$ ,  $p = .615$ ,  $\eta^2 = .002$ .

### **8.3.2.3. Attitudes towards the groups.**

To verify if attitudes towards the groups varied as a function of our manipulation, we conducted a mixed GLM with type of relation as between- subject factor and group as a within-subjects factor. A significant main effect of group was found,  $F(1,99) = 32.74$ ,  $p < .001$ ,  $\eta_p^2 = .249$ . Participants' attitude towards the ingroup was more positive than towards the outgroup. A marginally significant interaction between group and type of relation was found,  $F(2,99) = 2.61$ ,  $p = .079$ ,  $\eta_p^2 = .050$ . Simple mean comparisons (table 62) showed that participants' attitude towards the ingroup was more positive than towards the outgroup in ARR inferior and EMR but did not differ in ARR superior. No significant main effect of type of relation was found,  $F < 0.72$ .

Table 62. Means (and standard deviations) of attitudes as a function of group and type of relation.

	Attitudes	
	Ingroup	Outgroup
AR superior	52.29 <sup>a,x</sup> (33.65)	42.85 <sup>a,x</sup> (27.48)
AR inferior	53.03 <sup>a,x</sup> (40.25)	24.06 <sup>a,y</sup> (49.31)
EMR	55.91 <sup>a,x</sup> (25.31)	32.71 <sup>a,y</sup> (35.92)

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in attitudes towards the ingroup and outgroup.

#### 8.3.2.4. Representation of the intergroup situation.

To verify if group representation varied as a function of our manipulation, we conducted a mixed GLM with type of relation as a between-subjects factor and group representation as a within-subjects factor (table 63). A significant main effect of groups' representation was found,  $F(1.83,181.12) = 7.48$ ,  $p = .001$ ,  $\eta_p^2 = .070$ . Participants considered the relations as inducing more of a "one group" than a "two groups" or "separate individuals" representation. No difference was found between the "two group" and the "separate individuals" representation.

No significant interaction,  $F(3.66,181.12) = 1.63$ ,  $p = .173$ ,  $\eta_p^2 = .032$ , and no significant main effect of relation,  $F < 0.55$ , were found.

Table 63. Means (and standard deviations) of the representation of the intergroup situation according to the type of relation.

	Representation of the intergroup situation		
	One group	Two groups	Separate individuals
AR superior	4.68 <sup>a,x</sup> (1.87)	2.97 <sup>a,y</sup> (1.70)	3.56 <sup>a,xy</sup> (2.16)
AR inferior	4.00 <sup>a,x</sup> (2.27)	3.79 <sup>a,x</sup> (2.23)	4.00 <sup>a,x</sup> (2.32)
EMR	4.85 <sup>a,x</sup> (1.71)	3.26 <sup>a,y</sup> (1.93)	3.24 <sup>a,y</sup> (1.86)

Note: <sup>ab</sup> Conditions with different superscripts within one measure differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between each representation of the intergroup situation on the same condition indicate significant differences between representations.

In regression analyses, we tested whether the “one group” representation predicted outgroup dehumanization. It did not predict outgroup dehumanization, neither in HN,  $\beta = -.12$ ,  $t(100) = -0.12$ ,  $p = .903$ ,  $R^2 = .00$ , HU,  $\beta = -.07$ ,  $t(100) = -0.69$ ,  $p = .491$ ,  $R^2 = .02$ , or in the attribution of words,  $\beta = .06$ ,  $t(100) = 0.64$ ,  $p = .521$ ,  $R^2 = .00$ .

We then tested if each relation (dummy coded) significantly predicted the “one group” representation. AR inferior negatively predicted it at a marginal level,  $\beta = -.18$ ,  $t(100) = -1.86$ ,  $p = .066$ ,  $R^2 = .03$ , but AR superior did not,  $\beta = .06$ ,  $t(100) = 0.60$ ,  $p = .550$ ,  $R^2 = .00$ .

Additionally, we tested if the relationship between each type of relation (dummy coded) separately and outgroup dehumanization in HN, HU and humanness in words was mediated by a “one group” representation. No indirect effects were significant.

### 8.3.2.5. Identification with the groups.

To verify if identification with the groups varied as a function of our manipulation, we conducted a mixed GLM with type of relation as a between-subjects factor and group as a within-subjects factor (table 64). A significant main effect of group was found,  $F(1,99) = 56.55, p < .001, \eta_p^2 = .364$ . Participants' identification with the ingroup was greater than with the outgroup. No significant main effect of type of relation,  $F < 0.68$ , and no significant interaction between group and type of relation,  $F(2,99) = 2.08, p = .130, \eta_p^2 = .040$ , were found.

Table 64. Means (and standard deviations) of identification with the ingroup and the outgroup according to the type of relation.

	Identification	
	Ingroup	Outgroup
AR superior	5.21 <sup>a,x</sup> (1.07)	3.97 <sup>a,y</sup> (1.11)
AR inferior	4.62 <sup>a,x</sup> (1.89)	3.97 <sup>a,y</sup> (1.82)
EMR	5.24 <sup>a,x</sup> (1.16)	3.97 <sup>a,y</sup> (1.24)

Note: <sup>ab</sup> Conditions with different superscripts for the same group differ significantly from each other ( $p < .05$ , two-tailed). <sup>xy</sup> Different superscripts between ingroup and outgroup on the same condition indicate significant differences in identification with the ingroup and the outgroup.

#### **8.4. General Discussion**

In both studies, the outgroup was attributed less humanness than the ingroup. Our findings concur with previous findings of studies using minimal groups, in which outgroup dehumanization occurred (Cappoza et al., 2012; Kofta et al., 2014).

Moreover, contrary to what we had hypothesized, outgroup dehumanization in study 9 was not reduced by participating in a relation with the ingroup compared to when outgroup members did not take part in the relation.

It seems as if the distinction created in the laboratory setting was meaningful enough to produce outgroup dehumanization. However, the relational manipulation did not yield any significant differences between the groups. In previous chapters, we described studies with natural and fictional groups using scenarios (chapters 4, 5 and 7) and with natural groups (chapter 6). Our studies using scenarios used an extended contact setting, in which groups read about relations concerning ingroup members that had been involved in past and present relations or in fictional future ones with outgroup members. In studies 9 and 10, such contact (positive, functional, coordinated) never occurred between the groups. In our materials we just provided guidelines on how individuals should interact with members of the other group. These guidelines did not provide any information about the nature of that future interaction: positive, cooperative or conflictive, etc.. Moreover, we did not assess if or how participants actually imagined the relation would be. This anticipated interaction may have also been perceived as very limited in time and without continuity. Because of this it may have been deemed irrelevant for the perceived humanness of both ingroup and outgroup members.

But even if a different relational manipulation was used, in which ingroup and outgroup had actually interacted, social relations between quasi-minimal groups may never have had an effect on the perceived humanness of groups. Perhaps manipulating relations between groups

while limiting their interaction to a laboratory setting, may have eliminated the social and cultural context necessary for relations to humanize groups.

## **CHAPTER 9- Main Findings, Implications and Future Directions**

In this final chapter, we will start by restating the aim of this thesis, the main research questions and the methods used to address them. After that, we will summarize the main findings from the empirical studies presented in this thesis and discuss their implications. We will then address some limitations present in the current research as well as potential future developments in the paradigms here presented. Finally, some concluding remarks will take place.

### **9.1. Aim of the Thesis and Research Question**

In this thesis we aimed to test the idea that relatedness with others could constitute a fundamental dimension of humanness perception. The first goal of this research was to introduce a relational perspective to the dehumanization phenomenon. By introducing a relational perspective, we intended to examine in which conditions a reduction of outgroup dehumanization would occur. We suggested that recategorization of groups could be sufficient but not necessary for such a reduction. Moreover, if relatedness is indeed a dimension of humanness, then humanness of the ingroup could also be affected. Hence, a second goal of this thesis was to specify the conditions in which dehumanization of the ingroup, that is, less attribution of humanness to the ingroup than to the outgroup, could occur.

To address our two main goals, we conducted 10 studies.

In three studies we investigated whether the reduction of outgroup dehumanization occurs through the recategorization of ingroup and outgroup into a common uniting category or due to the relation in which these groups are involved. Participants were presented a description of one of two types of relation (communal sharing or market pricing) or no relation between an

ethnic ingroup and an outgroup of unknown origin (study 1) or between a foreign population and a group of unknown origin (study 2 and 3).

In three studies using scenarios with ethnic (studies 4 and 5) and fictional (study 6) groups and testing several intergroup relations (communal sharing, market pricing, authority ranking superior, authority ranking inferior and equality matching), we investigated to what extent each intergroup relation involving ingroup and outgroup members reduced outgroup dehumanization when compared to the absence of relation.

Because we were interested in testing if existing status relations between national groups would moderate the attribution of humanness to groups, in a laboratory study we presented participants with a description of an authority ranking relation with another national group, in which their ingroup was either in the superior or in the inferior position (study 7).

To address the conditions in which outgroup members could be attributed more humanness than ingroup members, in another study we used scenarios in which outgroup members were presented as being in relations with each other or not, while no relational information about the ingroup was presented (study 8).

Finally, in two lab studies, we tested whether anticipated relations between ingroup and outgroup members moderated outgroup dehumanization in a minimal group setting. Specifically, we examined if communal sharing, equality matching and market pricing relations reduced outgroup dehumanization when compared with the absence of relation between the groups (study 9). Using a similar paradigm, another study tested whether group status (superior, inferior or equal) moderated the dehumanization of outgroup members (study 10).



## **9.2. Summary of Major Hypotheses, Findings and Implications**

First of all, in most studies presented in this thesis participants attributed more humanness to their own group than the outgroup. This result replicates the common finding that humanness is more often used to describe members of one's own group than to describe outgroup members (Leyens et al., 2000). Importantly, though, outgroup dehumanization was not found in those conditions of study 8 that depicted relations only involving outgroup members, thus exposing participants to a situation in which outgroup members participate more in relations than ingroup members do. In EM and MP, participants even considered their ingroup as less human than outgroup members. While these unusual findings support the major hypothesis of this thesis, namely that dehumanization results from not perceiving targets as participating in social relations, one might argue that they could be explained by an alternative hypothesis: Given that the ingroup was fictional in this study, we do not know if participants were thinking about the fictional human population as their ingroup of Humans while assessing humanness of groups. Therefore, the ingroup may not have been considered meaningful enough for participants. Studies have shown that when ingroup identification is weak, group members dehumanize the outgroup to a lesser extent than when ingroup identification is strong (e.g.: Paladino et al., 2004). We would argue, however, that low identification is unlikely to be responsible for the absence of outgroup dehumanization in most conditions of study 8. In this study, participants' overall identification with the ingroup was greater than identification with the outgroup. In addition, identification with the ingroup and the outgroup did not moderate the attribution of humanness to the ingroup or the outgroup. Moreover, in study 6, the same fictional populations were used and a subtle dehumanization bias in favor of ingroup members was found. What indeed differed between these two studies was the ingroup's involvement in relations with outgroup members.

Participants in study 8 perceived ingroup members as equally or even less human than the outgroup when the ingroup did not participate in relations with members of the outgroup.

Interestingly, and unpredicted by our theoretical reasoning, such a reduction of outgroup dehumanization did not occur in studies 2 and 3, when two groups were involved in communal sharing and market pricing relations in which the ingroup (i.e. Italians) did not take part. One reason for this difference could pertain to the fact that, in studies 2 and 3, the ingroup in the manipulation scenarios was a real group and not a fictional one. The question as to whether ingroup dehumanization can be explained by identification with and meaningfulness of the ingroup or of the relational setting itself (in studies 2 and 3 relations were framed at the intergroup rather than the intragroup level) remains unanswered.

Most importantly, we found that relations moderated outgroup dehumanization. As we had hypothesized, outgroup members participating in relations reduced the dehumanization of the outgroup. Social relations in which the groups were involved were found to moderate the dehumanization of outgroup members in all studies (except 9 and 10). As expected, dehumanization of the Sequera, the Seibava and the Zyqrat, was reduced by all relations taken together when compared to the absence of a relation between ingroup and outgroup members.

This finding is in accordance with the distinction between relations and null relations in RMT (Fiske, 1991), given that in the latter people are not seen as potential interaction partners towards whom specific relational concerns are activated. Therefore, most of our results support the idea that relatedness may constitute a fundamental aspect of one's humanness.

One of our main goals was to question the hypothesis that the reduction of outgroup dehumanization would occur through the recategorization of ingroup and outgroup members in a common uniting category. Indeed, the one group representation only mediated the effect of CS (in studies 4-6) and EM (only in study 5). Because the one group representation did not mediate the effect of any other relation on outgroup dehumanization, recategorization cannot

account for the reduction of outgroup dehumanization. These findings go beyond those of previous studies (e.g.: Gaunt, 2009; Capozza et al., 2014) that suggest that the reduction of outgroup dehumanization occurs via recategorization of groups into a common ingroup identity. In the terminology of RMT, those previous studies have induced what one would consider as communal sharing relations with the ingroup. These studies show that relations that do not produce a one group representation and that are seen as less positive and collaborative than communal sharing relations can also reduce outgroup dehumanization.

Some interesting differences in dehumanization were found on the two dimensions of human nature and human uniqueness. These interactions with dimension were largely explained by the difference in humanness attributed to groups involved in authority ranking relations in which the ingroup was in a superior versus inferior position.

Thus, the most parsimonious explanation is that what matters for humanness attribution is the relational positioning of the target rather than whether it is an ingroup or outgroup; an explanation that is in line with our general claim of the importance of relations for humanization. All studies consistently showed that participants in high status groups attributed more human uniqueness to their group than to outgroup members. This finding was in line with studies linking status with competence (Vaes & Paladino, 2010, Miranda, Gouveia-Pereira & Vaes, 2010b) that found that higher status outgroups were seen as more human than lower status, less competent outgroups. Notably, in study 7, when asked to indicate a lower status outgroup involved in an authority ranking relation with the higher status ingroup, most participants indicated as lower status outgroups former Portuguese colonies (e.g. Brazil, Angola). As proposed by Bain (2014), perceiving one's group as having a stronger history of cultural achievements than other groups may lead ingroup members to see their group as more prototypical on the human uniqueness continuum than the outgroup.

Conversely, all studies showed that participants in lower status groups attributed more human uniqueness to the higher status outgroup than to the lower status ingroup. This superhumanization of outgroups on the human uniqueness dimension has been found in previous research with the Australian regarding a Chinese outgroup (Bain et al., 2009), Americans with reference to a British outgroup (Vaes, Heflick & Goldenberg, 2010), and blue-collar towards white-collar workers (Iatridis, 2013). Such results seem to be at odds with the motivation to hold a favorable ingroup image, which would generally prevent group members from dehumanizing their own group.

Results have been more diverse on the human nature than in the human uniqueness dimension. Sometimes, both dimensions go together. In the study with a Portuguese population and the Seibava (study 5), alongside human uniqueness, participants also attributed human nature to a greater extent to their high status ingroup than to outgroup members. It has been found that high status social groups are sometimes considered simultaneously high on one or both senses of humanness (Jones-Lumby & Haslam, 2005), which can further legitimize the status relation. Sometimes there is no dehumanization of the lower status outgroup on human nature. In the study with a fictional human population involved in a relation with the Zyqrats (study 6) and in the study with Portuguese participants concerning actual status relations with other national groups (study 7), participants did not differentiate their high status ingroup from the low status outgroup members in terms of human nature. Sometimes more human nature was attributed to the lower status outgroup. In the study with an Italian population and the Sequera (study 4), we found that participants in the high status group attributed more human nature to the low status outgroup. Bain and colleagues (2009) reported similar findings in a study in which the Chinese attributed higher human nature to the Australian outgroup and more uniquely human characteristics to their own group. Given that groups tend to emphasize the dimension of humanness in which they feel relatively more

prototypical and that provides them with the most advantageous comparison with outgroup members (Bain, 2014), one could assume that the human nature dimension is not as relevant to Italians and American participants as human uniqueness. This would also prevent higher status groups from getting into conflict with their value system and seem less discriminatory (Cambon and colleagues, 2014). Sometimes lower status ingroups attribute more human nature to their group than to the higher status outgroup. In the studies with the Portuguese (studies 5 and 7) and the American (study 6) populations, more human nature was attributed to the low status ingroup than to the high status outgroup. Low status groups have also been found to positively differentiate themselves in dimensions not related to status, such as warmth (e.g. Reichl, 1997). This latter result is in line with Social Identity Theory as a kind of creativity strategy; allowing lower status groups to keep a positive ingroup identity by dehumanizing the higher status outgroup in a dimension in which the comparison would be more favorable to them (e.g. Miranda et al., 2014).

Concerning intragroup relations between outgroup members, in which the ingroup was not involved, study 8 also revealed different humanizing effects of relations on each of the two dimensions of human nature and human uniqueness. All relations (although not significantly in AR) increased the perceived human nature of outgroup members, hence eliminating outgroup dehumanization (in comparison with the ingroup) that was found in the non relational condition. However, only EM and MP intragroup relations increased the perceived human uniqueness of the outgroup while CS and AR relations did not. This goes in line with the assumption in RMT that CS and AR are phylogenetically and ontogenetically older than EM and MP. Fiske (1991) mentions that primitives of social relations similar to CS and AR are observed in non-human animals. Observation of several species has suggested that some animals demonstrate altruism towards genetically similar individuals, such as parents, offspring and siblings. In participants' naïve biology such behavior might be interpreted as

similar to CS among humans. Moreover, patterns that could be interpreted as primitive forms of AR are also commonly represented among animals exhibiting dominance hierarchies (e.g.: Packer, 1979) such as social primates and other social mammals and birds (Cheney & Seyfarth, 1990). Therefore, participating in relations that are not perceived to be uniquely human may only increase the target group's perceived human nature but not its human uniqueness. Equivalents to rudimentary EM and MP relations, on the other hand, have not been consistently observed in non-human animals. Reciprocity among primates has been observed but Fiske (1991) claims that there is no evidence on whether an animal indeed intends to match the behavior of another. Moreover, there are no reports of turn-taking or balancing contributions. Concerning MP, Humans are the only species known to use money and proportions in their contributions. Therefore, EM and MP relations may be perceived as those in which only humans engage and, because of this, participating in these would not only increase the perceived human nature of those involved, but also their perceived human uniqueness.

Because in the previous studies, one can assume that the content of stereotypes concerning ingroup and outgroup partly accounted for the results, we also tested whether social relations would be able to moderate outgroup dehumanization using a minimal group paradigm (studies 9 and 10). Although the minimal group distinction created in the laboratory setting appeared to be meaningful enough to produce outgroup dehumanization, our relational manipulation was probably not strong enough for an effect to emerge. In both studies 9 and 10, we just provided instructions on how individuals should interact with outgroup members in a future task, but this interaction never took place. We informed participants on how they should proceed while playing with the member of the other group but we did not provide specific information about how that future interaction should be: positive, cooperative or conflictive, etc. Moreover, we did not assess what participants thought about how the relation would be.

This anticipated interaction may have also been perceived as very limited in time and therefore irrelevant for the perceived humanness of groups. It may also be reasonable to assume that removing the social context in our relational manipulation may have eliminated its effect. Relations do not exist without context. The way relations are established and implemented depends on the specific cultural context in which individuals or groups relate. In the absence of context, the group categorization created by our minimal group manipulation, was likely the only basis for the distinction between groups.

Another goal of this thesis was to verify if participation in a relation moderated the perceived humanness of ingroup members, thereby exploring if even the ingroup could be dehumanized. Apart from the particular case of status differences, which were discussed above, humanness attributions to the ingroup when involved in a relation with the outgroup (studies 4-6), were higher than in the absence of a relation. This finding strengthens our claim that participating in relations humanizes groups.

In sum, by focusing on the content of social relations *per se*, our studies highlight the importance of relatedness as a determinant in humanness perceptions of one's own group and other groups.

### **9.3. Limitations and Future Directions**

Although the studies presented in this thesis provide some evidence on the role of social relations in the perceived humanness of groups, some questions should be addressed in further studies.

One of such questions pertains to why relations reduced outgroup dehumanization. If the outgroup is humanized by relations in which the ingroup is not involved, as in study 8, then what is responsible for their humanization? One could assume that it may not be with whom they are in a relation with, but their perceived capacity to engage in relations that humanizes

the outgroup. However, if it is so, why was outgroup dehumanization not reduced in the studies (2 and 3) in which we presented relations between two outgroups? Why would intragroup relations humanize outgroup members to a greater extent than the absence of a relation, and why does the same not occur when intergroup relations take place between groups? Further studies should be run involving intragroup relations with natural or fictional groups that address the question whether groups that are not involved in relations are perceived as not being able to establish social relations (at the intra and intergroup level).

In this thesis, we only presented studies pertaining to positive and collaborative social relations. It would be interesting to understand to what extent transgressions, moral or relational, would contribute to (de)humanize a group, when compared to the absence of a relation.

Furthermore, the effect of social relations in the humanization of groups in a minimal group context should be explored to greater length. Perhaps the fact that participants only anticipated performing a task was not the most appropriate relational manipulation. The mere anticipation of a task, by giving participants guidelines to how they should engage in an interaction with a partner did not prove to be sufficient for reducing dehumanization. Studies should be performed in a laboratory setting using a relational manipulation that would involve an actual interaction (e.g. having a confederate present or using a virtual interaction with a relational partner) and not just an anticipation of a future relation. Such studies would allow us to understand if social relations in a minimal group context would be able to reduce outgroup dehumanization or, alternatively, if social relations need more social context in order to humanize groups.

In studies 6 and 8, we used a non-human outgroup (i.e. aliens) in order to have a baseline of low humanness. In further studies, we would like to test whether participating in relations would humanize other non-human groups (e.g. robots). For instance, presenting robots as



engaging in different relations either at the intragroup (i.e. within the same group of robots) or at the intergroup level (with humans, animals or other groups of robots) would increase the perceived humanness of those robots when compared to the absence of a relation. On one hand, these studies would provide a clearer test of whether intragroup and intergroup relations in which the ingroup is not involved humanize outgroup members. On the other hand, by selecting non-human groups differing in their degree of perceived human-likeness (e.g. physical appearance), one could understand how relations could humanize outgroups perceived as more or less human-like.

#### **9.4. Concluding Remarks**

Relatedness appears to be a fundamental aspect of humanness. This thesis provides initial evidence that the extent to which we perceive others as humans can in fact depend on the relation we have with them, or the way in which we perceive them as having the capacity to engage in social relations. Importantly, our own group's humanness is not a given or stable attribute, and may also be somewhat dependent on our involvement in social relations as well as on the asymmetries they entail. The subtle dehumanization bias in favor of the ingroup members is not universal. Although this finding is not new, it strengthens the notion that our perceived humanness is a relative rather than an absolute construct. It is therefore malleable and depends on context, on the target and we would add, on the relation with that target.

What makes us human then? Relations do.



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## Appendix A

### Materials used in Chapter 4 (studies 1 to 3)

#### Manipulation texts used in Study 1<sup>12</sup>

##### No relation

## > VISIONE

### Scoperta Antropologica nel Nord Italia

“Apri gli occhi sul mondo”: se c’è una disciplina che, più delle altre, risponde a questo imperativo è l’antropologia. Studiando la rete e la struttura delle relazioni sociali, l’antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l’antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli che coordina l’equipe di ricercatori, “sono sconosciute, mentre è più chiaro che non stabilirono nessuna relazione con la popolazione Italiana locale.”



Questo accadde con molta probabilità a causa della conformazione geografica del territorio che rendeva impossibile il passaggio, all’epoca, di alcune montagne.

“E’ senza dubbio che non ci fu nessuno scambio e relazione tra le due popolazioni” ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati che dimostrano come la popolazione Sequera e gli Italiani del posto non entrarono mai in contatto e non sapevano dell’esistenza reciproca. “La popolazione Italiana e la popolazione Sequera si sono quindi sviluppate autonomamente, senza entrare mai in relazione.” continua il Prof. Lucarelli.

Questa ricerca ha ricevuto un premio dall’associazione *Anthropology Today* con la motivazione “Questo studio è un ottimo esempio di come due popolazioni seppur geograficamente vicine non siano entrate in contatto e si siano sviluppate autonomamente.”

<sup>12</sup> In studies 2 and 3 the same texts were used, with the exception that the relation was between the Sequera and the Tasmanian populations and the discovery took place in Northern Tasmania (not Italy).

### **Translation:**

[Anthropological discovery in Northern Italy

“Open your eyes to the world!”: If there is a discipline that, more than others, responds to this need, it is anthropology. By studying the network and the structure of social relations, anthropology helps us know and understand populations and territories, both near and far. An example of how anthropology can give us a new look on the world comes from a study recently published in the journal *Modern Anthropology*. This research documented the presence, from the 1800, of the Sequera population, in an area of North Italy between the Alentini and Algarivi mountains.

“The exact origin of this population” says Prof. Lucarelli who coordinates the team of researchers, “is unknown, but it is clear that they did not establish any relation with the local Italian population.”

This probably occurred due to geographic conformities of the territory that, at the time, made passing through some mountains impossible.

“There is no doubt that there wasn’t any exchange or relation between the two populations”, Prof. Lucarelli explains, showing us part of the documents he analyzed, which show how the Sequera population and the local Italians never entered in contact and were not aware of each other’s existence. “The Italian and the Sequera populations therefore developed autonomously, without ever entering in relation.” Prof. Lucarelli continues.

This research received a prize from the Anthropology Today association with the justification “This study is a great example of how two populations, despite their geographical proximity, never entered in contact and developed autonomously.”]

## **VISIONE**

### **Scoperta Antropologica nel Nord Italia**

“Apri gli occhi sul mondo”: se c’è una disciplina che, più delle altre, risponde a questo imperativo, è l’antropologia. Studiando la rete e la struttura delle relazioni sociali, l’antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l’antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli che coordina l’equipe di ricercatori, “sono sconosciute, mentre è più chiaro il tipo di relazione che stabilirono con la popolazione Italiana locale”. Sin da subito i Sequeri e gli Italiani del posto sono entrati in contatto e hanno stabilito una relazione di condivisione.

“E’ senza dubbio una relazione, che noi antropologi, definiamo di condivisione” ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati che dimostrano come la popolazione Sequera e quella Italiana locale contribuivano con il loro lavoro e secondo le loro possibilità al benessere collettivo e come, allo stesso tempo, potevano prendere liberamente in accordo ai loro bisogni dalle risorse collettive ciò di cui necessitavano.



“Ad esempio se una famiglia, indipendentemente se fosse di Sequeri o Italiani, perdeva il raccolto, riceveva da chi aveva avuto un buon raccolto, indipendentemente se fosse un Sequero o un italiano, un aiuto per sopravvivere all’inverno” continua il Prof. Lucarelli.

Oltre al raccolto le popolazioni condividevano anche i momenti di festa e vari rituali. Per festeggiare il nuovo raccolto, le nascite, i matrimoni, ecc. Sequeri e Italiani organizzavano delle feste in cui seguendo il rituale mangiavano e danzavano assieme. Era anche abbastanza comune che ci fossero rapporti intimi e romantici (come ad es. matrimoni) tra gli Italiani e la popolazione Sequera.

“Un aspetto che ci ha stupito e su cui stiamo ancora indagando”, conclude il Prof. Lucarelli, “è che le relazioni tra queste due popolazioni sono rimaste tali fino ai nostri giorni.”

Questa ricerca ha ricevuto un premio dall’associazione *Anthropology Today* con la motivazione: “Questo studio è un ottimo esempio di come due popolazioni entrando in contatto abbiano creato sin da subito una relazione di condivisione.”

## **Translation:**

### Anthropological discovery in Northern Italy

“Open your eyes to the world!”: If there is a discipline that , more than others , responds to this need, it is anthropology. By studying the network and the structure of social relations, anthropology helps us know and understand populations and territories, both near and far. An example of how anthropology can give us a new look on the world comes from a study recently published in the journal *Modern Anthropology*. This research documented the presence, from the 1800, of the Sequera population, in an area of North Italy between the Alentini and Algarivi mountains.

“The exact origin of this population” says Prof. Lucarelli who coordinates the team of researchers, “is unknown, but it is clear the type of relation they established with the local Italian population.” Immediately the Sequera and the local Italians entered in contact and established a sharing relation.

“It is without a doubt a relation that we anthropologists define as a sharing one”, Prof. Lucarelli explains, showing us part of the documents he analyzed, which show how the Sequera population and the local Italians contributed with their work and according to their possibilities to the collective well-being and how, at the same time, they could freely take what they needed from the collective resources.

For example, if a family, regardless of being Sequera or Italian, lost their harvest, they would receive from those who had had a good harvest, despite being Sequera or Italians, a help to survive the winter.” Prof. Lucarelli continues.

Other than the harvest the populations also shared moments of celebration and several rituals. To celebrate the new harvest, births, weddings, etc...the Sequera and the Italians organized festivities in which, according to rituals, they would dance and eat together. Intimate and



romantic relations (e.g. marriages) between the Italians and the Sequera population were also quite common.

“An aspect that surprised us and that we are still investigating” Prof Lucarelli concludes, “is that the relations between these two populations remained the same to this day”.

This research received a prize from the Anthropology Today association with the justification “This study is a great example of how two populations entering in contact immediately established a sharing relation.”

## > VISIONE

### Scoperta Antropologica nel Nord Italia

“Apri gli occhi sul mondo”: se c’è una disciplina che, più delle altre, risponde a questo imperativo, è l’antropologia. Studiando la rete e la struttura delle relazioni sociali, l’antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l’antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli che coordina l’equipe di ricercatori, “sono sconosciute, mentre è più chiaro il tipo di relazione che stabilirono con la popolazione Italiana locale”. Sin da subito i Sequeri e gli Italiani del posto sono entrati in contatto e hanno stabilito una relazione di scambio economico.

“E’ senza dubbio una relazione, che noi antropologi, definiamo di scambio economico dove a governare è la logica del mercato” ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati che dimostrano come la popolazione Sequera e quella Italiana locale intrattenevano relazioni per lo più commerciali di acquisto e vendita di prodotti e beni.



“Per esempio dopo il raccolto, a cui ogni popolazione provvedeva per conto suo, Sequeri e Italiani si incontravano al mercato del grano dove la compravendita veniva preceduta da attività di negoziazione per stabilire il costo dei cereali. Il prezzo dipendeva dal raccolto e da altre considerazioni economiche e razionali (se ti do questo, cosa mi dai in cambio?), l’importante era che il prezzo pagato per le merci fosse ritenuto proporzionale alla quantità e qualità della merce che veniva ricevuta.” continua il Prof. Lucarelli.

Gli incontri tra la popolazione Sequera e la popolazione locale erano frequenti, ma riguardavano unicamente transazioni commerciali. Pertanto le loro interazioni erano guidate da considerazioni finanziarie e da un’analisi dei costi-benefici (mi conviene questo scambio?).

“Un aspetto che ci ha stupito e su cui stiamo ancora indagando”, conclude il Prof. Lucarelli, “è che le relazioni tra queste due popolazioni sono rimaste tali fino ai nostri giorni.”

Questa ricerca ha ricevuto un premio dall’associazione *Anthropology Today* con la motivazione “Questo studio è un ottimo esempio di come due popolazioni entrando in contatto abbiano creato sin da subito relazioni commerciali e governate da una logica di mercato.”

### **Translation:**

#### Anthropological discovery in Northern Italy

“Open your eyes to the world!”: If there is a discipline that , more than others , responds to this need, it is anthropology. By studying the network and the structure of social relations, anthropology helps us know and understand populations and territories, both near and far. An example of how anthropology can give us a new look on the world comes from a study recently published in the journal *Modern Anthropology*. This research documented the presence, from the 1800, of the Sequera population, in an area of North Italy between the Alentini and Algarivi mountains.

“The exact origin of this population” says Prof. Lucarelli who coordinates the team of researchers, “is unknown, but it is clear the type of relation they established with the local Italian population.” Immediately the Sequera and the local Italians entered in contact and established a relation of economic exchange.

“It is without a doubt a relation that we anthropologists define as an economic exchange ruled by market laws”, Prof. Lucarelli explains, showing us part of the documents he analyzed, which show how the Sequera population and the local Italians maintained mostly commercial relations of sales and acquisitions of products and goods.

For example, after the harvest, which each family performed on their own, the Sequera and the Italians, met at the cereal market where sales were preceded by negotiation activities to establish the cost of cereals. The price depended on the harvest and other economic and rational considerations (if I give you this, what will I get in return?); what was most important was that the price paid for the goods was proportional to the quantity and the quality of the merchandise received.” Prof Lucarelli continues.

Encounters between the Sequera and the local Italian population were frequent, but only involved commercial transactions. Therefore, their interactions were guided by financial considerations and cost-benefit analysis (is this exchange convenient for me?)

“An aspect that surprised us and that we are still investigating” Prof Lucarelli concludes, “is that the relations between these two populations remained the same to this day”.

This research received a prize from the Anthropology Today association with the justification “This study is a great example of how two populations entering in contact immediately created commercial relations governed by market laws.”

### **Manipulation check items**

Scegli le affermazioni che ti sembrano più appropriate a descrivere la relazione tra la popolazione Sequera e la popolazione Italiana/Tasmaniana. Nota bene più di una risposta può essere corretta. **[Select the sentences that seem most appropriate to describe the relation between the Sequera and the Italian/Tasmanian populations. Please note that more than one answer may be correct.]**

Una popolazione “si leverebbe il pane da bocca” per l'altra, se necessario. **[If needed, one population would take the bread off their mouths for the other (corresponds to the expression “giving the shirts off their backs”).]**

“Quello che è di una popolazione è anche dell'altra” ovvero c'è una relazione di condivisione. **[What belongs to one population also belongs to the other; therefore there is a sharing relation.]**

Se una popolazione ha bisogno di aiuto, l'altra va in suo soccorso. **[If one population needs help, the other goes to their rescue.]**

Le due popolazioni condividono cibo e rituali comuni. **[The two populations share food and common rituals.]**

La relazione consiste in “Acquistare e vendere” ovvero c’è una relazione di tipo economico. **[The relation consists of “Acquiring and selling”, it is therefore an economic relation.]**

“Se ti do questo, cosa posso avere in cambio?” in altri termini un’analisi dei costi-benefici guida le interazioni tra le due popolazioni. **[“If I give you this what will I get in return?”; in other words, a cost benefit analysis guides the interaction between the two populations.]**

Queste due popolazione non sono mai entrate in contatto. **[These two populations never entered in contact.]**

La relazione tra le due popolazioni va avanti unicamente perché conveniente per entrambi. **[The relation between the two populations exists solely because it is convenient for both.]**

La relazione tra le due popolazione viene valutata positivamente in quanto i vantaggi (o guadagni) sono maggiori degli svantaggi (o costi). **[The relation between the two populations is valued as positive as long as there are more advantages (or gains) than disadvantages (or costs).]**

Non vi era alcuna relazione tra i due gruppi. **[There was no relation between the two groups.]**

### Human and animal-related words

Qual è la tua prima impressione delle popolazioni descritte nell'articolo? Descrivi la popolazione Sequera/Italiana/Tasmaniana tramite delle associazioni. Dalla lista che segue seleziona 8-10 parole che a tuo parere caratterizzano la popolazione Sequera/Italiana/Tasmaniana. Metti una crocetta nel box accanto alle parole scelte. **[What is your first impression of the populations described in the article? Describe the Sequera/Italian/Tasmanian populations through the association. From the following list select 8-10 words that in your opinion characterize the Sequera/Italian/Tasmanian population. Put an X in the box next to the word you chose.]**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> ANIMALE [Animal]      | <input type="checkbox"/> ZAMPA [Paw]        | <input type="checkbox"/> SELVAGGIO [Wild]  |
| <input type="checkbox"/> CITTADINO [Citizen]   | <input type="checkbox"/> PEDIGREE           | <input type="checkbox"/> FACCIA [Face]     |
| <input type="checkbox"/> SPECIE [Species]      | <input type="checkbox"/> BRANCO [Herd]      | <input type="checkbox"/> NATURA [Nature]   |
| <input type="checkbox"/> GENTE [People]        | <input type="checkbox"/> BOCCA [Mouth]      | <input type="checkbox"/> CULTURA [Culture] |
| <input type="checkbox"/> CAPELLI [Hair]        | <input type="checkbox"/> ETNIA [Ethnicity]  | <input type="checkbox"/> CUCCILOLO [Cub]   |
| <input type="checkbox"/> METICCIO [Half-breed] | <input type="checkbox"/> ISTINTI [Instinct] | <input type="checkbox"/> PIEDE [Foot]      |
| <input type="checkbox"/> PERSONA [Person]      | <input type="checkbox"/> UMANO [Human]      |  |

### **Human characteristics**

La popolazione Sequera che è entrata in contatto con la popolazione Italiana/Tasmanian mi fa pensare a... (da 1=Per niente a 7=Del tutto) [**The Sequera population that has entered in contact with the Italian/Tasmanian population makes me think of...(from 1=Not at all to 7= Completely]**

1. Persone con modi di pensare ed emozioni elementari. [**People with basic ways of thinking and emotions.]**
2. Persone con una mente semplice. [**Simple-minded people.]**
3. Persone raffinate e di buona cultura per l'epoca. [**Refined people and with a good culture for the time.]**
4. Persone razionali e intelligenti. [**Rational and intelligent people.]**
5. Persone istintive. [**Instinctive people.]**
6. Persone con valori e sentimenti complessi. [**People with complex values and feelings.]**
7. A dei robot. [**Robots.]**

### **Attitudes towards the populations**

Ti chiediamo ora di indicare il tuo atteggiamento nei confronti delle due popolazioni.

Scegli il valore che meglio rappresenta il tuo atteggiamento sulla scala da -100 a + 100.

Nota bene che i valori da +20 a +100 indicano, in modo crescente, un atteggiamento sempre più positivo. Lo 0 indica un atteggiamento né negativo né positivo. I valori da -20 a -100 indicano, in modo crescente, un atteggiamento sempre più negativo. [**We now ask you to indicate your attitude towards the two populations. Select the value that best represents your attitude on a scale from -100 to +100. Please note that the values from +20 to +100**

correspond to a successively more positive attitude. 0 indicates a neither negative nor positive attitude. Values ranging from -20 to -100 correspond to a successively more negative attitude.]

Indica il tuo atteggiamento nei confronti della popolazione Sequera/Italiana/Tasmaniana.

Clicca sulla risposta che meglio rappresenta la tua opinione.

Nota bene che - 100 = DEL TUTTO NEGATIVO, 0 = NE' NEGATIVO NE' POSITIVO,

e + 100 = DEL TUTTO POSITIVO [Indicate your attitude towards the Sequera/Italian/Tasmanian population. Click on the option that best represents your opinion. Please note that -100=Completely negative, 0=Neither negative nor positive and +100=Completely positive.]

	-100 del tutto negativo	-80	-60	-40	-20	0 nè positivo nè negativo	20	40	60	80	100 del tutto positivo
Il tuo atteggiamento nei confronti di questa popolazione è:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Your attitude towards this population is:]



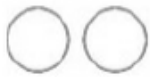
### **Representation of the intergroup situation**

Come descriveresti la relazione tra la popolazione Sequera e la popolazione Italiana/Tasmaniana? [**How would you describe the relation between the Sequera and the Italian/Tasmanian populations? (from 1= Completely disagree to 7=Completely agree)**]

Le due popolazioni formano un solo gruppo. [**The two populations constitute one single group.**]



Le due popolazioni formano due gruppi distinti e separati. [**The two populations constitute two separate and distinct groups.**]



Le due popolazioni non formano particolari gruppi, ma rappresentano piuttosto singoli individui. [**The two populations do not constitute particular groups but rather represent single individuals.**]



### Valence and collaboration in the relation

Descrivi sui seguenti aggettivi la relazione tra la popolazione Sequera e la Italiana/Tasmaniana. [Using the following adjectives describe the relation between the Sequera and the Italian/Tasmanian populations (from 1= Completely negative/conflicted to 7=Completely positive/collaborative).]

	Completamente negativa	Abbastanza negativa	Un pò negativa	Nè negativa nè positiva	Un pò positiva	Abbastanza positiva	Completamente positiva
La relazione tra le due popolazioni è.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Completamente conflittuale	Abbastanza conflittuale	Un pò conflittuale	Nè conflittuale nè collaborativa	Un pò collaborativa	Abbastanza collaborativa	Completamente collaborativa
La relazione tra le due popolazioni è.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[The relation between the two populations is:]

### Identification with Italians (used in Study1 and 2)

Le affermazioni che le saranno presentate nella prossima pagina riguardano il tuo sentirti Italiano. Ti preghiamo di rispondere a tutte le domande. Anche in questo caso non vi sono risposte giuste o sbagliate. Ti preghiamo di riportare la tua opinione. Indica ora il grado di accordo o disaccordo con le seguenti affermazioni indicando la tua risposta sulla scala presentata. [The sentences that will be presented in the next page refer to the extent you feel Italian. We ask you to respond to all the items. Also in this case, there are not right or wrong answers. We ask you to answer according to your opinion. Now indicate the degree to which you agree or disagree with the following sentences, responding to the scale presented below. (from 1= Not at all to 7= Very much).]

Per me è importante essere Italiano. **[For me it is important to be Italian.]**

Essere italiano è una parte importante della mia identità. **[Being Italian is an important part of my identity.]**

Ho forti legami con gli altri Italiani. **[I have strong ties with other Italians.]**

Mi identifico con gli Italiani. **[I identify with other Italians.]**

Mi sento Italiano. **[I feel Italian.]**

Sono contento di essere Italiano. **[I am happy to be Italian.]**

### **Identification with the populations (Study 3)**

In che misura t'identifichi con ciascuna delle popolazioni sotto? **[To what extent do you identify with each of the populations below? (from 1=Not at all to 7= Very much)]**

	Per niente						Moltissimo
Italiana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sequera	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tasmaniana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Appendix B

### Materials used in Chapter 5 (studies 4 to 6)

#### Manipulation texts used in study 4

#### AR superior.

## > VISIONE

### Scoperta Antropologica nel Nord Italia

“Apri gli occhi sul mondo”: se c’è una disciplina che, più delle altre, risponde a questo imperativo è l’antropologia. Studiando la rete e la struttura delle relazioni sociali, l’antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l’antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli, che coordina l’equipe di ricercatori, “sono sconosciute, mentre è più chiaro il tipo di relazione che stabilirono con la popolazione italiana locale”. Sin da subito i Sequeri e gli Italiani del posto sono entrati in contatto e hanno stabilito una relazione di autorità.

“È senza dubbio una relazione che, noi antropologi, definiamo di gerarchica”, ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati, che dimostrano come la popolazione Italiana del posto possedesse una posizione di privilegio in relazione ai Sequeri. I Sequeri rispettavano e obbedivano gli Italiani del posto che, a loro volta, proteggevano e si assumevano la responsabilità nei confronti dei Sequeri.



“Per esempio, durante il raccolto, gli Italiani dirigevano e controllavano il lavoro realizzato dai Sequeri. Allo stesso modo, la popolazione Italiana dava consigli ai Sequeri su alcuni metodi di coltivazione di cereali e di allevamento.”, continua il Prof. Lucarelli. Inoltre, in generale, i Sequeri rispettavano lealmente la volontà degli Italiani del posto, poiché consideravano la loro posizione di superiorità come completamente legittima.

“Un aspetto che ci ha stupito e su cui stiamo ancora indagando” conclude il Prof. Lucarelli “è che le relazioni tra queste due popolazioni sono rimaste tali fino ai nostri giorni.”

Questa ricerca ha ricevuto un premio dall’associazione *Anthropology Today* con la motivazione “Questo studio è un ottimo esempio di come due popolazioni entrando in contatto abbiano creato sin da subito una relazione di autorità.”

**AR inferior.**

## **VISIONE**

### **Scoperta Antropologica nel Nord Italia**

“Apri gli occhi sul mondo”: se c'è una disciplina che, più delle altre, risponde a questo imperativo è l'antropologia. Studiando la rete e la struttura delle relazioni sociali, l'antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l'antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli, che coordina l'equipe di ricercatori, “sono sconosciute, mentre è più chiaro il tipo di relazione che stabilirono con la popolazione italiana locale”. Sin da subito i Sequeri e gli Italiani del posto sono entrati in contatto e hanno stabilito una relazione di autorità.

“È senza dubbio una relazione che, noi antropologi, definiamo di gerarchica”, ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati, che dimostrano come la popolazione Sequera possedesse una posizione di privilegio in relazione agli Italiani del posto. Gli Italiani del posto rispettavano e obbedivano i Sequeri che, a loro volta, proteggevano e si assumevano la responsabilità nei confronti degli Italiani.



“Per esempio, durante il raccolto, i Sequeri dirigevano e controllavano il lavoro realizzato dagli Italiani. Allo stesso modo, la popolazione Sequera dava consigli agli Italiani su alcuni metodi di coltivazione di cereali e di allevamento.”, continua il Prof. Lucarelli. Inoltre, in generale, gli Italiani del posto rispettavano lealmente la volontà dei Sequeri, poiché consideravano la loro posizione di superiorità come completamente legittima.

“Un aspetto che ci ha stupito e su cui stiamo ancora indagando” conclude il Prof. Lucarelli “è che le relazioni tra queste due popolazioni sono rimaste tali fino ai nostri giorni.”

Questa ricerca ha ricevuto un premio dall'associazione *Anthropology Today* con la motivazione “Questo studio è un ottimo esempio di come due popolazioni entrando in contatto abbiano creato sin da subito una relazione di autorità.”

## **Translation of AR superior [AR inferior]**

Anthropological discovery in Northern Italy

“Open your eyes to the world!”: If there is a discipline that , more than others , responds to this need, it is anthropology. By studying the network and the structure of social relations, anthropology helps us know and understand populations and territories, both near and far. An example of how anthropology can give us a new look on the world comes from a study recently published in the journal *Modern Anthropology*. This research documented the presence, from the 1800, of the Sequera population, in an area of North Italy between the Alentini and Algarivi mountains.

“The exact origin of this population” says Prof. Lucarelli who coordinates the team of researchers, “is unknown, but it is clear the type of relation they established with the local Italian population.” Immediately the Sequera and the local Italians entered in contact and established an authority relation.

“It is without a doubt a relation that we anthropologists define as hierarchical”, Prof. Lucarelli explains, showing us part of the documents he analyzed, demonstrating how the local Italian/ [Sequera] population had a privileged position in relation to the Sequera/ [local Italians]. The Sequera/ [local Italians] respected and obeyed the local Italians/ [Sequera] which, in return, protected and took responsibility for the Sequera/ [Italians].

“For example, during the harvest, the Italians/ [Sequera] directed and controlled the work performed by the Sequera/ [Italians]. At the same time, the Italian/ [Sequera] population advised the Sequera/ [Italians] on cultivation methods and cattle raising techniques.”, Prof Lucarelli continues. Moreover, in general, the Sequera/ [local Italians] respected the will of the local Italians/[Sequera] with loyalty, because they considered their position as completely legitimate.

“An aspect that surprised us and that we are still investigating” Prof Lucarelli concludes, “is that the relations between these two populations remained the same to this day”.

This research received a prize from the Anthropology Today association with the justification “This study is a great example of how two populations entering in contact immediately created an authority relation.”



## > VISIONE

### Scoperta Antropologica nel Nord Italia

“Apri gli occhi sul mondo”: se c’è una disciplina che, più delle altre, risponde a questo imperativo, è l’antropologia. Studiando la rete e la struttura delle relazioni sociali, l’antropologia ci aiuta a conoscere e comprendere popolazioni e territori, vicini e lontani. Un esempio di come l’antropologia ci possa portare a un nuovo sguardo sul mondo viene da una ricerca pubblicata recentemente sulla rivista *Modern Anthropology*. In questa ricerca è stata per la prima volta documentata, a partire dal 1800, la presenza della popolazione Sequera in una area del Nord Italia compresa tra i monti Alentini e Algarivi.

“Le origini esatte di questa popolazione”, afferma il Prof. Lucarelli che coordina l’equipe di ricercatori, “sono sconosciute, mentre è più chiaro il tipo di relazione che stabilirono con la popolazione Italiana locale”. Sin da subito i Sequeri e gli Italiani del posto sono entrati in contatto e hanno stabilito una relazione di reciprocità.

“È senza dubbio una relazione che, noi antropologi, definiamo egualitaria, dove governa la logica della reciprocità”, ci spiega il Prof. Lucarelli mostrandoci parte dei documenti da lui analizzati che dimostrano come la popolazione Sequera e quella Italiana locale mantenessero relazioni nelle quali tutti ricevevano lo stesso, indipendentemente dai desideri e dalle necessità.



Per esempio, entrambe le popolazioni ricevevano lotti uguali di terreno. I Sequeri e gli Italiani del posto si consideravano uguali tra di loro, quindi, la giustizia risiedeva nella parità di trattamento e nella reciprocità equilibrata tra le due popolazioni. “Inoltre, durante il periodo di raccolta, alcuni lavoratori di una popolazione erano inviati ad aiutare quelli dell’altra popolazione. L’altra popolazione doveva in seguito ricambiare l’aiuto, inviando lo stesso numero di lavoratori per aiutare con il raccolto. Così, ciascuna delle popolazioni ricompensava nello stesso modo ciò che aveva ricevuto. Secondo i documenti esaminati, “i Sequeri e gli Italiani del posto hanno sempre cercato di trovare un equilibrio negli scambi che hanno condotto” continua il Prof. Lucarelli.

“Un aspetto che ci ha stupito e su cui stiamo ancora indagando”, conclude il Prof. Lucarelli, “è che le relazioni tra queste due popolazioni sono rimaste tali fino ai nostri giorni.”

Questa ricerca ha ricevuto un premio dall’associazione *Anthropology Today* con la motivazione “Questo studio è un ottimo esempio di come due popolazioni entrando in contatto abbiano creato sin da subito una relazione di uguaglianza, governata da una logica di reciprocità.”

## **Translation of EMR**

### Anthropological discovery in Northern Italy

“Open your eyes to the world!”: If there is a discipline that , more than others , responds to this need, it is anthropology. By studying the network and the structure of social relations, anthropology helps us know and understand populations and territories, both near and far. An example of how anthropology can give us a new look on the world comes from a study recently published in the journal *Modern Anthropology*. This research documented the presence, from the 1800, of the Sequera population, in an area of North Italy between the Alentini and Algarivi mountains.

“The exact origin of this population” says Prof. Lucarelli who coordinates the team of researchers, “is unknown, but it is clear the type of relation they established with the local Italian population.” Immediately the Sequera and the local Italians entered in contact and established a reciprocity relation.

“It is without a doubt a relation that we anthropologists define as egalitarian”, Prof. Lucarelli explains, showing us part of the documents he analyzed, demonstrating how the Sequera and the local Italian populations maintained relations in which everyone received the same, regardless of what they wanted or needed.

“For example, both populations received equal lots of land. The Sequera and the local Italians considered themselves equals; therefore, justice resided on equal treatment and balanced reciprocity between the two populations. “Moreover, during the harvest, some of the workers of one population would be sent to help those of the other population. Afterwards, the other population should reciprocate the help, sending the same number of workers to help with the harvest”. According to the documents examined, the “Sequera and the local Italians always tried to find a balance in the exchanges performed”, Prof Lucarelli continues.

“An aspect that surprised us and that we are still investigating” Prof Lucarelli concludes, “is that the relations between these two populations remained the same to this day”.

This research received a prize from the Anthropology Today association with the justification “This study is a great example of how two populations entering in contact immediately created a relation of equality, governed by reciprocity.”

#### **Manipulation check items Study 4:**

Pensando all' articolo che hai appena letto, ti chiediamo ora di indicare in quale misura le seguenti affermazioni sono appropriate per descrivere la relazione delle popolazioni Sequera e Italiana. In particolare le affermazioni riguardano la distribuzione delle risorse.

**[Thinking of the article you just read, we ask you now to indicate to what extent the following sentences are appropriate to describe the relation between the Sequera and the Italian populations. The sentences particularly concern resource distribution. (From 1= Not at all to 7= Very much)]**

Le risorse che le due popolazioni hanno a disposizione sono beni collettivi che appartengono sia alla popolazione Italiana sia alla popolazione Sequera. **[The resources that the two populations have available are collective goods that belong to both of them.] CSR**

La popolazione di status più elevato dà alla popolazione di status più basso le risorse di cui ha bisogno. **[The higher status population gives the lower status population the resources they need.] ARR**

Ogni popolazione riceve le stesse risorse, indipendentemente da quello che necessitano o vogliono. **[Each population receives exactly the same resources, regardless of what they needed or wanted.] EMR**

Quello che ogni popolazione riceve varia in proporzione a ciò che ogni popolazione dà.

**[What each population gives receives in proportion to what each population gives.] MPR**

Le due popolazioni non scambiavano risorse tra di loro. **[The two populations did not exchange resources between them.] Nord**

Ti chiediamo ora di indicare in che misura le seguenti affermazioni sono appropriate per descrivere la relazione tra i membri delle popolazioni Sequera e Italiana. In particolare le affermazioni riguardano la suddivisione del lavoro.

**[We ask you now to indicate to what extent the following sentences are appropriate to describe the relation between the members of the Sequera and Italian populations. The sentences particularly concern division of labor.]**

Tutti i compiti sono considerati responsabilità collettiva sia della popolazione Italiana sia della popolazione Sequera. **[All tasks are considered collective responsibility of both populations.] CSR**

La popolazione di status più elevato controlla e dirige il lavoro della popolazione di status più basso. **[The higher status population controls and directs the work performed by the lower status population.] ARR**

Ogni popolazione, in modo alternato, svolge compiti che corrispondono all'aiuto ricevuto dall'altra popolazione. **[Each population performs tasks in alternation that correspond to the help received by the other population.] EMR**

Per ogni popolazione è importante che l'importo pagato sia proporzionale a quello ricevuto.

**[For each population it is important that the price paid is proportional to that which it was received.] MPR**

Le due popolazioni non dividevano i compiti tra loro. **[The two populations did not share tasks between them.] NoR**

Infine, ti chiediamo di indicare in quale misura le seguenti affermazioni sono adeguate a descrivere la relazione in termini generali tra i membri delle popolazioni Sequera e Italiana.

**[Finally, we ask you to indicate to what extent the following sentences are adequate to describe the relation in general terms between the members of the Sequera and Italian populations.]**

La relazione tra le due popolazioni è basata sulla condivisione. **[The relation between the two populations is based on sharing.] CSR**

La relazione tra le due popolazioni è caratterizzata dal fatto che la popolazione di status più basso obbedisce alla volontà della popolazione di status più elevato. **[The relation between the two populations is characterized by the fact that the lower status population obeys the will of the higher status population.] ARR**

Nella loro relazione le due popolazioni cercano sempre una reciprocità equilibrata. **[In their relation, the two populations always search for a balanced reciprocity.] EMR**

La relazione tra le due popolazioni comporta sempre un'analisi dei costi-benefici. **[The relation between the two populations always involves a cost-benefit analysis.] MPR**

Non esiste alcun tipo di relazione tra le due popolazioni. **[There is no relation between the two populations.] NoR**

### **Measures of humanness used in study 4, Chapter 5**

#### **HN and HU items used in Study 4.**

Penso che la popolazione Sequera/Italiana:**[I think that the Sequera/ Italian population:]**

1. Era raffinata e colta. **[Was refined and cultured.] (HU)**
2. Non aveva auto-controllo come se fossero degli animali. **[Did not have self-control, as if they were animals.] (HU, reverse coded)**
3. Era razionale e logica come ci si aspetta dalle persone intelligenti. **[Was rational and logical, as expected from intelligent people.] (HU)**
4. Era di mentalità aperta, come ci si aspetta dalle persone che sono capaci di pensare in modo aperto alle cose. **[Was open-minded, as expected from people who are capable of thinking openly about things.] (HN)**
5. Non era sofisticata. **[Was not sophisticated.] (HU, reverse coded)**
6. Era emotiva, come ci si aspetta dalle persone sensibili e accoglienti. **[Was emotional, as expected from sensitive and warm people.] (HN)**
7. Era superficiale, in altri termini non era capace di profondità. **[Was superficial, or in other words, not capable of depth.] (HN, reverse coded)**
8. Era meccanica e fredda come se fossero dei robot. **[Was mechanical and cold as if they were robots.] (HN, reverse coded)**

### Human and animal-related words used in study 5<sup>13</sup>:

Human-related words	Animal-related words
Gente (People)	Potro (Foal)
Cabelos (Hair)	Crina (Horsehair)
Humano (Humano)	Animal
Pessoa (Person)	Pata (Paw)
Pé (Foot)	Espécie (Species)
Cidadão (Citizen)	Ninhada (Litter)
Solteiro (Bachelor)	Cauda (Tail)
Civil (Civilian)	Matilha (Pack)
Residente (Resident)	Instintos (Instincts)
Público (Public)	Habitat

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<sup>13</sup> All other materials and measures were the same as in study 4, but translated to Portuguese (and back translated to Italian). Human and animal words used differed because they were tested for the Portuguese population.

## **Manipulation texts used in study 6, Chapter 5**

### **Introduction.**

This is the future. Earth as we know it no longer exists. Changes in the atmosphere density made Earth increasingly vulnerable to the impact of asteroids. As a consequence, major industrial infrastructures were destroyed, including supplies of electrical power. Space-travel and communication with outer worlds ceased to exist. This incredible loss of technology led Human societies to fall back to an agricultural level.

Moreover, the severe climate changes that accompanied the lowered atmospheric density rendered some areas uninhabited for over one thousand years. Only recently some of those areas became suitable for Human life again. As a result, Humans started recolonizing them.

Hundreds of years ago, the Zyqrat, an alien population from a nearby galaxy, arrived to Earth. Due to an aircraft malfunction they were forced to land on Earth. During the landing there were several core damages in the aircraft, making it impossible for the Zyqrat to return to their planet and making further communications impossible. They settled in one of the many unpopulated areas on Earth. With time, the Zyqrat slowly strived. They started to increase in number and, generation after generation, they became more and more adapted to life on Earth.

### **CSR.**

As a consequence, they began spreading across the planet and they entered in contact with Humans.

The two populations then established a relation in which they shared experiences, activities and resources. When working together, both Humans and Zyqrats contributed with their



efforts and according to their possibilities to the collective well-being. At the same time and according to their needs, they could freely take what they needed from the collective resources.

For example, if a family, Human or Zyqrat, lost its harvest, it would receive help to survive the winter from those who had had a good harvest, regardless of them being human or Zyqrat,

Other than the harvest, the two populations also shared moments of celebration and several rituals. To celebrate the new harvest, births, weddings, etc., Humans and Zyqrats would organize festivities in which, according to the rituals, they would dance and eat together. It was also quite common for there to be intimate and romantic relations (ex. marriages) between Humans and Zyqrats.

### **AR superior.**

As a consequence, they began spreading across the planet and they entered in contact with Humans.

The two populations then established a relation characterized by status differences and exercise of authority. The Human population had a more privileged position than the Zyqrat. The Zyqrats respected and obeyed the Humans, which in turn, protected and took responsibility for the Zyqrats.

For example, during the harvest, the Human population directed and controlled the work done by the Zyqrat and was often in a better condition than them. Often, when a Zyqrat family lost its harvest, it would be allowed to work for Humans, thereby surviving the winter. The Human population also advised the Zyqrat on some cereal cultivation methods and cattle raising techniques.

Moreover, the Zyqrat generally respected the wishes of their Human patrons and showed loyalty, since they considered their position of superiority as fully legitimate.

### **AR inferior.**

As a consequence, they began spreading across the planet and they entered in contact with Humans.

The two populations then established a relation characterized by status differences and exercise of authority. The Zyqrat population had a more privileged position than the Humans. The Humans respected and obeyed the Zyqrat, which in turn, protected and took responsibility for the Humans.

For example, during the harvest, the Zyqrat population directed and controlled the work done by the Humans and was often in a better condition than them. Often, when a Human family lost its harvest, it would be allowed to work for the Zyqrat, thereby surviving the winter. The Zyqrat population also advised the Humans on some cereal cultivation methods and cattle raising techniques.

Moreover, the Humans generally respected the wishes of their Zyqrat patrons and showed loyalty, since they considered their position of superiority as fully legitimate.

### **EMR.**

As a consequence, they began spreading across the planet and they entered in contact with Humans.

The two populations then established a relation characterized by strong reciprocity in which they exchanged favors, gifts and tokens. Humans and Zyqrats considered the two

populations to be equal, following an egalitarian logic in which they applied reciprocity rules. The Humans and the Zyqrats made sure that they all would receive the same, regardless of what they needed or wanted.

For example, for new settlements, both populations received equal lots of land. If a family, Human or Zyqrat, lost its harvest, it would receive seeds and food to survive the winter from another family, regardless of them being Human or Zyqrat, but then it would return the same amount of seeds and food after the next summer. Humans and Zyqrats considered themselves as peers, therefore their interactions were based on equal treatment and balanced reciprocity between both populations. Moreover, to celebrate the new harvest, births, weddings, etc..., Humans and Zyqrats would organize festivities in which they would engage in sports games as well as contests. At the end, according to the rituals, Humans and Zyqrats exchanged gifts.

### **MPR.**

As a consequence, they began spreading across the planet and they entered in contact with Humans.

The two populations then established a relation of trade and economic exchange. Humans and the Zyqrats exchanged goods and services according to market rules, using a shared currency when selling and acquiring products and goods.

For example, if a family, Human or Zyqrat, lost its harvest, it would have the possibility to buy seeds and food to survive the winter from those who had had a good harvest, regardless of them being Human or Zyqrat. The price depended on the quality and quantity of what was purchased.

While the two populations never really mixed with one another, meetings between Humans and Zyqrats were frequent when rational cost-benefit analysis deemed them convenient and advantageous for both sides.

### **NoR.**

As a consequence, they began spreading across certain areas of the planet. However, they clearly did not establish a relation with the Human population.

Some regions of Earth were more affected by the impact of asteroids than others. The Zyqrats happened to have settled in a region in which there were massive impact craters that created narrowly spaced mountain ridges. The Zyqrats had tried before to explore other areas of the planet but the extent of the mountain ridges surrounding that region prevented them from reaching very far. Therefore, given the geographic conformities that characterized certain parts of the planet Earth, Humans and Zyqrats never had contact. As a consequence, Humans and the Zyqrats were unaware of each other's existence and developed autonomously on this planet.

### Human and animal-related words used in study 6

Human-related words	Animal-related words
Adolescent	Paw
Stranger	Critter
Resident	Wildlife
Race	Pet
Public	Breed
Folk	Pedigree
Maiden	Creature
Citizen	Tame
Civilian	Primal
Husband	Wild

### **HN and HU items used in studies 6 and 8**

I think that members of the **Human/Zyqrat** population:

HU1. are refined and cultured;

HU2. lack self-restraint, like animals; (reverse coded)

HU3. are rational and logical, like they are intelligent;

HN1. are open minded, like they can think openly about things;

HU4. are unsophisticated; (reverse coded)

HN2. are emotional, like they are responsive and warm;

HN3. are superficial, like they have no depth; (reverse coded)

HN4. are mechanical and cold, like robots; (reverse coded)

## Appendix C

### Materials used in Chapter 6 (study 7)

#### Manipulation sentences used in Chapter 6

A relação entre os Portugueses e os membros do outro grupo pode definir-se como sendo uma relação de autoridade percebida como legítima pelos Portugueses e membros do outro grupo.

**[The relation between the Portuguese and the members of the other group can be defined as an authority relation perceived as legitimate by the Portuguese and the members of the other group.]**

Os Portugueses /membros do grupo de estatuto mais elevado possuem um estatuto mais elevado e, como tal, dão aos membros do grupo de estatuto mais baixo os meios que estes necessitam. **[The Portuguese/members of the higher status group have a higher status, therefore giving the members of the lower status group the means they need.]**

Os Portugueses/membros do grupo de estatuto mais elevado controlam e dirigem as actividades dos membros do grupo de estatuto mais baixo. **[The Portuguese/members of the higher status group control and direct the activities of the members of the low status group.]**

Os Portugueses/membros do grupo de estatuto mais elevado têm a responsabilidade de garantir a protecção e defesa dos membros do grupo de estatuto mais baixo. **[The Portuguese/members of the higher status group have the responsibility of guaranteeing the protection and defense of the members of the lower status group.]**

Os membros do grupo de estatuto mais baixo/Portugueses obedecem e respeitam as vontades dos Portugueses/membros do grupo de estatuto mais elevado. **[The members of the lower status group/Portuguese obey and respect the will of the Portuguese/members of the higher status group.]**

**Names of groups indicated by participants in AR inferior:**

	Frequency	Valid Percent
Alemães	9	18.8
Brasileiros	1	2.1
Castelhanos	1	2.1
Chineses	1	2.1
Espanhóis	2	4.2
EUA	4	8.3
Governo	1	2.1
Governo Russo	1	2.1
Ingleses	5	10.4
Presidentes	1	2.1
República	1	2.1
Troika	2	4.2
União Europeia	19	39.6
Total	48	100.0



**Names of groups indicated by participants in AR superior:**

	Frequency	Valid Percent
Africanos	10	20.8
Angolanos	8	16.7
Antigas Colónias Portuguesas	5	10.4
Brasileiros	2	4.2
Cabo-Verdianos	1	2.1
Chineses	1	2.1
Colónias	3	6.3
Colónias Africanas	1	2.1
Crianças	1	2.1
Emigrantes	1	2.1
Escravos	3	6.3
Espanhóis	1	2.1
Ex-colónias	1	2.1
Filhos	1	2.1
Imigrantes	5	10.4
PALOP	3	6.3
Romenos	1	2.1
Total	48	100.0

### Relative status

Em relação aos Portugueses, em que medida considera que o grupo (indicado pelo participante) possui um estatuto: **[In relation to the Portuguese, do you consider the status of the group (indicated by the participant) as: (from 1=Very inferior to 7= Very superior, 4=Equal)].**

Muito inferior 1	2	3	Igual 4	5	6	Muito Superior 7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## **Appendix D**

### **Materials used in Chapter 7 (study 8)**

#### **Manipulation texts used in Chapter 7**

##### **Introduction.**

This is the future. Earth as we know it no longer exists. Changes in the atmosphere density made Earth increasingly vulnerable to the impact of asteroids. As a consequence, major industrial infrastructures were destroyed, including supplies of electrical power. Space-travel and communication with outer worlds ceased to exist. This incredible loss of technology led Human societies to fall back to an agricultural level.

Moreover, the severe climate changes that accompanied the lowered atmospheric density rendered some areas inhabited for over one thousand years. Only recently some of those areas became suitable for Human life again. As a result, Humans started recolonizing them.

Hundreds of years ago, the Zyqrat, an alien population from a nearby galaxy, arrived to Earth. Due to an aircraft malfunction they were forced to land on Earth. During the landing there were several core damages in the aircraft, making it impossible for the Zyqrat to return to their planet and making further communications impossible. They settled in one of the many unpopulated areas on Earth. With time, the Zyqrat slowly strived. They started to increase in number and, generation after generation, they became more and more adapted to life on Earth.

As a consequence, they began spreading across certain areas of the planet.

However, they clearly did not establish a relation with the Human population.

Some regions of Earth were more affected by the impact of asteroids than others. The Zyqrats happened to have settled in a region in which there were massive impact craters that created

narrowly spaced mountain ridges. The Zyqrats had tried before to explore other areas of the planet but the extent of the mountain ridges surrounding that region prevented them from reaching very far. Therefore, given the geographic conformities that characterized certain parts of the planet Earth, Humans and Zyqrats never had contact. As a consequence, Humans and the Zyqrat were unaware of each other's existence and developed autonomously on this planet.

### **AR intra.**

In their home planet, the Zyqrat established relations characterized by status differences and exercise of authority. Some Zyqrats had a more privileged position than other Zyqrats. Lower status Zyqrats respected and obeyed those with a higher status, which in turn, protected and took responsibility for the Zyqrats with a lower status.

For example, during the harvest, Zyqrats with higher status directed and controlled the work done by the lower status Zyqrats and were often in a better condition than them. Often, when a lower status Zyqrat family lost its harvest, it would be allowed to work for Zyqrats with higher status, thereby surviving the winter. Higher status Zyqrats also advised lower status Zyqrats on some cereal cultivation methods and cattle raising techniques. Moreover, the lower status Zyqrats generally respected the wishes of their patrons and showed loyalty, since they considered their position of superiority as fully legitimate.

### **MP intra.**

The Zyqrat established a relation of trade and economic exchange. They exchanged goods and services according to market rules, using a shared currency when selling and acquiring products and goods.

For example, if a family lost its harvest, it would have the possibility to buy seeds and food to survive the winter from those who had had a good harvest. The price depended on the quality and quantity of what was purchased.

While they met in other occasions, meetings between Zyqrats were most frequent when rational cost-benefit analysis deemed them convenient and advantageous for all those involved.

### **EM intra.**

The Zyqrat established relations characterized by strong reciprocity in which they exchanged favors, gifts and tokens. The Zyqrat considered every member of the population to be equal, following an egalitarian logic in which they applied reciprocity rules. The Zyqrat made sure that they all would receive the same, regardless of what they needed or wanted.

For example, for new settlements, every Zyqrat received equal lots of land. If a family lost its harvest, it would receive seeds and food to survive the winter from another family, but then it would return the same amount of seeds and food after the next summer. The Zyqrat considered all members of their population as peers, therefore their interactions were based on equal treatment and balanced reciprocity.

Moreover, to celebrate the new harvest, births, weddings, etc., the Zyqrat would organize festivities in which they would engage in sports games as well as contests. At the end, according to the rituals, the Zyqrat exchanged gifts among them.

### **CS intra.**

The Zyqrat often established relations in which they shared experiences, activities and resources. When working together, the Zyqrat contributed with their efforts according to their possibilities to the collective well-being. At the same time and according to their needs, they could freely take what they needed from collective resources.

For example, if a family lost its harvest, it would receive help to survive the winter from those who had had a good harvest.

Other than the harvest, the Zyqrat also shared moments of celebration and several rituals. To celebrate the new harvest, births, weddings, etc., they would organize festivities in which, according to the rituals, they would dance and eat together. It was not uncommon that such festivities marked the beginning of intimate and romantic relations (ex. marriages) between them.

## Appendix E

### Materials used in Chapter 8 (studies 9 and 10)

#### Manipulation texts used in Chapter 8

##### Introduction used in Studies 9 and 10

Você é o membro 34 do grupo Aguiar. **[You are member 34 of the Aguiar group.]**

Na sala ao lado daquela onde se encontra está um participante que é membro do grupo que prefere as pinturas de Mário Sousa. **[In the room next to this one there is a participant who is a member of the group that prefers Mário Sousa's paintings.]**

No final das tarefas, você e o membro 22 do grupo Sousa irão jogar um jogo que tem como principal objectivo a construção de uma pequena cidade. Este jogo será realizado em computador. No ecrã verá uma planta de uma cidade e uma grelha de lado onde poderá clicar no que pretende introduzir para construir a cidade, basta arrastar esse elemento para o sítio onde o quer colocar. **[At the end of the tasks, you and member 22 of the Sousa group will play a game that has the main objective of building a small town. This game will be played on the computer. On the screen you will see a plan of a city and a side grid where you can click on what you want to use to build the city; just drag that element to where you want to place it.]**

Cada participante disporá de um conjunto de diferentes materiais necessários para a construção de uma casa e de um jardim público que estarão igualmente dispostos na grelha. Nos materiais disponíveis constam alguns tijolos, telhas, bancos de jardim, sacos de cimento e sementes. Por cada construção completa receberá pontos. **[Each participant will have a different set of materials needed to build a house and a public garden that will also be displayed on the grid. The available materials consist of some bricks, tiles, garden**

**benches, bags of cement and seeds. For each complete construction you will receive points.]**

Na página seguinte dar-lhe-emos algumas indicações sobre como você e o membro 22 do grupo Sousa deverão proceder durante o jogo. **[On the next page we will give you some indications on how you and the member 22 of the Sousa group should proceed during the game.]**

Por questões metodológicas, nesta tarefa os membros do grupo Aguiar serão os supervisores e os membros do grupo Sousa os executantes. **[For methodological reasons, in this task the members of the Aguiar group will be supervisors and the members of the Sousa group the executors.]**

### **Manipulation texts used in study 9**

#### **CSR.**

Você e o membro 22 do grupo Sousa deverão trabalhar em conjunto na construção da cidade. Assim sendo, deverão ajudar-se mutuamente sempre que necessário, sem esperar nada em troca. Deverão partilhar os materiais de que dispõem, pois estes são bens colectivos que pertencem a ambos em conjunto. Cada um poderá retirar os materiais que necessita, independentemente daquilo que contribuiu. As tarefas são da vossa responsabilidade em conjunto e os pontos que fizerem pertencem a ambos. Sempre que seja necessário tomar decisões durante a realização da tarefa, você e o membro 22 do grupo Sousa deverão chegar a um consenso.

**[You and the member 22 of the Sousa group should work together on building the city. Therefore, you should help each other when needed, without expecting anything in**



**return. You should share the materials available, because these are collective goods that belong to both of you. Each of you may take the materials you need, regardless of what you have contributed. The tasks are your joint responsibility and the points you make belong to both of you. Whenever you need to make decisions during the course of the task, you and member 22 of the Sousa group should reach a consensus.]**

**EMR.**

Você e o membro 22 do grupo Sousa deverão trabalhar na construção da cidade. Assim sendo, poderá ajudar o outro membro, contudo, posteriormente esta terá de reciprocitar essa ajuda da mesma forma e vice-versa. Deverão dividir em partes iguais os materiais de que dispõem. Cada um poderá retirar os materiais que necessita. No entanto, se um retirar determinado material terá que repor exactamente o mesmo material e a quantidade que retirou. As tarefas são de igual responsabilidade de cada um e os pontos que fizerem serão divididos de igual modo. Sempre que seja necessário tomar decisões durante a realização da tarefa, você e o membro 22 do grupo Sousa deverão fazê-lo de forma igualitária.

**[You and member 22 of the Sousa group should work on building the city. Therefore, you may help the other member; however, he will then have to reciprocate this help in the same manner and vice versa. You should divide the materials available equally. Each of you may take the materials you need. However, if you take a given material you will have to put back exactly the same material and the quantity taken. The tasks are of equal responsibility of each of you and the points you make will be divided equally. Whenever you need to make decisions during the course of the task, you and member 22 of the Sousa group should do so in an egalitarian manner.]**

### **MPR.**

Você e o membro 22 do grupo Sousa deverão trabalhar na construção da cidade. Deverão trocar os materiais de que dispõem por outros que vos sejam úteis para a construção que estão a fazer. No entanto, os materiais que voltam a colocar na grelha têm de ser de valor proporcional aos materiais que retiram. Esta troca deverá ser vantajosa para ambos. As tarefas são da responsabilidade de cada um e os pontos que fizerem são divididos de acordo com o que cada um trabalhou para receber esses pontos. Sempre que seja necessário tomar decisões durante a realização da tarefa, você e o membro 22 do grupo Sousa deverão proceder a uma análise de custo – benefício, de forma a perceber qual a decisão que será mais conveniente para cada um de vós.

**[You and member 22 of the Sousa group should work on building the city. You should exchange the materials available for others that are useful to you in the construction. However, the materials that you put back on the grid must be of proportional value to the materials you take. This exchange should be beneficial to both. The tasks are the responsibility of each of you and the points you make are divided according to the work you put in to get those points. Whenever you need to make decisions during the course of the task, you and member 22 of the Sousa group should carry out a cost - benefit analysis, in order to understand what decision will be more convenient for each one of you.]**

### **NoR.**

Você deverá trabalhar na construção da cidade individualmente. Assim sendo, não terá qualquer objecto para além dos que são apresentados. Deverá recorrer aos objectos que dispõe, sendo que cada vez que adicionar um objecto, não poderá retirá-lo. Caso queira

adicionar novos objectos, terá de ter um determinado número de pontos. As tarefas são da sua responsabilidade e quanto mais construções completar mais pontos acumulará. Sempre que seja necessário tomar decisões durante a realização da tarefa, você deverá fazê-lo de forma individual.

**[You should work on building the city individually. Therefore, you will not have any objects other than those presented. You should use the objects available, and each time you add an object, you will not be able to remove it. If you want to add new objects, you must have a certain number of points. The tasks are of your responsibility and the more constructions you complete the more points you will accumulate. Whenever you need to make decisions during the course of the task, you must do so individually.]**

#### **Manipulation check items used in study 9**

Pensando nas instruções que leu anteriormente, pedimos-lhe agora que indique em que medida as frases seguintes lhe parecem apropriadas para descrever a relação esperada entre os membros do grupo Aguiar e do grupo Sousa. **[Thinking of the instructions you just read, we ask you now to indicate to what extent the following sentences seem appropriate to describe the expected relation between members of the Aguiar and the Sousa groups.]**

Os membros de cada grupo deverão ajudar-se mutuamente na realização das tarefas, sem esperar nada em troca. **[Members of each group should help each other in performing the tasks, without expecting anything in return.] CSR**

Os membros de cada grupo deverão partilhar entre si os materiais disponíveis. **[Members of each group should share the available materials between them.] CSR**

Os membros dos dois grupos deverão tomar decisões por consenso. **[Members of both groups should make decisions by consensus.] CSR**

Os pontos que os membros de cada grupo conseguirem pertencem a ambos. **[The points that members of each group obtain belong to both of them.] CSR**

Os participantes de cada grupo deverão retribuir a ajuda que recebem. **[Participants of each group should retribute the help they receive.] EMR**

Os membros de cada grupo deverão dividir os materiais que dispõem em partes iguais.

**[Members of each group should divide the materials they have in equal parts.] EMR**

Sempre que tomarem uma decisão, os membros de cada grupo deverão fazê-lo de forma igualitária. **[Whenever they make a decision, members of each group should do it in an egalitarian manner.] EMR**

Os membros de cada grupo deverão dividir de igual forma os pontos obtidos nas tarefas.

**[Members of each group should divide the points obtained equally.] EMR**

Os membros de um grupo deverão ajudar os membros de outro grupo tendo em conta o que irão receber em troca. **[Members of a group should help members of the other group taking into consideration what they will receive in return.] MPR**

É importante que os membros de cada grupo recebam materiais de valor proporcional àqueles que dão. **[It is important that members of each group receive materials of proportional value to those they give.] MPR**

Quando tiverem de tomar decisões, os membros de cada grupo deverão decidir através de uma análise de custo-benefício. **[When making decisions, members of each group should decide trough a cost-benefit analysis.] MPR**

A divisão dos pontos obtidos na realização das tarefas deverá ser feita de acordo com o que os membros de cada grupo contribuíram. **[The division of the points obtained in the tasks will be done according to what members of each group contributed.] MPR**

Não haverá qualquer relação entre os membros dos dois grupos. **[There will be no relation between members of the two groups.] NoR**

A tarefa será realizada de forma individual. **[The task will be performed individually.] NoR**

### **Manipulation texts used in study 10<sup>14</sup>**

#### **AR superior.**

Você e o membro 22 do grupo Sousa deverão trabalhar na construção da cidade. Você será responsável pela supervisão da tarefa e o membro 22 do grupo Sousa pela execução da mesma. Assim sendo, você dar-lhe-á indicações sobre como ele deve proceder.

Os materiais a serem utilizados serão seleccionados por si. Deverá escolher a ordem e forma de execução da tarefa e transmitir essa informação ao membro 22 do grupo Sousa. Sempre que decisões tenham de ser tomadas, será você enquanto membro do grupo Aguiar a tomá-las, podendo no entanto receber sugestões do membro do outro grupo. No final da tarefa ambos receberão pontos. Enquanto supervisor, receberá mais pontos que o membro do outro grupo.

**[You and member 22 of the Sousa group should work on building the city. You will be responsible for supervising the task and member 22 of the Sousa group for executing it. Therefore, you will give him directions on how he should proceed. The materials to be used will be selected by you. You should choose the order and manner of execution of the task and pass this information to member 22 of the Sousa group. Whenever decisions have to be made, as a member of the Aguiar group, you will be the one making them; however, you may receive suggestions by the member of the other group. At the end of**

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<sup>14</sup> The text used in the EMR condition was the same as in study 9.

**the task you will both receive points. As the supervisor, you will receive more points that the member of the other group.]**

**AR inferior.**

Você e o membro 22 do grupo Sousa deverão trabalhar na construção da cidade. Você será responsável pela execução da tarefa e o membro 22 do grupo Sousa pela supervisão da mesma. Assim sendo, este dar-lhe-á indicações sobre como você deve proceder. Os materiais a serem utilizados serão seleccionados pelo membro 22 do grupo Sousa. A ordem e forma de execução da tarefa serão escolhidas pelo membro 22 do grupo Sousa e essa informação ser-lhe-á transmitida a si. Sempre que decisões tenham de ser tomadas, será o membro do outro grupo a tomá-las, podendo no entanto receber sugestões suas. No final da tarefa ambos receberão pontos. Enquanto executante, receberá menos pontos que o membro do outro grupo.

**[You and member 22 of the Sousa group should work on building the city. You will be responsible for executing the task and member 22 of the Sousa group for supervising it. Therefore, he will give you instructions on how you should proceed. The materials to be used will be selected by member 22 of the Sousa group. The order and manner of task execution will be chosen by member 22 of the Sousa group and this information will be passed on to you. Whenever decisions have to be made, it will be the member of the other group who makes them; he may however receive your suggestions. At the end of the task both will receive points. As the executor, you will receive less points that the member of the other group.]**

### **Manipulation check items used in study 10**

Os participantes de um grupo são responsáveis pela supervisão e os do outro grupo pela execução da tarefa. [**Participants of a group are responsible for the supervision and those of the other group are responsible for the execution of the task.**] AR

Os membros de um grupo seleccionam os materiais que os membros do outro grupo vão usar na tarefa. [**Members of a group select the materials that members of the other group will use in the task.**] AR

Sempre que necessário, os membros de um grupo tomam as decisões e os membros do outro grupo podem contribuir. [**Whenever necessary, members of a group make the decisions and members of the other group may contribute.**] AR

Os membros de um grupo recebem mais pontos que os membros do outro grupo. [**Members of a group receive more points than members of the other group.**] AR

Os participantes de cada grupo retribuem a ajuda que recebem. [**Participants of each group retribute the help they receive.**] EMR

Os membros de cada grupo dividem os materiais que dispõem em partes iguais. [**Members of each group divide the available materials in equal parts.**] EMR

Sempre que tomam uma decisão, os membros de cada grupo fazem-no de forma igualitária. [**When making a decision, members of each group do it in an egalitarian manner.**] EMR

Os membros de cada grupo dividem de igual forma os pontos obtidos nas tarefas. [**Members of each group equally divide the points obtained in the tasks.**] EMR