

**Do you feel perceived as a full human
being when you are treated as a body?**

Do you feel perceived as a full human being when you are treated as a body?

The consequences for women's emotional reactions, interpersonal perceptions and relationships

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Table of contents

Table of contents	5
Abstract	9
Résumé.....	9
Remerciements	11
General Introduction.....	17
Chapter 1. Sexual objectification: Manifestation and consequences.....	23
1. <i>Theoretical underpinnings: objectification theories</i>	<i>25</i>
2. <i>Objectification theory (Fredrickson & Roberts, 1997)</i>	<i>26</i>
3. <i>Being the witness of sexual objectification.....</i>	<i>28</i>
3.1 The frequency of sexual objectification in mainstream media.....	29
3.2 Being the witness of sexual objectification: what are the consequences for women?	29
3.2.1 What are the consequences for the way women perceive their physical selves?.....	30
3.2.2 What are the consequences for women's sexual health?	33
3.2.3 What consequences for women's mental health?	34
3.2.4 What are the consequences for women's cognitive performance?	35
3.3 Being the witness of sexual objectification: what are the consequences for perceivers' perceptions?.....	36
3.3.1 The attribution of human traits to sexually objectified women	36
3.3.2 The cognitive processing of sexually objectified women	37
4. <i>Being personally targeted by sexual objectification.....</i>	<i>40</i>
4.1 The frequency of sexual objectification in social interactions	40
4.2 Being personally targeted by sexual objectification: what are the consequences for women?.....	42
4.2.1 What are the consequences for the way women perceive their physical selves?.....	42
4.2.2 What are the consequences for women's mental and sexual health?	44
4.2.3 What are the consequences for women's cognitive performance?	45
4.2.4 What are the consequences for interpersonal interactions?	46
5. <i>Conclusion.....</i>	<i>48</i>
Chapter 2. Dehumanization.	51
1. <i>Infra-humanization theory.....</i>	<i>53</i>
2. <i>The dual model of dehumanization: theoretical propositions</i>	<i>54</i>
3. <i>Dehumanization processes: the perpetrators' perspective</i>	<i>57</i>
3.1 Social categories targeted by dehumanization	57
3.2 What are the consequences of dehumanization?	59
4. <i>Dehumanization processes: the victims' perspective.....</i>	<i>61</i>
4.1 The antecedents of metadehumanization	62
4.2 The consequences of metadehumanization	64

Do you feel perceived as a full human being when you are treated as a body?

4.3	Self-dehumanization.....	66
5.	Conclusion.....	68
Chapter 3. Integrating literature on (sexual) objectification and dehumanization.....		69
1.	Research on (negative) meta-perceptions, self-perceptions, and others' perceptions	71
2.	The distinction between (sexual) objectification and dehumanization theories.....	75
3.	The perpetrators' perspective: from sexual objectification to dehumanization.....	76
4.	The victims' perspective: from sexual objectification to dehumanization	78
5.	Overview of the present dissertation	80
Chapter 4. My physical appearance at the center of others' concerns: What are the consequences for women's metadehumanization and emotions?.....		81
1.	Introduction	83
1.1	Sexual Objectification as a Focus on Physical Appearance.....	84
1.2	Metadehumanization and Focus on Physical Appearance	86
1.3	Emotional Consequences of Metadehumanization	87
1.4	Overview of the Studies	88
2.	Study I	89
2.1	Method.....	89
2.2	Results	90
2.2.1	Preliminary Analyses	90
2.2.2	Main Analyses.....	90
2.3	Discussion	91
3.	Studies 2a-b	92
3.1	Method.....	92
3.2	Results	93
3.2.1	Preliminary Analyses	93
3.2.2	Main Analyses.....	93
3.3	Discussion	94
4.	General Discussion	94
4.1	Limitations and Future Directions.....	96
4.2	Conclusion.....	98
Chapter 5. Being the target of sexually objectifying behaviors: What are the consequences for women's metadehumanization and interpersonal relationships?		99
1.	Introduction	101
1.1	Focus on Physical Appearance in Interpersonal Interactions.....	101
1.2	Focus on Physical Appearance: Its Relationships with Dehumanization Processes	103
1.3	The Consequences of Metadehumanization for Interpersonal Interactions ...	104
1.4	Linking Sexual Objectification to its Interpersonal Outcomes	105
1.5	Overview of Studies	105
2.	Study I	106
2.1	Method.....	106
2.2	Results	108

2.2.1	Preliminary Analyses	108
2.2.2	Main Analyses.....	109
2.2.3	Mediation Analyses.....	109
2.3	Discussion	110
3.	<i>Study 2</i>	111
3.1	Method.....	112
3.2	Results	113
3.2.1	Preliminary Analyses	113
3.2.2	Main Analyses.....	113
3.2.3	Mediation and Moderation Analyses	114
3.3	Discussion	117
4.	<i>Studies 3a and 3b</i>	117
4.1	Method.....	118
4.2	Results	119
4.2.1	Preliminary Analyses	119
4.2.2	Main Analyses.....	120
4.2.3	Mediations and Moderations Analyses	121
4.3	Discussion	122
5.	<i>General Discussion</i>	123
5.1	Limitations and Future Research.....	124
5.2	Conclusion.....	125
Chapter 6. How the attributions of human characteristics to the self and to others relate as a function of social interactions' valence.....		127
1.	<i>Introduction</i>	129
1.1	The Attribution of Human Characteristics to the Self.....	129
1.2	The Role of Social Projection in the Attribution of Characteristics to Other People.....	130
1.3	Dehumanization and Self-Dehumanization When Facing Sexual Objectification.....	131
1.4	Overview of the Studies	132
2.	<i>The Studies</i>	132
2.1	Method.....	132
2.2	Results and Discussion	133
2.2.1	Preliminary Analyses	133
2.2.2	Main Analyses.....	134
3.	<i>General Discussion</i>	134
3.1	Limitations and Future Research.....	135
3.2	Conclusion.....	136
Chapter 7. Sex-based and beauty-based objectification: Metadehumanization and emotional consequences among victims.....		137
1.	<i>Introduction</i>	139
1.1	Dehumanized Perceptions and Appearance Focus.....	139
1.2	Perceiving a Focus on One's Physical Appearance: Metadehumanization ...	140
1.3	Overview of the Studies	142
2.	<i>Study 1</i>	142
2.1	Method.....	142

Do you feel perceived as a full human being when you are treated as a body?

2.2	Results	143
2.2.1	Preliminary Analyses	143
2.2.2	Main Analyses	143
2.3	Discussion	145
3.	<i>Study 2</i>	146
3.1	Method	146
3.2	Results	147
3.3	Discussion	150
4.	<i>Studies 3a-b</i>	151
4.1	Method	151
4.2	Results	152
4.3	Discussion	156
5.	<i>Integrative Data Analyses</i>	156
6.	<i>General Discussion</i>	157
6.1	Limitations and Futures Directions	159
6.2	Conclusion	160
Chapter 8. General Discussion		161
1.	<i>The main objectives of the present thesis</i>	164
2.	<i>Summary of the research findings</i>	166
3.	<i>Limitations and perspectives for future research</i>	169
3.1	Broadening perspectives on interpersonal sexual objectification	169
3.1.1	The manipulation of interpersonal sexual objectification experiences	170
3.1.2	The investigation of interpersonal sexual objectification's consequences among men	172
3.1.3	The influence of perpetrators' characteristics and participants' sexual orientation	172
3.2	Bringing more precision to the dehumanization literature	174
3.2.1	What is the causality between metadehumanization, reciprocal dehumanization, and self-dehumanization?	174
3.2.2	The dimensions of dehumanization	176
3.2.3	The four declinations of metadehumanization	179
3.2.4	The diversity of dehumanizing perceptions: dehumanization, metadehumanization, self-dehumanization	182
3.3	Integrating literatures on sexual objectification and metadehumanization to investigate women's coping strategies	183
4.	<i>Conclusion</i>	185
References		187
Annexes		217
1.	<i>Supplementary Material: Chapter 7</i>	217

Abstract

Sexual objectification and dehumanization theories have received little empirical attention on two specific aspects. First, research on interpersonal manifestations of sexual objectification remains limited and provides little information about the consequences of objectifying behaviors on women's perceptions, namely, on how they believe to be perceived by others. Second, in the field of dehumanization, the study of dehumanizing perceptions from the victims' point of view, namely metadehumanization, as well as its consequences has long been neglected. Thus, in order to fill these gaps, the present thesis aims to investigate the consequences of sexual objectification when occurring in interpersonal contexts on women's perceptions of being treated as full human beings (i.e., metadehumanization). We also study the impact of sexual objectification, via metadehumanization, on various consequences such as emotional reactions, interpersonal perceptions and relationships.

Résumé

Les théories de l'objectification sexuelle et de la déshumanisation ont fait l'objet de peu de recherches empiriques sur deux aspects précis. D'une part, les recherches sur les manifestations interpersonnelles de l'objectification sexuelle restent limitées et n'apportent que très peu de connaissances quant à l'impact des comportements objectifiants sur les perceptions des femmes, notamment sur la manière dont elles pensent être perçues par autrui. D'autre part, dans le domaine de la déshumanisation, l'étude des perceptions de déshumanisation du point de vue des victimes, c'est-à-dire la metadéshumanisation, ainsi que ses conséquences a longtemps été délaissée. Aussi, afin de combler ces lacunes, la présente thèse se propose d'investiguer les conséquences de l'objectification sexuelle, lorsqu'elle se produit dans le cadre de relations interpersonnelles, sur les perceptions des femmes d'être traitées comme des êtres humains à part entière (i.e., la metadéshumanisation). Nous étudions aussi l'impact de l'objectification sexuelle, via la metadéshumanisation, sur diverses conséquences telles que les réactions émotionnelles, les perceptions et relations interpersonnelles.

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General Introduction

General Introduction

In the last few decades, the term *objectification* has been increasingly used and has been employed to refer to very different concepts. Objectification became the generic term to refer to the treatment of a person as an object (Nussbaum, 1995), utilization of someone to achieve one's goals (e.g., Gruenfeld, Inesi, Magee, & Galinsky, 2008; Orehek & Weaverling, 2017), focus on physical appearance (e.g., Heflick & Goldenberg, 2009; Heflick, Goldenberg, Cooper, & Puvia, 2011), and sexualization (e.g., Holland & Haslam, 2013). In the huge majority of theories and conceptualizations, the notion of instrumentalization takes a central position (e.g., Gruenfeld et al., 2008; Nussbaum, 1995; see also, Dworkin, 1987; Kant, 1996; MacKinnon, 1987, 1989). Hence, objectification appears in all contexts in which people may or can be used as objects to achieve people's needs and goals, such as slavery or in the workplace. For instance, because of capitalism, workers are valued by their organizations as a function of their skills and capacities to produce wealth and satisfy organizational goals (Marx, 1944). Objectification has also been thought to occur when people have sexual intercourse outside monogamous marriage (Kant, 1996). Therefore, the term *sexual objectification* has been introduced, and scholars state that women are particularly at risk of such objectification due to the importance allocated to their physical appearance and bodies.

Sexual objectification mainly refers to situations in which "people's bodies, body parts or sexual functions are separated out from their identity, reduced to the status of mere instruments, or regarded as if they were capable of representing them" (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998, p.269). Both genders are subject to sexual objectification (Daniel & Bridges, 2010; Wiseman & Moradi, 2010), but women are more likely to experience sexual objectification and their consequences (Engeln-Maddox, Miller, & Doyle, 2011; Strelan & Hargreaves, 2005). Objectification theory (Fredrickson & Roberts, 1997) proposes that the focus on women's physical appearance, bodies, or sexual body parts occurs either through mainstream media or interpersonal and social interactions (Fredrickson & Roberts, 1997). The manifestation of sexual objectification in interpersonal settings is commonplace for women and is communicated through various means (e.g., appearance-related comments, gazes, catcalls, etc.). Despite the fact that women are frequently exposed to sexually objectifying behaviors in social interactions, the study of the consequences of such experiences remains underdeveloped (Gervais, Sáez, Riemer, & Klein, 2020). Specifically, the study of women's (interpersonal) perceptions following sexual objectification in social exchanges needs to be further investigated.

Taking into consideration past studies showing that sexually objectified women are denied human characteristics (e.g., Heflick & Goldenberg, 2009; Morris, Goldenberg, & Boyd, 2018; Rudman & Mescher, 2012; Vaes, Paladino, & Puvia, 2011), dehumanization appears to be a good conceptual framework to investigate women's perceptions when sexually objectified. Hence, we will examine whether interpersonal sexual objectification

affects women's meta-perceptions on the dehumanization dimension, that is, whether they think they are viewed as less than fully human by their interlocutor (i.e., metadehumanization). The literature exploring the consequences of (negative) meta-perceptions and metadehumanization leads us to explore the various consequences of such perceptions. As long as negative meta-perceptions have damaging consequences for individuals' emotions, and interpersonal perceptions and behaviors, the investigation of such outcomes appears particularly relevant. Consequently, the present dissertation examines whether sexual objectification in interpersonal encounters affects women's perceptions of being viewed as full human beings by perpetrators (i.e., metadehumanization), as well as its consequences for emotional reactions and interpersonal perceptions and behaviors. More precisely, the main question of the thesis is the following: do women feel dehumanized by someone else focusing on their physical appearance through, for instance, appearance comments or insistent gazing?

The present dissertation encompasses both theoretical and empirical chapters. Chapter 1 reviews the current theories in the domain of sexual objectification and studies that have examined its consequences in light of the theoretical assumptions of objectification theory (Fredrickson & Roberts, 1997). Specifically, we mention research that investigated either the consequences of sexual objectification in the media or in interpersonal settings. Then, considering the attribution of fewer human characteristics to sexually objectified women, we review the literature on dehumanization and its antecedents and consequences from the perpetrators' and victims' perspectives (Chapter 2). Chapter 3 aims at connecting research findings reported in Chapters 1 and 2 and proposes that interpersonal sexual objectification can be considered as an antecedent of metadehumanization. To support this research proposal, we reviewed the existing literature on interpersonal and intergroup meta-perceptions.

Then, empirical studies and research findings of the present thesis are reported in Chapters 4, 5, 6 and 7. These chapters help us to answer some of the questions raised in the first three theoretical chapters. Specifically, Chapter 4 reports research findings of studies in which we investigated sexual objectification experiences and their consequences for women's metadehumanization and emotions. We manipulated sexual objectification experiences through a focus on women's physical appearance in fictitious interpersonal encounters and then assessed metadehumanization and negative emotions. Chapter 5 investigates the interpersonal consequences of sexual objectification experiences, as well as the mediating role of metadehumanization. In particular, we examined the dehumanized perceptions of the perpetrator and the motivation to interact with him or to display pro-social behaviors following sexual objectification. The relationship between the attributions of human characteristics to the self and to others as a function of interactions' valence was then investigated in Chapter 6. Precisely, we measured women's self-dehumanization and dehumanization of their interlocutor following a situation in which they were sexually objectified compared to a control condition. Chapter 7 then considers a new distinction proposed in the literature: sex-based and beauty-based objectification. According to Morris et al. (2018), women may be objectified either through a focus on their sexual body parts

(i.e., sex-based objectification) or through a focus on their beauty and physical appearance as a whole (i.e., beauty-based objectification). Past studies have shown that from the perpetrators' perspective, these two kinds of objectification are associated with specific dimensions of dehumanization. Particularly, sex-based objectification induces an animalization of women whereas beauty-based objectification induces a mechanization of women (Morris et al., 2018). Hence, this last empirical chapter examines if such correlates are found when investigating the women's perspective, that is, women's perceptions of being dehumanized when objectified (i.e., metadehumanization).

Finally, a general discussion of the present thesis is presented in Chapter 8, which first relates the main objectives and research findings of our work and then discusses the main limitations of our research and suggests new perspectives for future research. In particular, we mention research perspectives in order to better apprehend the full spectrum of sexual objectification processes and how future research might address the current limitations related to metadehumanization processes.

Chapter 1

Sexual objectification:

Manifestation and consequences

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1. Theoretical underpinnings: objectification theories

Kant (1996) proposed the first conception of objectification and suggested that it occurs whenever someone is treated as an object in order to achieve someone else's ends. From Kant's point of view, objectification involves people's reduction to the status of a mere instrument, leading to a decrement in the objectified individual's humanity. Kant (1996) particularly investigated sexuality outside monogamous marriages and considered that this form of sexuality implies a degradation in people's humanity. Hence, from Kant's perspective, both men and women could suffer from objectification, even if he recognized that women would be more frequently reduced to the status of mere instruments to be used by men.

Although they conceptualized objectification similarly to Kant's propositions, MacKinnon (1987, 1989) and Dworkin (1987) suggested that in the context of patriarchy, only women suffer from objectification by men. Here again, the authors suggested that when objectified, people's humanity is impaired as individuals are viewed as less than human and turned into things and commodities. Dworkin (1987) and MacKinnon (1987) both considered that women are seen as sex objects, reduced to body parts to be used by men. MacKinnon (1989) also proposed that objectification is unavoidable and that "all women live in sexual objectification the way fish live in water" (p.149).

From a philosophical perspective, Nussbaum (1995) advanced a much broader conception of objectification: that it occurs when someone is seen or treated as an object. She proposed that seven dimensions might be involved in objectification: instrumentality, denial of autonomy, inertness, fungibility, violability, ownership, and denial of subjectivity. The manifestations of these seven dimensions are developed below:

- Instrumentality occurs when the "objectifiers" treat someone as a tool to achieve their own goals;
- Denial of autonomy occurs when the "objectifiers" treat someone as lacking in autonomy and self-determination;
- Inertness occurs when the "objectifiers" treat someone as lacking in agency/activity;
- Fungibility occurs when the "objectifiers" treat someone as interchangeable with someone else;

Do you feel perceived as a full human being when you are treated as a body?

- Violability occurs when the “objectifiers” treat someone as lacking in boundary-integrity;
- Ownership occurs when the “objectifiers” treat someone as if she/he is owned by someone else, can be bought or sold, etc.;
- Denial of subjectivity occurs when the “objectifiers” deny someone else’s experiences and feelings.

Objectification thus appears when a human being is treated in one (or more) of these seven ways. According to Nussbaum (1995), however, one should take into account the context and complexities of human relationships in which objectification takes place. Hence, contrary to Kant’s, Dworkin’s, and MacKinnon’s perspectives, Nussbaum suggested that objectification might be harmless in specific contexts and under specific conditions. She even stated that in some cases objectification may be “either necessary or even wonderful features of sexual life” (Nussbaum, 1995, p.251). In particular, she indicated that objectification might be positive as long as the humanity of the objectified individual is properly acknowledged.

The notion of instrumentality appears to be the most commonly noted characteristic in these first conceptualizations of objectification. It applies to a vast variety of situations, from Kant’s view of sexuality outside marriage to slavery, Marx’s view of capitalism, and objectification in romantic relationships and sexual intercourse. In all cases, these first theories proposed that objectification occurs when someone is treated as an object to achieve people’s goals, needs, and desires. Although many of these theories allude to the importance attributed to (women’s) physical appearance, it is only more recently that the term sexual objectification has been commonly used to refer to this form of objectification. Through objectification theory, Fredrickson and Roberts (1997) proposed a new theoretical framework in which sexual objectification refers to a focus on women’s physical appearance and bodies, which are then considered as mere instruments to be used by others.

2. Objectification theory (Fredrickson & Roberts, 1997)

From Fredrickson and Roberts’ (1997) perspective, women are sexually objectified when they are seen and treated as bodies and particularly “as bodies that exist for the use and pleasure of others” (p.175). In light of MacKinnon’s (1989) view, the authors examined women’s experiences of sexual objectification through a sociocultural context, considering that Western cultures continuously sexually objectify female bodies. The authors asserted that women are constantly exposed to “the experience of being treated as a body (or collection of body parts) valued predominantly for its use to (or consumption by) others” (Fredrickson & Roberts, 1997, p.174). Based on this definition, the authors proposed that sexual objectification experiences occur through: 1) the visual media in which sexual objectification is displayed through interactions in interpersonal and social encounters; 2) the visual media in which sexually objectified female bodies are frequently depicted; and 3) interpersonal and social encounters.

Mainstream media thus constitute a first vector of sexual objectification, in which individuals are constantly exposed to either sexually objectified female bodies or social interactions in which women's physical appearance and (sexual) body parts are made salient (for a review, see Ward, 2016). For instance, through actors' dialogues, mainstream media emphasize women's physical appearance and bodies. Through media encounters, women are confronted with sexual objectification as outside observers: They are witnesses of other women's sexual objectification. In addition to sexual objectification through media encounters, women may be personally targeted by sexually objectifying experiences within interpersonal and social encounters. In this case, the focus on women's physical appearance may occur when women interact with another person (e.g., Swim, Hyers, Cohen, & Ferguson, 2001). Accordingly, women may either be witnesses of or targeted by sexual objectification. More specifically, women are targeted by sexual objectification when they personally receive sexually objectifying behaviors, such as gazing or appearance-related comments. They are considered witnesses of sexual objectification when they are exposed to (but not targeted by) such sexually objectifying behaviors (e.g., observing another woman receiving gazing or appearance-related comments) or portrayals (e.g., being exposed to sexually objectified women).

Fredrickson and Roberts (1997) proposed that the cultural milieu of sexual objectification leads women to perceive themselves and their physical appearance from an observer's perspective. More precisely, women apprehend their physical appearance and bodies through a third-person perspective rather than their own perspective and thus internalize sexual objectification (Fredrickson & Roberts, 1997; see also, Noll & Fredrickson, 1998). Objectification theory states that the internalization of sexual objectification then increases body shame, appearance anxiety, and safety anxiety and reduces the awareness of internal bodily states (e.g., stomach contractions, sexual arousal, etc.) and flow experiences. These intermediary psychological consequences, in turn, induce a variety of other negative consequences, such as eating disorders, negative affect (i.e., depression), sexual dysfunction, and a decrement in cognitive performance. The model proposed by objectification theory is displayed in Figure 1 and has received considerable empirical support (for reviews, see Moradi & Huang, 2008; Roberts, Calogero, & Gervais, 2018). Indeed, in the last two decades, many researchers have studied the incidence of sexually objectifying experiences for women, both as witness and target, as well as their consequences in light of Fredrickson and Roberts' (1997) theoretical propositions.

We will now consider empirical studies conducted in relation to sexual objectification. First, we will present the research that has examined the frequency and consequences of exposure to sexual objectification as a witness (i.e., through media encounters). In particular, these research findings give evidence for the theoretical assumptions of Fredrickson and Roberts (1997), according to which sexual objectification affects women's perceptions of their physical selves, sexual health, and mental health and cognitive performance. We will also mention research showing that exposure to sexual objectification affects perceivers' perceptions and cognitive processing of sexually objectified targets. Second, we will present the research investigating the frequency and

Do you feel perceived as a full human being when you are treated as a body?

consequences of sexual objectification when women are personally targeted by such behaviors. Although there are fewer studies of this type, research has shown that such behaviors impact women's perceptions of their physical selves, mental and sexual health and cognitive performance in a similar way to exposure to sexual objectification as a witness. Moreover, we will also mention research showing that sexual objectification experiences influence the involvement of women in interpersonal interactions when they are personally targeted by such experiences in a social context.

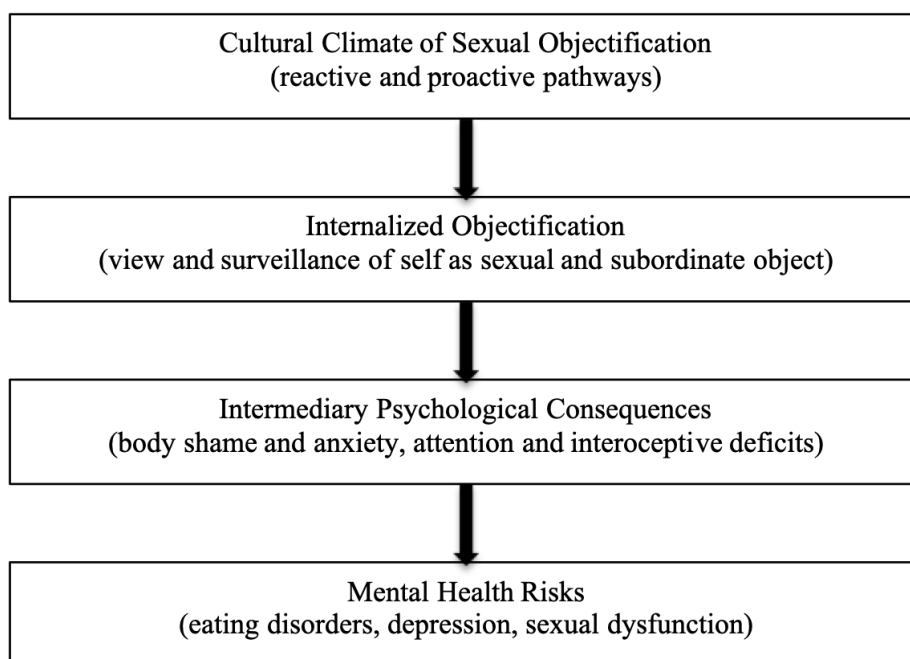


Figure 1. Objectification theory model (Fredrickson & Roberts, 1997), as proposed by Roberts et al. (2018).

3. Being the witness of sexual objectification

As explained above, the following sections present research findings about the frequency to which people are exposed to sexual objectification as witnesses. In such cases, people may be exposed to sexual objectification through sexually objectifying portrayals of individuals (i.e., wearing revealing clothes, posing in suggestive positions, etc.) or through fictitious social interactions in which someone focuses on someone else's physical attributes. As we will see later on, and consistent with the prevalence of this form of sexual objectification, many studies have investigated its consequences.

3.1 The frequency of sexual objectification in mainstream media

People are frequently exposed to sexually objectified female bodies through mainstream media. The exposure to sexualized bodies seems unavoidable, no matter what kind of media we are exposed to (i.e., television (TV), advertisements, magazines, music videos, video games, etc.).

On prime-time TV, female characters are more frequently portrayed in a sexualized way than men: 36.2% of women (vs. 8.4% of men) wear sexy clothes, and 34.6% of women (vs. 11% of men) are shown partly naked. Turning to differences across women's ages, 30.8% of adolescent girls (13–20 years) and 45.5% of young women (21–39 years) wear sexy clothes, and 26.9% of adolescent girls and 43.6% of young women show some nudity (Smith, Choueiti, Prescott, & Pieper, 2012). Similarly, women are more often depicted as thin and beautiful than men. Sexualization of women also occurs in music videos: Women are dressed in a provocative way and placed as “decorative objects” (e.g., dancing in the background), and the male gaze is frequently perpetrated against them (Aubrey & Frisby, 2011; Wallis, 2011). Sexual objectification does not only appear in the music videos made by male artists; indeed, 71.7% of female artists' music videos contain indicators of sexualization (Frisby & Aubrey, 2012).

The advertising world is no exception to this general rule, as TV commercials frequently depict women as sexual objects, either undressed, suggestively dressed, or in suggestive positions (Messineo, 2008). Through a content analysis, Stankiewicz and Rosselli (2008) found that across all magazine categories, 51.8% of print advertisements feature women as sex objects. However, the percentage varies according to target audience: in men's magazines 75.98% of ads depict women as sex objects, whereas this is the case for 55.71% of ads in women's magazines and 64.15% in adolescent girls' magazines (Stankiewicz & Rosselli, 2008). Finally, even if women are less frequently featured than men in video games, female characters are depicted in a sexually objectified way in gaming magazines (Dill & Thill, 2007; Miller & Summers, 2007) and in games themselves (Downs & Smith, 2010). For instance, an analysis of video game covers found that one in two female characters is depicted with very skinny legs and arms but is busty or super-busty (Burgess, Stermer, & Burgess, 2007). In addition to depicting sexually objectified portrayals of women, some video games include scenes of (sexual) violence and sexual exploitation perpetrated against women (Beck, Boys, Rose, & Beck, 2012; Dill, 2009).

3.2 Being the witness of sexual objectification: what are the consequences for women?

The effects of being exposed to sexual objectification have been frequently studied since objectification theory was proposed by Fredrickson and Roberts (1997) in order to test their theoretical model (see Figure 1). To date, the studies have mainly focused on the effect of repeated exposure to sexually objectified female bodies or sexual objectification in media and its consequences for women. Particularly, Fredrickson and Roberts' (1997)

assumptions suggest that being exposed to sexual objectification has negative effects on women's perceptions of their physical selves and their sexual and mental health, but also on their (cognitive) performance through the internalization of sexual objectification and other intermediary consequences.

3.2.1 What are the consequences for the way women perceive their physical selves?

Fredrickson and Roberts' (1997) main proposition is that repeated exposure to sexual objectification experiences leads girls and women to internalize an observer's perspective on their physical appearance. Consequently, women will "treat themselves as objects to be looked at and evaluated" (Fredrickson & Roberts, 1997, p.177). Since they proposed their theory, the term self-objectification was used to refer to situations in which people treat themselves as a sexual object and see their bodies as "objects of 'sights' to be appreciated by others" (Fredrickson & Roberts, 1997, p.180). The authors propose that this perspective on the self translates into an increase in appearance concerns and a constant body-monitoring. Hence, when women self-objectify, they will see their physical appearance from an observer's perspective, to the detriment of a first-person perspective. They will thus value their observable body attributes (e.g., weight, measurements, sex appeal, etc.) rather than their unobservable ones (e.g., health, strength, stamina, etc.) (Noll & Fredrickson, 1998). In other words, women will be preoccupied with their physical appearance, questioning how they look in the eyes of others rather than how they feel or what they are capable of. Broadly speaking, this means that people with high self-objectification allocate more importance to looking good than being healthy.

Self-objectification has been considered as both a trait and a state. State self-objectification depends on situational factors and increases when people are confronted with sexually objectifying instances, whereas trait self-objectification refers to the degree to which women have internalized an appearance perspective on themselves. Hence, people with high trait self-objectification are more concerned with their physical appearance than people with low trait self-objectification while state self-objectification varies according to situations and experiences of sexual objectification. State self-objectification is frequently measured with the Twenty Statements Test (TST) (Kuhn & McPartland, 1954) in which people have to complete the sentence "I am ..." 20 times. Items completed by participants with references to their physical appearance (e.g., "I am thin", "I am fat") are indicators of self-objectification. However, trait self-objectification is usually measured with the Self-Objectification Questionnaire (SOQ) (Noll & Fredrickson, 1998), through which researchers calculate a score indicating the importance attributed to observable (e.g., physical attractiveness, sex appeal, measurements, etc.) and unobservable (e.g., muscular strength, physical coordination, stamina, etc.) physical characteristics. Trait self-objectification appears when women value their observable body attributes more than their unobservable ones.

Recently, Moradi (2010) proposed a more comprehensive approach to self-objectification and suggested that the process should encompass three components (see also, Karsay, Knoll, & Matthes, 2017). More precisely, self-objectification starts with the internalization of beauty ideals, which alludes to “the extent to which an individual considers the societal norms of size and appearance to be appropriate standards for his or her own size and appearance” (Vandenbosch & Eggermont, 2012, p.871). According to Moradi (2010), the internalization of cultural standards of beauty then predicts the extent to which different body attributes (e.g., body size) are important for being beautiful, which constitutes the most frequent definition of self-objectification in the literature. Self-objectification, in turn, induces body surveillance, which has already been defined as the behavioral manifestations of sexual objectification (Calogero, Tantleff-Dunn, & Thompson, 2011). Many studies have investigated the effect of media exposure on these three different components (i.e., internalization of body ideals, self-objectification, and body surveillance).

Media exposure has been shown to be an antecedent of both state and trait self-objectification, whatever kind of media women are exposed to. For instance, both TV program (e.g., Aubrey, 2007; Grabe & Hyde, 2009; Vandenbosch, Muise, Eggermont, & Impett, 2015) and magazine exposure (e.g., Aubrey, 2007; Aubrey, Henson, Hopper, and Smith, 2009; Harper & Tiggemann, 2008; Slater & Tiggemann, 2015) are positively associated with trait and state self-objectification. More recently, scholars have considered the appearance of and increased interest in social networking sites and investigated their effects on users. Such studies have shown that, among women, both Facebook (Meier & Gray, 2014; Vandenbosch & Eggermont, 2016; see also, Slater & Tiggemann, 2015) and Instagram (Feltman & Szymanski, 2017) use are positively associated with trait self-objectification through the internalization of beauty ideals. In other word, Facebook and Instagram use increases the internalization of cultural standards of beauty, which in turn leads women to assign more value to their observable body attributes. Many other studies have highlighted the mediating role of internalization of beauty ideals in the relationships between media exposure and self-objectification (e.g., Morry & Staska, 2001; Vandenbosch & Eggermont, 2012; see also, Dakanalis et al., 2014; Erchull, Liss, Lichiello, 2013). For instance, Morry and Staska (2001) showed that exposure to beauty magazines increased the internalization of beauty ideals, which in turn increased trait self-objectification.

Although the findings described above are correlational, a large number of experimental studies has confirmed that exposure to sexually objectifying media contents increases (state) self-objectification (e.g., Aubrey & Gerding, 2014; Aubrey, Henson, Hopper, & Smith, 2009; Choma, Foster, & Radford, 2007; Fox, Ralston, Cooper, & Jones, 2014; Harper & Tiggemann, 2008). For instance, Aubrey et al. (2009) showed that the (state) self-objectification of female participants exposed to full-body images of women increased more than that of female participants who were exposed to images of body parts only. Similarly, Harper and Tiggemann (2008) showed that women exposed to magazine advertisements showing a thin woman reported higher levels of (state) self-objectification than women exposed to control advertisements. Even exposure to media literacy on body

image has been found to increase (state) self-objectification (Choma et al., 2007). More precisely, when women were exposed to a critique video on body size and obsession with the thin ideal, they reported higher levels of (state) self-objectification than participants exposed to the control video. Hence, even criticism of the media and their portrayals of unrealistic and unhealthy images of women fail to reduce the negative effects of sexually objectified portrayals of women on the appearance concerns of other women (Choma et al., 2007).

Turning to the effects of sexualization in video games, Fox et al. (2014) found that women exposed to a sexually objectified avatar reported greater (state) self-objectification than women exposed to a non-sexualized avatar (see also, Fox, Bailenson, & Tricase, 2013). In a meta-analysis, Karsay et al., (2017) confirmed the positive effect of sexualizing media on women's self-objectification, showing that sexualization in video games and online media has a stronger effect than sexualization in TV on women's self-objectification.

Although the impact of media exposure on body surveillance has been slightly less investigated, it has been documented in many studies. For instance, exposure to sexually objectifying TV programs and magazines (Aubrey, 2007; see also, Slater & Tiggemann, 2015) as well as music TV (Grabe & Hyde, 2009) increases body surveillance. Research findings have also shown that social networking sites increase self-surveillance via (trait) self-objectification (Slater & Tiggemann, 2015). Moreover, some studies have shown that the internalization of beauty ideals mediates the relationship between the exposure to social networking sites and body surveillance (Feltman & Szymanski, 2017; Vandenbosch & Eggermont, 2016).

Exposure to mainstream media also undermines women's satisfaction with their physical appearance (i.e., increased body dissatisfaction). To date, this relationship has mostly been explained by the fact that the media convey thin ideal representations of women (for meta-analytic reviews, see Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Holmstrom, 2004). Consequently, women's body dissatisfaction frequently relates to their body size, and many women wish to be thinner. For instance, Monteath and McCabe (1997) showed that up to 94% of a college student sample would like to be smaller than their perceived actual body size. Moreover, some research has shown that exposure to sexually objectifying media also causes body dissatisfaction among women. Magazine advertisements (Halliwell, Malson, & Tischner, 2011; Krawczyk & Thompson, 2015; Mulgrew & Hennes, 2015), TV advertisements (Strahan et al., 2008), and music videos (Bell, Lawton, & Dittmar, 2007; Mischner, van Schie, Wigboldus, van Baaren, & Engels, 2013), in particular, have been shown to increase body dissatisfaction among samples of women confronted with sexually objectified portrayals of women. For instance, Krawczyk and Thompson (2015) showed that college participants exposed to advertisements that sexually objectified women reported higher levels of body dissatisfaction than participants exposed to control advertisements. In the same way, sexualized music videos also undermine adolescent girls' satisfaction with their physical appearance. In particular,

adolescent girls who watched sexualized music videos reported a greater increase in body dissatisfaction from pre- to post-exposure than those who were exposed to non-sexualized content (Bell et al., 2007).

Other research findings have given support for the theoretical assumptions of objectification theory (Fredrickson & Roberts, 1997) by showing that self-objectification appears to be a mediator in the relationship between media exposure and body image concerns (Aubrey, 2007; Fredrickson et al., 1998; Grabe & Hyde, 2009; for a review, see Grabe, Ward, & Hyde, 2008). In particular, research has shown that an increase in self-objectification triggers body dissatisfaction. To induce (state) self-objectification, researchers have frequently used the swimsuit-sweater paradigm, in which participants are asked to try on swimsuits (vs. sweaters) in front of a full-length mirror. The swimsuit condition (as compared to the sweater condition) increases participants' focus on their physical appearance and thus leads to higher levels of (state) self-objectification (e.g., Hebl et al., 2004; Quinn, Kallen, & Cathey, 2006). Using this type of experimental induction of self-objectification, Fredrickson et al. (1998) and Hebl et al. (2004) showed that the increase in (state) self-objectification led to body dissatisfaction. In other words, participants who had to try on swimsuits in front of a full-length mirror reported higher levels of body dissatisfaction than women who had to try on sweaters. The negative consequences of induced (state) self-objectification seem to appear among diverse ethnic samples, such as African American, Hispanic, Asian American, and Caucasian women (Hebl et al., 2004).

3.2.2 What are the consequences for women's sexual health?

There is considerable empirical support for the impact of sexual media content on the sexual socialization of people, influencing their attitude, knowledge, and behaviors towards sexuality (for reviews, see Kim & Ward, 2012; Ward, 2002). In particular, exposure to women depicted as sex objects seems to impact women's sexual functioning. According to Fredrickson and Roberts (1997), exposure to sexual content will increase one's perceptions of oneself as a sexual object, which, in turn, will decrease healthy sexual functioning. Various empirical studies have tested such propositions, exploring the effect of sexual content on diverse outcomes related to sexual health, such as sexual self-esteem (e.g., Aubrey, 2007), sexual agency (e.g., Tolman, Kim, Schooler, & Sorsoli, 2007), and sexual experience (e.g., Aubrey, 2007; Vandenbosch & Eggermont, 2016).

For instance, the heterosexual script frequently displayed on TV has been shown to impact sexual agency. Broadly defined, the heterosexual script represents what it is important to do during sexual encounters, what is judged appropriate in sexuality, and what counts as sexual intercourse as functions of gender. Tolman et al. (2007) showed that exposure to such sexual content decreased women's sexual agency (i.e., perceptions of having control and power during physical intimacy). Moreover, Aubrey (2007) found that exposure to sexually objectifying magazine and TV content did not impact sexual self-esteem (e.g., "I am a good sexual partner") but increased body image self-consciousness during physical intimacy (e.g., "The worst part of having sex is being nude in front of

another person”). However, this link was partially mediated by the behavioral manifestation of self-objectification (i.e., body surveillance; Aubrey, 2007). In the same vein, Vandebosch and Eggermont (2016) conducted an impressive longitudinal study and found that exposure to sexualizing magazine content at time T1 increased the internalization of beauty/appearance ideals, self-objectification, and body surveillance at time T2. Lastly, their results showed that body surveillance was positively associated with the initiation of French kissing (measured at time T3) whereas self-objectification was positively related to the initiation of sexual intercourse (measured at time T3).

Other research has focused on other consequences of sexually objectifying culture, such as women’s mental health risk and cognitive performance. Insofar as objectification theory suggests that the effect of sexual objectification on mental health occurs through both self-objectification and intermediary psychological consequences (i.e., body shame, physical anxiety and attention, and interceptive deficits), such studies did not directly test the effect of sexually objectifying contents on such outcomes. Rather, they investigated their relationships with self-objectification and the intermediary psychological consequences. However, given the large number of works showing that sexually objectifying media content increases self-objectification and intermediary psychological consequences, it seems likely that sexually objectifying content indirectly shapes women’s mental health and cognitive performance. We therefore decided to mention the findings of research that investigated the effects of self-objectification on women’s mental health and cognitive performance in the two following sections.

3.2.3 What consequences for women’s mental health?

As displayed in Figure 1, objectification theory postulates that repeated exposure to sexual objectification has negative consequences for women’s mental health through the internalization of sexual objectification in women’s self-concept (i.e., self-objectification) and intermediary psychological consequences (i.e., body shame, appearance anxiety, and attention and introspective deficits). The occurrence of such emotional and experiential consequences can lead to a higher tendency toward eating disorders and depression.

In the first instance, scholars placed a particular emphasis on the effect of self-objectification on eating disorders and gave evidence for a direct relationship between the two (e.g., Muehlenkamp & Saris-Baglama, 2002; Noll & Fredrickson, 1998). However, the mediating effects of body shame and/or appearance anxiety in the relationship between self-objectification and disordered eating have also frequently been investigated in past studies (e.g., Noll & Fredrickson, 1998; Tiggemann & Lynch, 2001; Tiggemann & Slater, 2001). In particular, studies have frequently supported the mediating role of body shame in the relationship between self-objectification and disordered eating, whereas the mediating role of appearance anxiety has not systematically emerged. Noll and Fredrickson (1998) showed that body shame mediated the effect of self-objectification on eating disorders (see also, Tiggemann & Slater, 2001). In the same vein, Tiggemann and Kuring (2004) showed that eating disorders positively correlated with self-objectification, body surveillance, body

shame, and appearance anxiety. In particular, path analysis shows a high degree of fit with the model of objectification theory: Self-objectification is positively associated with self-surveillance, which in turn increases body shame and appearance anxiety, which increase eating disorders. Nevertheless, as stated before, the role of appearance anxiety does not systematically emerge in studies. For instance, Tiggemann and Slater's (2001) results showed that body shame, but not appearance anxiety, mediated the relationship between self-objectification and eating disorders. Importantly, a study conducted by Liss, Erchull, and Ramsey (2011) showed that the more women enjoyed experiences of sexualization (e.g., "It is important to me that men are attracted to me"), the more they reported negative eating attitudes. The authors suggested that their results might be explained by the fact that women who appreciate men's approval of their physical appearance particularly wish to meet beauty and thin ideals.

Less work has been conducted on the effect of self-objectification on depression, and research remains correlational. Nevertheless, studies have highlighted diverse mediation effects. Muehlenkamp and Saris-Baglama (2002) highlighted a direct relationship between self-objectification and depressive symptoms. However, the authors showed that internal awareness (i.e., interoceptive deficits, "I am often confused about what emotion I am feeling") mediated the relationship between self-objectification and depressive symptoms. Tiggemann and Kuring (2004) showed that depressed mood was positively correlated with self-objectification, self-surveillance, body shame, and appearance anxiety as well as flow experiences. More recently, Szymanski and Henning (2006) confirmed such results through path analysis, showing that self-objectification was associated with higher levels of body monitoring, which led to greater body shame and physical anxiety and less flow. All the three latter variables then positively correlated with depression. Taken together, these results support Fredrickson and Roberts' (1997) assertions regarding the occurrence of depressive symptoms in response to self-objectification and intermediary psychological consequences (i.e., body shame, physical anxiety, and attention and interoceptive deficits).

Although all these research findings highlighted the effect of self-objectification on both eating disorders and depression, one should reiterate that many studies have already demonstrated the occurrence of self-objectification following exposure to sexual objectification (e.g., Aubrey et al., 2009; Fox et al., 2014; Harper & Tiggemann, 2008). Hence, taken together, these results support the assumptions of objectification theory (see Figure 1), according to which sexual objectification may increase women's mental health risks. Following the same idea, the next section addresses the effect of self-objectification on women's cognitive performance.

3.2.4 What are the consequences for women's cognitive performance?

Objectification theory (Fredrickson & Roberts, 1997) posits that the constant body monitoring usually associated with self-objectification leads to attention deficit and, in turn, decreases women's (cognitive) performance. Hence, when women have to perform a demanding concurrent task, their attentional resources must be split between the task and

appearance monitoring, leaving fewer attentional resources to perform the demanding concurrent task properly. The negative consequences of self-objectification for performance thus apply to both cognitive and physical tasks. Some research has found that trait self-objectification is negatively associated with intrinsic motivation (e.g., “The more difficult the problem, the more I enjoy trying to solve it”) and self-efficacy (e.g., “When I make plans, I am certain I can make them work”) (Gapinski, Brownell, & LaFrance, 2003). Moreover, it seems that self-objectification also has deleterious effects on cognitive performance.

Fredrickson et al. (1998) examined the effect of state self-objectification on women’s cognitive performance. The authors used the swimsuit-sweater paradigm to manipulate state self-objectification and found that women (but not men) in the swimsuit condition performed less well in a math test than women in the sweater condition (Fredrickson et al., 1998; see also Hebl et al., 2004). More recently, Quinn, Kallen, Twenge, and Fredrickson (2006) found that the effect could not be explained by the nature of the task. Indeed, due to the use of a math test to assess cognitive performance, an alternative explanation would be that wearing a swimsuit increases the salience of gender stereotypes, according to which women perform badly in math tests. This would, in turn, lead to a decrement in women’s performance due to the classical stereotype threat effect. In order to counter this alternative hypothesis, the authors used a modified Stroop task and showed that, here again, women’s performance was affected when trying on a swimsuit (vs. sweater) (Quinn, Kallen, Twenge, et al., 2006; see also, Gapinski et al., 2003).

Some studies have also investigated the consequences of self-objectification on physical tasks. More precisely, Fredrickson and Harrison (2005) examined the link between self-objectification and throwing performance. Previous evidence had already shown that boys perform better than girls in throwing tasks (for a meta-analysis, see Thomas & French, 1985). Young (1990) suggested that such gender differences are due to the fact that a woman experiences “her body as a thing at the same time that she experiences it as a capacity” (p.174), leaving fewer capacities to perform physical tasks. In other words, as stated by Fredrickson and Roberts (1997), the constant body monitoring associated with self-objectification increases attention and interoceptive deficits, which in turn decrease women’s physical performance. Fredrickson and Harrison’s (2005) study confirmed the theoretical propositions of scholars that girls with high levels of trait and state self-objectification also exhibit poorer throwing performance.

3.3 Being the witness of sexual objectification: what are the consequences for perceivers’ perceptions?

3.3.1 *The attribution of human traits to sexually objectified women*

Various studies have shown that sexual objectification decreases the attribution of human characteristics to sexually objectified women. In particular, sexually objectified women are perceived as having fewer human characteristics than non-objectified ones.

First, in multiple studies, sexually dressed women were given lower ratings of competence (Glick, Larsen, Johnson, & Branstiter, 2005; Graff, Murnen, & Smolak, 2012; Wookey, Graves, Butler, 2009). Similarly, Loughnan et al. (2010) measured the perceived intelligence of sexualized and non-sexualized targets and found that sexualized targets were attributed lower IQ levels. In another study using a new manipulation of sexual objectification, Heflick and colleagues (2009; 2011) found that participants who were asked to write their thoughts and feelings about a woman's appearance attributed lower levels of competence than participants who wrote about the person as a whole (Heflick & Goldenberg, 2009; Heflick et al., 2011). This focus on women's physical appearance also diminishes the perceptions of warmth and morality attributed to women (Heflick et al., 2011). These results corroborate Loughnan et al.'s (2010) findings showing that participants exposed to photographs which pictured only a woman's body attributed lower levels of mind and moral status than participants who were exposed to full-body and head-only images of a woman (see also, Graff et al., 2012). Cikara, Eberhardt, and Fiske (2011) also found that the decrease in attribution of mind also appeared in neuroimaging studies for male participants with high levels of benevolent sexism, who perceived women as subordinate people to protect and cherish (Glick & Fiske, 1996). In particular, the authors found that exposure to sexually objectified women decreased the activation of brain areas involved in mental state attribution among men with high levels of benevolent sexism. Moreover, sexual objectification seems to decrease attribution of competence and agency in both Western and Eastern cultures (Wollast, Puvia, Bernard, Tevichapong, & Klein, 2018). However, a study conducted by Holland and Haslam (2013) indicated that body and clothing types may have an effect on such results. In particular, thin women dressed in lingerie were attributed less agency (i.e., reasoning, imagining, choosing) and less moral agency than overweight and plainly-dressed women. Such findings suggest that certain variables play a role in the attribution of human traits to sexualized targets.

In a recent study, Moya-Garófano, Moya, Megías, and Rodríguez-Bailón (2019) found that the way women react to sexual objectification experiences also influenced people's perception of women. More precisely, when women reacted positively to appearance-related comments they received from male strangers, they were viewed as less competent and more superficial, which, in turn, decreased male and female participants' motivation to interact with them. In addition to a decrease in the attribution of human characteristics to sexually objectified women, research has shown that sexual objectification impacts the cognitive processes involved in the perception of sexually objectified women.

3.3.2 The cognitive processing of sexually objectified women

Some studies have also investigated the way sexually objectified women are cognitively processed (e.g., Bernard, Gervais, Allen, Campomizzi, & Klein, 2012; Gervais, Vescio, & Allen, 2012; Gervais, Vescio, Förster, Maass, & Suitner, 2012). Scholars have examined

the possibility that being perceived through their physical appearance and treated as sexual objects also infuses the cognitive processes involved in the recognition of others, leading to cognitive objectification (for a review, see Bernard, Cogoni, & Carnaghi, 2020). In other words, researchers have investigated whether sexual objectification induces a set of cognitive processes through which “a human being is no longer appraised as a global physical entity and is instead reduced to its constituent parts” (Bernard, Gervais, & Klein, 2018, p.84). Broadly speaking, the authors hypothesized that, at a basic cognitive level, sexually objectified female targets are treated as objects rather than as human beings. Hence, researchers have investigated the cognitive processes involved in the recognition of sexually objectified targets as compared to real objects. Research from cognitive psychology suggests that there are two main processes involved in the recognition of objects and humans: analytic and configural (Maurer, Le Grand, & Mondloch, 2002). The recognition of objects involves *analytic processing* and occurs independently of spatial relations of the stimulus parts, whereas the *configural processing* involved in person recognition depends on the relations and configurations between the different parts of a stimulus. Such findings open up new perspectives for the investigation of how sexually objectified targets are cognitively processed.

First, research has highlighted an inversion effect in human-recognition tasks: People need more time to recognize human bodies and faces when they are presented upside down rather than upright (e.g., Yin, 1969). The presence of an inversion effect has shown that person-recognition is based on a configural processing. Based on this evidence from cognitive psychology, Bernard et al. (2012) proposed that if sexually objectified women are cognitively processed as objects, then one should not notice an inversion effect for sexually objectified female targets. The authors exposed their participants to pictures of sexualized male and female bodies (i.e., wearing swimsuits or underwear) and asked them to take part in a recognition task. In this task, participants were shown two pictures (i.e., a distractor and the previously shown picture) and had to identify which they had viewed in the first part. The dependent variable measured the percentage of correct identifications for both upright and inverted female and male bodies. The authors hypothesized and found an inversion effect only for male bodies, showing that female targets, like objects, are as easily recognized when presented upside down as when presented upright (Bernard et al., 2012; Bernard, Gervais, Allen, Delmée, & Klein, 2015). More recently, Bernard et al. (2015) showed that factors such as reducing the salience of sexual body parts (i.e., through masking or pixelization) or humanization of the targets helped to prevent analytic processing of sexually objectified female targets. Hence, women were less cognitively objectified when their sexual body parts were masked/pixelated or when information on their internal humanness was provided. Lately, Bernard et al. (2019) investigated why women’s sexualization involves analytic processing. Among two dimensions of sexualization (i.e., skin-to-clothing ratio and posture suggestiveness), the authors found that women’s bodies presented in a suggestive way involved analytic processing compared to women’s bodies presented in a nonsuggestive way, this effect occurred regardless of body asymmetry. However, the skin-to-clothing ratio was not associated with analytic

processing. To put it simply, posture suggestiveness (but not revealing clothing) triggered cognitive objectification (Bernard et al., 2019; see also, Bernard & Wollast, 2019).

The second paradigm in favor of analytic processing of sexually objectified female targets relates to the sexual body parts recognition bias. Because object recognition relies on analytic processes, research has found that objects are recognized as quickly when they are presented whole as when presented in parts. Hence, if the recognition of female sexualized bodies relies on analytic rather than configural processes, then the recognition of women's sexual body parts would be similar when presented in the context of the entire body or in isolation. Gervais, Vescio, Förster et al. (2012) corroborated such expectations, showing that participants recognized women's sexual body parts at similar rates when presented in isolation or in an entire-body context. Recently, Bernard, Geelhand, and Servais (2019) applied this paradigm to the recognition of women's faces and found that cognitive objectification can appear even when participants are confronted with faces wearing makeup. In particular, the authors found that for women's faces wearing eye makeup, face parts were recognized equally when presented in isolation or in the context of the whole women's face, suggesting analytic processing of faces with eye makeup.

Finally, the last paradigm relates to the fact that objects are perceived to be fungible or interchangeable with similar others. Gervais, Vescio, and Allen (2012) hypothesized that if women were cognitively perceived in an objectified way, people would make more mistakes in a matching task (i.e., placing the right woman's face on a given body). Consistent with their hypotheses, the authors showed that women, independently of body type (i.e., ideal vs. average), are more fungible: Participants made more mistakes in matching women's heads and bodies (and ideal men's heads and bodies) than they did non-ideal men's heads and bodies.

Recently, Vaes, Cristoforetti, Ruzzante, Cogoni, and Mazza (2019) conducted studies going beyond those showing that the recognition of female bodies implies a similar processing style as objects. Specifically, the authors used the oddball paradigm, through which they exposed participants to a sequence of sexually objectified (Studies 1 and 3) and non-objectified women (Study 2), interrupted by a deviant stimulus (i.e., a doll-like avatar created through a morph between the picture of the original objectified and non-objectified women and a doll's face). Participants had to indicate as quickly as possible whether the target was a human or an object-like avatar. During this task, Vaes et al. (2019) recorded Event-Related Potentials (ERP) and directed their interest to ERP P300. ERP P300 is triggered by the infrequent stimulus. In the context of the oddball paradigm, the more participants perceived the oddball (i.e., the doll's face in these studies) as different from the repeated stimuli (i.e., the (non)-objectified targets), the more the amplitude of P300 should increase. In their first experiment, Vaes et al. (2019) showed that the presentation of a female doll-like avatar among sexually objectified depictions of female targets led to a positive deflection of the P300. This positive deflection was significantly smaller than when a male doll-like avatar was presented among sexually objectified depictions of male targets. This means that participants perceived more differences between the male doll-like avatar and a sexually objectified male than they did between a female doll-like avatar and

sexually objectified female. In the second experiment, the authors showed that the effect observed in Study 1 was independent of the targets' gender. In particular, the effect of the oddball on P300 did not differ when the female doll-like avatar was presented among a series of non-objectified female targets compared to when the male doll-like avatar was presented among a series of non-objectified male targets. Importantly, the authors showed that their effects were observed even when no references to the objects or human dimensions were provided (Study 3).

Taken together, these research findings suggest that sexually objectified female targets are perceived to be more similar to objects than non-objectified female targets. Indeed, studies have given evidence for perceptual similarities between the recognition of objects and that of sexually objectified female targets.

These research findings are interesting and useful for understanding the consequences of sexual objectification experiences. However, these studies investigated the consequences of being an observer of other women's sexual objectification, particularly through media encounters (Gervais et al., 2020). Nevertheless, objectification theory (Fredrickson & Roberts, 1997) suggests that women experience sexual objectification in interpersonal and social interactions through a focus on physical appearance such as gazing, appearance-related comments, and catcalls, or even sexual harassment and unwanted touching. The following section thus presents research that has investigated the frequency and consequences of sexual objectification when it occurs through interpersonal encounters. Research on the consequences of this form of sexual objectification is not as well developed as research on the consequences of exposure to sexual objectification through media encounters. Scholars who have studied such consequences were interested in both variables that have already been investigated following exposure to sexual objectification as a witness (i.e., women's perceptions of their physical selves, mental and sexual health and cognitive performance) and other outcomes, such as its effects on ensuing interactions.

4. Being personally targeted by sexual objectification

4.1 The frequency of sexual objectification in social interactions

Research findings have shown that interpersonal sexual objectification appears to be (one of) the most frequent forms of gender discrimination for women (e.g., Fairchild & Rudman, 2008; MacMillan, Nierobisz, & Welsh, 2000; Swim et al., 2001). This form of objectification can have different manifestations (Kozee, Tylka, Augustus-Horvath, & Denchik, 2007) and may come from many sources, such as friends, family, partners, and even strangers (Fredrickson & Roberts, 1997).

In 2007, Kozee and colleagues proposed that sexual objectification in interpersonal encounters may occur through two main types of behaviors: body evaluation behaviors and unwanted sexual advances. The authors developed the Interpersonal Sexual Objectification Scale (ISOS) (Kozee et al., 2007) in order to assess the frequency with which women are

exposed to sexually objectifying behaviors as a target, for instance by receiving comments on their physical appearance. Hence, the scale was composed of two subscales: one related to body evaluation behaviors and the other to unwanted sexual advances. The body evaluation subscale measures the subtler forms of sexual objectifying experiences, such as male gaze, catcalls, and appearance-related comments women receive from perpetrators (e.g., “How often have you noticed someone leering at your body?”). The unwanted sexual advances subscale assesses sexual harassment and unwanted touching or pinching behaviors (e.g., “How often has someone grabbed or pinched one of your private body areas against your will?”). Much empirical evidence has shown that women are frequently exposed to both forms of interpersonal sexual objectification experience.

Based on the distinction proposed by Kozee et al. (2007), various research findings have demonstrated that women frequently experience behaviors related to body evaluation and unwanted sexual advances. Body evaluation behaviors are a daily experience for women (Fairchild & Rudman, 2008; Holland, Koval, Stratemeyer, Thomson, & Haslam, 2017; Swim et al., 2001; Swim, Cohen, & Hyers, 1998). This first type of interpersonal objectification refers to appearance comments and remarks, catcalls, whistles, or gazing. For instance, Swim et al. (2001) used a daily diary approach in which women had to indicate at the end of each day if they had been exposed to sexist incidents over a two-week period. The authors found that women reported being confronted with interpersonal objectification (i.e., sexual objectifying comments in this study) once or twice per week. In order to avoid long-term recall and the associated memory bias, Holland et al. (2017) used an Ecological Momentary Assessment (EMA) in which women were asked to report several times a day if they had been confronted with interpersonal sexual objectification experiences in the last one or two hours. Various forms of interpersonal objectification behavior related to body evaluation have been investigated (e.g., objectifying gaze, sexual remarks, catcalls and wolf whistles, etc.). Holland et al. (2017) found that among their sample of young Australian women, on average women were confronted with objectification 3.69 times per week, and 75% of participants were the targets of objectifying behaviors at least once a week. When looking at the different forms of objectification experience with which women are confronted, the authors found that 55% of the reported experiences concerned objectifying gaze and 11% concerned catcalls and wolf whistles. The frequency of exposure to catcalls, whistles, or stares was also highlighted in Fairchild and Rudman’s (2008) research, which showed that among a sample of young adult college women, 32% reported experiencing catcalls, whistles, or stares once a month, and 33% indicated they were exposed to such behaviors twice a month.

Unwanted sexual advances experiences range from being touched and sexually harassed to sexual assault. These experiences are also commonplace for women. For instance, among a sample of young adult college women, 26.3% reported being fondled or grabbed by a stranger against their will once a month (Fairchild & Rudman, 2008). Fairchild (2010) found a lower percentage, namely that 21.3% of the sample reported experiences of unwanted touching or stroking at least once a month. More recently, Hayden, Graham, and Lamaro (2016) found that among 465 female participants, 67% ($n = 312$) reported

experiences of unwanted sexual attention during their lifetime. The most frequent form of unwanted sexual attention received by women in that sample was unwanted kissing or touching over clothes (98%, $n = 306$) while 37% ($n = 115$) had been touched under their clothes against their will. Forty-three percent ($n = 124$) of the reported experiences occurred in spite of women's protests. The most extreme form of objectifying sexual violence was also investigated in this study: The authors found that 22% ($n = 69$) of their sample reported unwanted penetration.

Both body evaluation behaviors and unwanted sexual advances have mainly been investigated as experiences committed by strangers. Even if such situations seem to be the most frequent kind of sexually objectifying behaviors (e.g., Brinkman & Rickard, 2009; MacMillan et al., 2000), women are also sexually objectified by perpetrators known to them. For instance, women experience sexual objectification from peers (Petersen & Hyde, 2013), acquaintances, friends, or even romantic partners (Brinkman & Rickard, 2009; Strelan & Pagoudis, 2017). Brinkman and Rickard (2009) investigated the experiences of men and women of gender prejudice (i.e., gender role stereotype, sexual objectification, demeaning/derogatory comments or behaviors) by asking them to keep an online diary. The authors found that even though women more frequently experienced gender prejudice from strangers, friends committed 9% of the reported events. Strelan and Pagoudis (2017) investigated sexual objectification in romantic relationships and showed that the more partners self-objectify, the more they will sexually objectify their partners.

Considering the frequency of women's exposure to sexually objectifying behaviors in interpersonal and social contexts, investigation has begun of the consequences of such behaviors from the women's point of view. However, as noted by Gervais and collaborators (2020), this remains the focus of a minority of studies and is underdeveloped. Specifically, in 2020, Gervais and colleagues stated that 13 studies have examined sexual objectification experiences through an interactive perspective, whereas hundreds have examined the consequences of sexual objectification when women are witnesses of it. In order to investigate the consequences of interpersonal objectification behaviors from the women's perspective, researchers have measured the frequency of or manipulated sexual objectification in interpersonal contexts. The designs employed by researchers are presented in the following section, after which the consequences from the women's perspective are detailed.

4.2 Being personally targeted by sexual objectification: what are the consequences for women?

4.2.1 *What are the consequences for the way women perceive their physical selves?*

Based on the theoretical assumptions of objectification theory (Fredrickson & Roberts, 1997), researchers who have studied the consequences of being the target of sexually objectifying behaviors have examined the same outcomes as those who investigated the

consequences of being exposed to sexual objectification as a witness. Particularly, body-related outcomes such as self-objectification, body shame, and appearance and safety anxiety have been studied following sexually objectifying experiences in interpersonal contexts. In order to examine the consequences of sexual objectification when women are the targets of sexually objectifying behaviors, researchers have used manipulations in which their (female) participants received sexually objectifying treatments through which their physical appearance and bodies were highlighted. In correlational studies, authors have measured the frequency of exposure to sexually objectifying treatments such as appearance-related comments and their consequences on self-objectification and body image disturbances (e.g., Fairchild & Rudman, 2008; Herbozo & Thompson, 2006). A study conducted by Fairchild and Rudman (2008) investigated the consequences of verbal sexual objectification when it occurred through an interaction with strangers. The authors assessed the frequency of exposure to body evaluation (e.g., catcalls, crude and offensive sexual remarks, seductive behaviors, etc.) and unwanted sexual attention (e.g., pressure and coercion to cooperate sexually, unwanted touching, etc.) from strangers. Fairchild and Rudman (2008) collapsed the items into an index of stranger harassment, preventing us from reporting the specific effects of each of the sub-dimensions of interpersonal sexual objectification. However, it is interesting to note that stranger harassment positively relates to perceived risk of rape, self-objectification (assessed through body surveillance), and body shame scales. Nevertheless, Fairchild and Rudman's (2008) results emphasize a moderator, showing that the positive correlation between stranger harassment and self-objectification (assessed through body surveillance and body shame scales) appears only among women who react with passive coping strategies (i.e., ignoring or denying the harassment) or self-blame.

The occurrence of self-objectification following sexual objectification in interpersonal encounters was also found in a study conducted by Garcia, Earnshaw, and Quinn (2016). The authors used a mixed-gender interpersonal interaction in which they invited two participants (a man and a woman) to evaluate whether they would date their interaction partner. Each participant received the following instructions: "During the interaction, please think about whether you would date your interaction partner. After the interaction, you will be asked to evaluate your partner as if they were a potential dating partner. In other words, we would like to know if you would date your interaction partner and why". After the interaction phase, the participants had to indicate the frequency with which they think about internal (e.g., friends, personality, academics, etc.) and external (e.g., appearance, body, clothing, etc.) characteristics of their interaction partner during the interaction. The women (but not the men) reported higher levels of (state) self-objectification following the interaction between the partners (Garcia et al., 2016).

Other studies have looked at the effect of negative comments (such as those labeled "teasing") and found that such comments increase body image disturbances (e.g., Cash, 1995; Thompson, Herbozo, Himes, & Yamamiya, 2005). For instance, Thompson and Psaltis (1988) found that teasing was positively associated with body dissatisfaction and eating disturbances among female college students. More recently, and in order to extend

these research findings, scholars have investigated the consequences of both positive and negative appearance-related comments. Herbozo and Thompson (2006) found that appearance-based compliments tend to improve body satisfaction and self-esteem and to decrease eating disorders more than negative appearance-related comments, which have the opposite effects on these variables. However, extending previous research, some studies have found that the effects of positive comments are not as simple as this. For instance, Calogero, Herbozo, and Thompson (2009) found that trait self-objectification moderates the effect of appearance-related comments independently of women's feelings (i.e., positive or negative) about appearance comments. More precisely, in their study, women with high trait self-objectification levels reported higher levels of body surveillance and body dissatisfaction following appearance-related comments. Moya-Garófano, Rodríguez-Bailón, Moya, and Megías (2018) observed another interesting moderation effect. The effect of appearance-related comments on body-related variables (i.e., body surveillance and body shame) depends on women's emotional reaction. In particular, in their study, exposure to verbal comments increased body shame through body surveillance, but only among women who reacted with happiness, empowerment, and low levels of anger to such comments (Moya-Garófano et al., 2018).

In a more general way, individual characteristics (i.e., trait self-objectification, feelings of power) and emotional reactions (i.e., anger, happiness) have an important role in the consequences of appearance-based comments and body-related variables. Using another way to manipulate sexual objectification in interpersonal contexts, Calogero (2004) also pointed out the deleterious effect of interpersonal experiences of sexual objectification. Indeed, as with body-related comments, the mere anticipation of male gaze leads to body-related disturbances, increasing body shame and physical appearance anxiety among women (Calogero, 2004).

All in all, these research findings suggest that whether women are the witness or target of sexual objectification, there are similar consequences for body-related variables, increasing self-objectification (e.g., Garcia et al., 2016; Fairchild & Rudman, 2008), body dissatisfaction (e.g., Calogero et al., 2009), safety anxiety (e.g., Fairchild & Rudman, 2008), body shame, and appearance anxiety (Calogero, 2004).

4.2.2 What are the consequences for women's mental and sexual health?

To the best of our knowledge, very few studies have investigated the effects of interpersonal sexual objectification experiences on women's mental and sexual health outcomes. To date, research has mainly investigated the effect of interpersonal sexual objectification experiences on emotional states and psychological wellbeing. In particular, some studies suggest that interpersonal sexual objectification may have positive effect on women's emotional states. Kahalon, Shnabel, and Becker (2018, Study 2) found that receiving an appearance compliment on their physical appearance from a man boosted their female participants' mood, but only for women with high trait self-objectification (for

similar results, see Fea & Brannon, 2006). However, in their study, Tiggemann and Boundy (2008) found that women who received an appearance compliment reported a less negative mood, independently of their levels of trait self-objectification, than participants who received no comment. Furthermore, positive comments emanating from romantic partners are perceived as less objectifying and more enjoyable than comments made by colleagues, strangers, and friends (Lameiras-Fernández, Fiske, González Fernández, & Lopez, 2018).

By contrast, some sexually objectifying behaviors have deleterious consequences for women. For instance, authors have found that unwanted sexual advances positively correlate with anxiety and negatively correlate with self-esteem (Lozano, Valor-Segura, Sáez, & Expósito, 2015; see also, Harned, 2000). Miles-McLean et al. (2015) also found that both body evaluation behaviors and unwanted sexual advances increase the frequency of trauma symptoms, such as nightmares and sexual problems. Moreover, Harned (2000) found that sexual harassment predicts eating disorders and depression among women.

Although positive appearance comments may have positive effects on women's mood, these research findings suggest that other forms of interpersonal sexual objectification may have a detrimental effect on women's mental health, but also on sexual variables. Nevertheless, further studies are needed to more thoroughly investigate and replicate the effect of interpersonal sexual objectification experiences on such variables.

4.2.3 What are the consequences for women's cognitive performance?

The cognitive-related consequences of being the target of interpersonal sexual objectification have frequently been investigated through manipulations in which (female) participants are exposed to male gaze. Participants were either directly confronted with male gaze (e.g., Gervais, Vescio, Allen, 2011) or anticipated an interaction with a man. In the latter case, the authors told participants that they would have to interact with a male participant in the second part of the study (e.g., Calogero, 2004). Another way to manipulate male gaze was to record a video or have a male confederate or the experimenter take photos of female participants and/or focus on their (sexual) body parts (e.g., Gay & Castano, 2010; Guizzo & Cadinu, 2016; Saguy, Quinn, Dovidio, & Pratto, 2010).

Several studies have highlighted the pervasive effect of interpersonal sexual objectification experiences on cognitive performance, and both male gaze and the anticipation of male gaze have been found to decrease cognitive performance. Indeed, Gervais et al. (2011) found that female participants confronted with the male gaze tended to perform less well on a math test than female participants in the control condition and male participants. The negative effect of the male gaze on women's performance was also found in Gay and Castano's (2010) studies, through a working memory assessment (i.e., a letter number sequence test). This time, the authors found that the decrement in performance was only observed among women with high levels of trait self-objectification (for similar results, see Kahalon et al., 2018, Study 1). However, one should note that the moderating role of trait self-objectification does not appear in all studies. For instance, Kahalon et al. (2018, Study 2) found that appearance compliments undermined women's cognitive

performance, regardless of their trait self-objectification levels. Finally, one should note that Gervais et al.'s (2011) studies highlighted what could lead to a vicious circle in which women are condemned to underperform because they are more motivated to interact with the perpetrator despite their poor performance.

Recently, Guizzo and Cadinu (2016) attempted to reveal the possible mechanism through which the decrease in performance occurs following the experience of interpersonal sexual objectification. The authors examined the mediating role of flow experiences (i.e., complete immersion in a demanding task) in the relationships between sexual objectification and cognitive performance. In this study, the authors found that exposure to the male gaze (vs. female gaze) decreased the flow experience which, in turn, led to a decrement in the women's cognitive performance on an attentional task, but only for women with high internalization of beauty ideals (Guizzo & Cadinu, 2016). These results strongly support one of the main propositions of objectification theory (Fredrickson & Roberts, 1997). Indeed, a decrease in flow experience, namely attention deficit, is expected to occur due to the internalization of sexual objectification in the self-concept (i.e., self-objectification). Such attentional deficits are theorized to be strong determinants in the occurrence of other negative outcomes (see Figure 1). This proposition was also recently investigated in Garcia et al.'s (2016) study. The authors showed that after being sexually objectified by a male interaction partner, women perceived the interaction as less authentic, which was then associated with a decrease in their performance in a cognitive performance task.

The decrease observed in women's cognitive performance following sexual objectification in interpersonal encounters also appeared in a work-related environment (Woodzicka & LaFrance, 2005). Through a procedure in which their female participants were exposed to sexual-related questions during a job interview (e.g., "Do you think it is important for women to wear bras to work?"), Woodzicka and LaFrance (2005) found that women performed less well (e.g., spoke less fluently, gave lower-quality answers) than women assigned to the control condition, who were asked surprising but non-sexualized questions (e.g., "Do you think it is important for people to believe in God?").

4.2.4 What are the consequences for interpersonal interactions?

As sexually objectifying experiences frequently occur in interpersonal and social encounters, scholars have begun to examine their consequences for ensuing interpersonal interactions. As stated above, Gervais et al. (2011) highlighted what could be a vicious circle for women's cognitive performance because they are more motivated to interact with their objectifying partner; however, such results should be considered with caution. Indeed, the evidence that women are motivated to continue to interact with the perpetrator(s) is still inconclusive and has not won unanimous support. For instance, Teng, Chen, Poon, and Zhang (2015) showed that when women were invited to imagine a situation in which they received a positive appearance comment from an interaction male partner (but not their romantic partner), the perceived likability of their male partner was undermined, which, in

turn, led to a reduced desire for affiliation with him. This result has also been found in actual interactions. Indeed, sexually objectifying interactions, in which women receive a positive appearance comment, decrease women's perceptions of interactions pleasantness (Sáez, Riemer, Valor-Segura, & Expósito, 2020). In their study, perceived interaction pleasantness was assessed through items measuring the extent to which women felt comfortable during the interaction and the extent to which they wished to see their sexually objectifying partner again. Riemer, Allen, Gullickson and Gervais (2020) showed that women's enjoyment of sexualization (Liss et al., 2011) moderates the effect of positive appearance comments on women's perceptions of their interlocutor. In particular, women with high (vs. low) levels of enjoyment of sexualization report more positive perceptions of their interlocutor (i.e., attribute higher levels of warmth and report more approach behavioral intention) when they were targeted by a positive appearance comment relative to negative appearance comment. Furthermore, Teng et al. (2015) showed that the reduction in perceived likability and desire for affiliation spills over to male strangers with similar characteristics and features as the perpetrator. The study examining this phenomenon described such strangers as undergraduate students from the same university as the interaction partner. Taken together, these research findings are in line with Garcia and colleagues' results, which showed that when women interacted with a male partner who had to evaluate them as a potential dating partner, they reported higher levels of state self-objectification, which, in turn, decreased the perceived interaction authenticity (Garcia et al., 2016). In other words, 'his' objectification of 'her' increases her (state) self-objectification, which in turn decreases the perceived interaction authenticity for women. Moreover, the perceptions of interaction authenticity then predict women's future relationship agency. In other words, women are less inclined to initiate things (e.g., ask someone out on a date, initiate sex, etc.) when they perceive the interaction as less authentic.

In a more general way, the experiences of sexual objectification in interpersonal settings also seem to undermine women's presence in social interactions. Specifically, Saguy and collaborators (2010) found that when female participants were filmed from the neck down and led to believe that the video would be inspected by an alleged male partner, they narrowed their presence in social interactions (e.g., spent less time talking) compared to other non-objectifying conditions (for similar results, see Sáez et al., 2020). The limitation of women's presence in social interactions could be interpreted as a sign of social withdrawal.

Taken together, these results highlight the negative impact of being the target of sexually objectifying experiences from the women's perspective. Broadly speaking, being targeted by sexually objectifying behaviors negatively impacts women's perceptions of their physical appearance, mental and sexual health, and cognitive performance. Indeed, research findings suggest that being the target of a focus on one's (sexual) body parts and physical appearance in social interactions has similar consequences to being exposed to sexual objectification as a witness of the phenomenon, at least on body image, mental and sexual health, and cognitive-related variables. Regarding the effects of interpersonal sexual

objectification experiences on interpersonal outcomes, research findings remain scarce and somewhat inconsistent. Some suggest that women are still motivated to interact with their perpetrator (Gervais et al., 2011), whereas others indicate that women's desire for affiliation with the perpetrator and interaction pleasantness are undermined when sexual objectification is present (Sáez et al., 2020; Teng et al., 2015).

Recently, Garcia and colleagues (2016) identified what could be a strong determinant of ensuing interactions: women's perceptions of the interaction. Indeed, to date, much less is known about the consequences of sexual objectification on women's perceptions. Research efforts have mainly examined the effect of sexual objectification on women's body-related self-perceptions (i.e., self-objectification, body satisfaction, etc.). Nevertheless, when sexual objectification occurs at interpersonal levels, investigations of its consequences should be expanded. More precisely, research should also investigate women's meta-perceptions when they are personally targeted by sexual objectification (i.e., how they think they are perceived by both external observers and perpetrators) as well as their perceptions of others when they are personally targeted by sexual objectification (i.e., how they perceive either external observers or perpetrators). Currently, research investigating such outcomes remains scarce, insofar as only women's perceptions of the perpetrator (i.e., perceived likability, Teng et al., 2015; partner's authenticity, Garcia et al., 2016) following interpersonal experience of sexual objectification have been studied.

5. Conclusion

The present Chapter has reviewed research that investigated the frequency and consequences of sexual objectification, both when it is manifested through media and interpersonal encounters. These research findings strongly support the initial proposition of Fredrickson and Roberts (1997), showing that sexual objectification has negative effect on women's perceptions of their physical selves, mental and sexual health and cognitive performances. However, when occurring in interpersonal and social contexts, women's perceptions should be investigated in other ways than women's perceptions of their physical selves. In particular, women's meta-perceptions and their perceptions of others following interpersonal sexual objectification could be further studied. The lack of research on such outcomes (i.e., women's meta-perceptions and women's perceptions of others when sexually objectified) is quite surprising considering the interest shown in individuals' perceptions of sexually objectified women.

Indeed, the perceptions of individuals (i.e., both women and men) confronted with depictions of sexually objectified female bodies have already been the subject of several studies. These studies mainly evidenced that the focus on female bodies decreases the attribution of human characteristics (e.g., Heflick & Goldenberg, 2009; Heflick et al., 2011; Vaes et al., 2011). However, when sexual objectification occurs in interpersonal and social encounters, women's meta-perceptions and their perceptions of interaction partners are both relevant to explore. Nevertheless, to the best of our knowledge, women's perceptions, such as their meta-perceptions and the perceptions they have of others, have largely been

set aside in the study of the consequences of sexual objectification in interpersonal contexts. When such outcomes were taken into account in the studies, however, they appeared to play a key role (Garcia et al., 2016; Teng et al., 2015). Given that exposure to sexual objectification decreases the attribution of human characteristics to objectified women (e.g., Heflick et al., 2011; Heflick & Goldenberg, 2009; Vaes et al., 2011), we suggest that women's perceptions following sexual objectification in interpersonal encounters should be investigated in light of dehumanization processes. Hence, Chapter 2 presents theoretical information on dehumanization and its importance and relevance when considering interpersonal maltreatments such as sexual objectification.

Chapter 2.

Dehumanization

Dehumanization

Broadly speaking, dehumanization has been defined as the denial of humanness to others. It was thought of for a long time as a process involved in situations of war, genocide, and extreme forms of violence (Bandura, 1999; Kelman, 1973). However, recent theoretical perspectives have swept away those restrictive views, showing that the denial of humanness may also occur in subtler and banal social interactions. As stated in Haslam and Loughnan's (2014) paper, dehumanization can be "blatant or subtle; driven by hate, lust or indifference; collectively organized or intensely personal" (p.5.3). Currently, the dual model of dehumanization (Haslam, 2006) is the most widespread in the field. This model was constructed considering previous theoretical propositions (e.g., infra-humanization theory, Leyens et al., 2000, 2001) and the way diverse social groups and individuals are denied humanness (e.g., women, racial, ethnic and sexual minorities, medical patients, etc.).

1. Infra-humanization theory

In the early 21st century, Leyens and colleagues (2000; 2001) were the first to propose a theory of a more widespread and less blatant way of denying people's humanness through the term *infra-humanization*. Infra-humanization theory suggests that outgroup members are perceived as less human than ingroup members. Three main attributes distinguish humans from animals: intelligence, language, and secondary (i.e., uniquely human) emotions (Leyens et al., 2000). Secondary emotions (e.g., compassion, shame, contempt), as compared to primary emotions (e.g., joy, anger, fear), are more evolved as they "involve cognition morality, are caused by internal factors, cannot be easily observed, occur later in development" (Demoulin et al., 2004, p.89). The authors decided to investigate the attribution of primary and secondary emotions to ingroup and outgroup members because, unlike intelligence and language, secondary emotions are less determined by social category membership (i.e., high- vs. low-status groups) and cultural context (Demoulin et al., 2004).

Several empirical studies have corroborated the theoretical propositions of Leyens and collaborators (2000; 2001). Indeed, at intergroup levels, people attribute more secondary emotions to their ingroup than to outgroups but equal levels of primary emotions to humans and animals (e.g., Cortes, Demoulin, Rodriguez, Rodriguez, & Leyens, 2005; Leyens et al., 2003; Vaes, Leyens, Paladino & Miranda, 2012; see also, Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007). Such results are observed in the absence of conflict between social categories (e.g., Leyens et al., 2007) and occur independently of the ingroup favoritism effect (e.g., Demoulin et al., 2009) and valence (i.e., positive or negative) of emotions (e.g., Leyens et al., 2001). Other research has found that infra-humanization also appears with indirect measures (e.g., Gaunt, Leyens, & Demoulin, 2002; Paladino et al., 2002).

Inasmuch as denying uniquely human emotions (i.e., secondary emotions) to individuals amounts to equating them to animals, infra-humanization theory offered the first framework to assess how individuals can be dehumanized by such an association. However, a review of the literature and a consideration of another form of humanness led Haslam (2006) to suggest that people may also be dehumanized through an assimilation with objects and/or machines. Haslam's reasoning is presented in the following section.

2. The dual model of dehumanization: theoretical propositions

Infra-humanization theory (Leyens et al., 2000; 2001) alludes to a way of conceptualizing humanness through what is unique to human beings. However, Haslam, Bain, Douge, Lee, and Bastian (2005) propose that "humanness might also be understood in a non-comparative sense as the features that are central to or typical of humans" (p.938). In particular, the authors suggest that some characteristics may be central to or typical of (but not unique to) humans and do not distinguish us from other species. In this case, humanness is referred as human nature characteristics. Based on infra-humanization theory, Haslam et al. (2005) proposed that the second way to define humanness is to identify what characteristics distinguish human beings from animals. This comparative form of humanness is referred as uniquely human characteristics. Haslam and colleagues (2005) identified the personality traits that are perceived as "exclusively or uniquely human" and those that are perceived as "an aspect of human nature". Considering the absence of correlation between human nature and uniquely human characteristics, Haslam et al.'s (2005) results emphasize the difference between these two forms of humanness. These research findings led Haslam to make a distinction between two senses of humanness and suggest two forms of dehumanization as functions of which humanness is denied (i.e., human nature or human uniqueness) (Haslam, 2006).

Before the formulation of the dual model of dehumanization, Haslam (2006) reviewed the existing literature and showed that dehumanization affects a wide range of social groups, such as immigrants, ethnic and racial minorities, people with disabilities, patients receiving medical care, women, etc. Thus, Haslam highlighted that as a function of their category membership, people seem to suffer from different forms of dehumanization.

Firstly, evoking ethnicity, race, and immigration, Haslam (2006) alluded to a first way to assimilate people with non-human species (i.e., animals). The author mentioned racist depictions which assimilate Africans with apes as well as depictions of Jews as parasites and vermin during the Holocaust. Similarly, people with cognitive disabilities can be the target of animalization, due to their presumed "high procreation rates, their inability to live cultured lives, their presumed insensitivity to pain, their propensity for immoral and criminal behavior, and their instinctual rather than rational nature" (O'Brien, 2003, p.333). Consequently, these depictions lead to such populations being perceived as savages, behaving impulsively and infecting our societies.

Secondly, Haslam mentioned the assimilation of humans with objects and/or machines. Indeed, Haslam pointed out the lack of consideration for patients in modern medicine and the importance of technology in personal care, which implies a denial of patients' individuality, agency, and autonomy. In the same vein, the emergence of technology in our societies can be responsible for "mechanization", particularly through "the robotic pursuit of efficiency and regularity, automaton-like rigidity and conformity" (Haslam, 2006, p.253).

Then, considering gender and particularly women, Haslam referred to both the feminist writings on objectification, which state that women are assimilated with objects, and to those which state that women are more strongly associated with animals. Indeed, according to Ortner (1972), women are "seen as achieving less transcendence of nature than men" (p.25), meaning they are probably more associated with nature and, hence, more animalized than men (see also, Reynolds & Haslam, 2011). Women thus appear to be at risk of both kinds of dehumanization (i.e., animalization and mechanization) (Haslam, 2006).

Through this review of the literature and the proposition of two forms of humanness, Haslam (2006) highlighted the existence of two ways to associate humans with non-human entities: an association with animals or an association with objects and/or machines. Hence, considering both past research and specific forms of dehumanization as a function of social category membership, Haslam (2006) proposed a dual model of dehumanization (see Figure 2), particularly mentioning civility, refinement, moral sensibility, rationality, logic, and maturity as uniquely human characteristics. The denial of such characteristics leads to the animalistic dehumanization of individuals. Animalistic dehumanized individuals are perceived as coarse and lacking in self-control, intelligence, and culture. People that are denied characteristics that distinguish humans from animals are seen as childish or animal-like. However, characteristics such as emotional responsiveness, interpersonal warmth, cognitive openness, agency, individuality, and depth are theorized as human nature characteristics. The denial of characteristics that are typical of humans leads to the mechanistic dehumanization of individuals. Mechanistically dehumanized individuals are perceived as lacking in emotionality, warmth, cognitive openness, agency, and depth. People that are denied characteristics that are central to human beings are seen as objects or robot-like.

Do you feel perceived as a full human being when you are treated as a body?

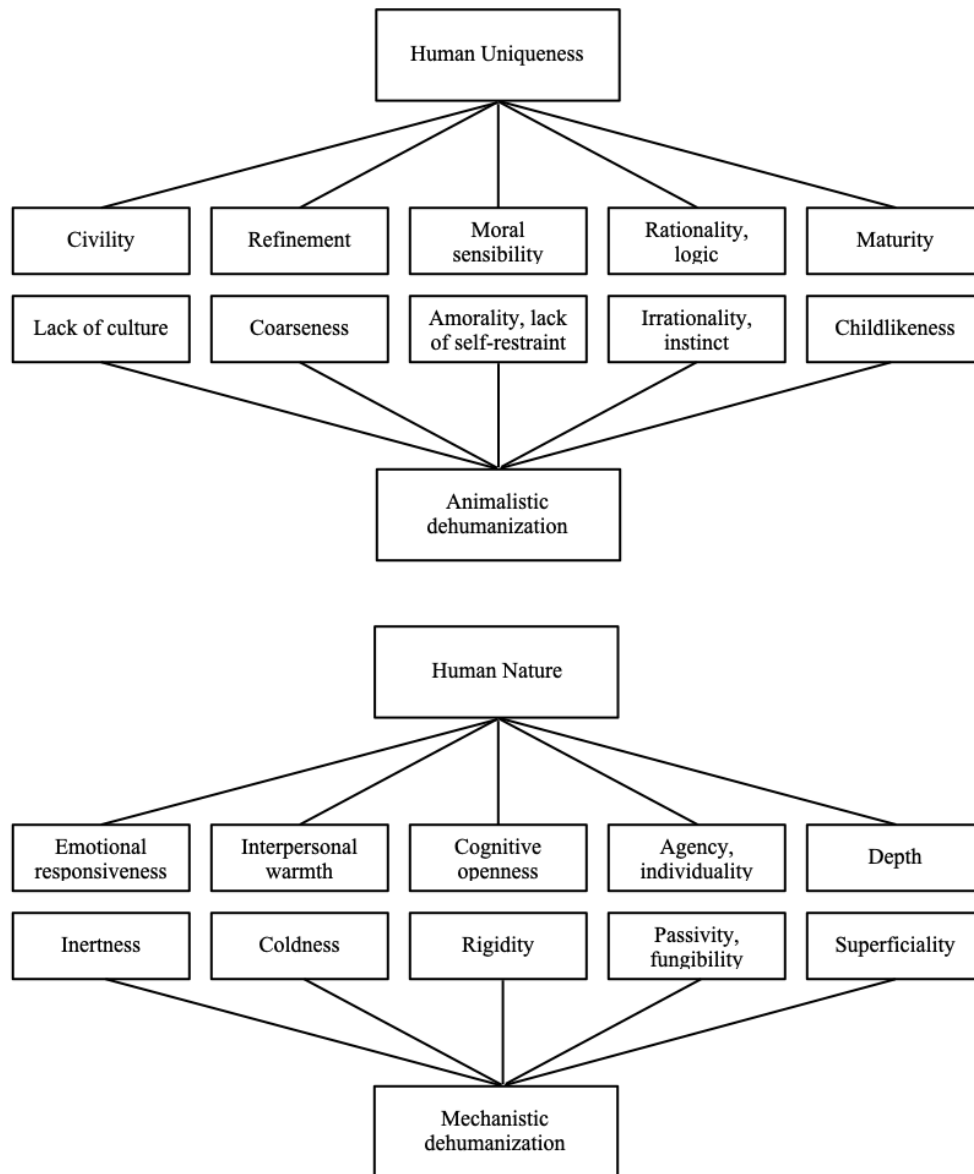


Figure 2. The two forms of humanness and corresponding forms of dehumanization as proposed by Haslam (2006)

Loughnan and Haslam (2007) found empirical support for Haslam's model and investigated the social perceptions of two social groups. Specifically, the authors found that artists were more strongly associated with human nature traits, suggesting the animalistic dehumanization of artists, whereas businesspeople were more strongly associated with

human uniqueness traits, suggesting the mechanistic dehumanization of business people. These results highlight the importance of the two forms of humanness in the perceptions of social groups.

To date, Haslam's model remains the most commonly used in the literature on dehumanization. However, other theoretical models of dehumanization have been proposed since Haslam's propositions (e.g., the mind perception model, Gray, Gray, & Wegner, 2007; the ABC model of dehumanization, Tipler & Ruscher, 2014). Gray et al. (2007) proposed a model in which mind perception is attributed to people as a function of two dimensions: agency and experience. Agency refers to self-control, morality, memory, emotion recognition, planning, communication, and thought characteristics, whereas experience refers to hunger, fear, pain, pleasure, rage, desire, personality, consciousness, pride, embarrassment, and joy characteristics. These two dimensions are close to the animalistic and mechanistic dimensions proposed by Haslam (2006), however, an alternative model envisages dehumanization in a quite different way. The ABC model of dehumanization (Tipler & Ruscher, 2014) suggests the existence of three dimensions of agency (i.e., affective, behavioral, and cognitive) that are differently attributed to social groups. The attributions of affective, behavioral, and cognitive agency in turn determine perpetrators' emotional reactions and behaviors. Unlike the dual model of dehumanization (Haslam, 2006), this model had received little empirical support and thus remains a marginal approach to dehumanization. Consequently, Haslam's model is used in a wide variety of empirical studies, whether they investigated dehumanization processes from the perpetrators' or victims' perspective. The two following sections review the research examining dehumanization from both the perpetrators' and victims' perspectives.

3. Dehumanization processes: the perpetrators' perspective

3.1 Social categories targeted by dehumanization

As stated above, a wide range of social groups and individuals may suffer from dehumanization. Indeed, various individual characteristics, such as ethnicity, race, sexual orientation, and gender, may lead to dehumanization.

Initially, studies mostly investigated the dehumanization of ethnic and racial groups. Such groups were, in particular, more strongly associated with animal-related concepts (Haslam, 2006). For instance, Goff, Eberhardt, Williams, and Jackson (2008) highlighted the Black-ape association. Specifically, research findings indicated that people unconsciously more strongly associated Blacks and apes than Whites and apes. This form of racial dehumanization can appear in early childhood, with White children attributing fewer uniquely human characteristics to Black (vs. White) children (Costello & Hodson, 2012). Ethnic minorities are also targeted by dehumanization, such as Arabs (e.g., Kteily, Bruneau, Waytz, & Cotterill, 2015; Prati, Moscatelli, Pratto, & Rubini, 2016), Palestinians (e.g., McDonald et al., 2016; see also, Saguy et al., 2015), and Roma (e.g., Dalsklev &

Kunst, 2015). Dehumanization also targets immigrant groups (e.g., Hodson & Costello, 2007) and refugees (e.g., Esses, Veenvliet, Hodson, & Mihic, 2008).

Interestingly, subtle forms of dehumanization may also appear between people who live in the same country. For instance, northern Italians more strongly associated human stimuli and ingroup names than human stimuli and outgroup names (Boccatto, Capozza, Falvo, & Durante, 2008). In the same vein, Paladino et al. (2002, Study 4), found that French-speaking Belgian students more strongly associated secondary emotions with typical French names (e.g., Pierre, Luc, etc.) than with typical Flemish names (e.g., Jeroen, Jos, etc.). These latter results are particularly interesting because it shows that subtle forms of dehumanization occur even for groups that are not particularly stigmatized.

People may also suffer from dehumanization because of their sexual orientation. Research conducted by Brown and Hegarty (2005) found that heterosexuals do not inhumanize homosexuals but associate secondary emotions based on gender stereotypes (i.e., secondary emotions were more strongly attributed to heterosexual women than to lesbian women) (see also, Kite & Deaux, 1987). However, more recently, Fasoli et al. (2016) showed that exposure to homophobic epithets (e.g., faggot) led heterosexual participants to associate fewer human-related words with homosexuals than in conditions in which participants were exposed to category labels (e.g., gay) or generic insults (e.g., asshole). In a second study, Fasoli et al. (2016) found that exposure to homophobic epithets led participants to increase their physical distance from a gay man. Asexuals appear to be the most dehumanized group of all sexual minorities. MacInnis and Hodson (2012) showed that among heterosexual, bisexual, and homosexual groups, the asexual group was attributed lower levels of uniquely human and human nature traits, indicating both animalistic and mechanistic dehumanization.

One should notice that the ascription of human characteristics also varies across the life span. As long as uniquely human characteristics are perceived as features acquired during human development (Haslam et al., 2005, Study 1; see also, Demoulin et al., 2004), it seems logical to expect that young children will be seen as possessing lower levels of uniquely human traits than adults. Bastian, Laham, Wilson, Haslam, and Koval (2011) found that children are rated as possessing low levels of uniquely human traits. Interestingly, the perceptions of uniquely human characteristics also decrease with age. For instance, Boudjemadi, Demoulin, and Bastard (2017) found that elderly people were attributed fewer uniquely human characteristics by their younger counterparts (see also, Wiener, Gervais, Brnjic, & Nuss, 2014).

These research findings suggest that dehumanization occurs frequently in interpersonal and intergroup interactions, as a wide range of social groups and individuals may suffer from dehumanization. The pervasive tendency to dehumanize others weighs on our mind, given its strong negative effect on intergroup relationships. The consequences of dehumanization on perpetrators' behaviors towards dehumanized targets are reported in the following section.

3.2 What are the consequences of dehumanization?

Broadly speaking, dehumanization has negative consequences for social and interpersonal encounters. Initially, dehumanization was thought to trigger violence and aggressiveness towards dehumanized victims (Bandura, 1999; Kelman, 1973). These initial propositions have been corroborated by more recent studies showing that diverse antisocial behaviors may appear following dehumanization.

First, one should mention the studies showing that dehumanization increases the severity of punishment for individual offenders. For instance, Viki, Fullerton, Raggett, Tait, and Wiltshire (2012) investigated the consequences of dehumanization for sex offenders and found that it was associated with lower levels of support for rehabilitation, longer sentences for convicted pedophiles and rapists, and higher support for their social exclusion and violent ill-treatment (Viki et al., 2012). In the same vein, Stevenson, Malik, Totton, and Reeves (2014) investigated the punishments given to juvenile sex offenders. The authors showed that the dehumanization of juvenile sex offenders was associated with lower levels of empathy, which was positively associated with participants' perceptions that such offenders were a threat to society. Finally, the perception that juvenile sex offenders were a threat for society was associated with participants' desire to register them as sexual delinquents. In a more general way, Bastian, Denson, and Haslam (2013) found that participants' offender dehumanization predicted the severity of punishments, independently of severity and type of crime.

Goff et al. (2008) investigated the consequences of racial dehumanization for Black criminal suspects and found that the Black-ape association altered White participants' judgment of Black criminal suspects. When participants were primed with ape (vs. big cats) stimuli and exposed to a video clip in which police officers were seen violently subduing a Black (vs. White) suspect, they reported that the violence was more justified (Goff et al., 2008; Study 5). Moreover, the authors showed that Black criminal suspects were more frequently ascribed apelike references than their White counterparts, and such ascriptions were associated with a higher likelihood of being executed by the state (Goff et al., 2008; Study 6). Harsher judgments of Black people are not restricted to adult criminal suspects. Indeed, even Black children bear the cost of the Black-ape association. Precisely, the implicit association between Blacks and apes predicted age overestimation of Black children and led people to perceive them as less innocent than their other age-peers (Goff et al., 2014).

Dehumanization of groups also predicts harsher treatments in various social contexts and against non-criminal and non-suspicious social groups (e.g., Dalsklev & Kunst, 2015; Kteily et al., 2015; Leidner, Castano, & Ginges, 2013; Zhang, Chan, Teng, & Zhang, 2015). For instance, in the context of a real-world conflict (i.e., the Israeli-Palestinian conflict), Leidner et al. (2013) showed that the extent to which Palestinians attribute sentence – though as a specific form of dehumanization in those studies – to Jewish Israelis predicted conflict resolution strategies through different notions of justice. The

authors showed that sentence was negatively associated with retributive justice and positively associated with restorative justice. In turn, Leidner et al. (2013) showed that retributive justice then promoted support for bombing attacks whereas restorative justice promoted support for peace strategies. Exploring the effects of blatant forms of dehumanization, Kteily et al. (2015) showed that they exacerbate many aggressive attitudes and behaviors. Specifically, perceiving others as less evolved increases opposition to migration, support for drone attacks and punitive forms of counter-terrorism such as torture, as well as acceptance of discriminatory social policy (see also, Costello & Hodson, 2012), unjust treatment, and vengeance.

The expression of anti-social behaviors has also been noticed outside conflict or war. For instance, Viki, Osgood, and Phillips (2013) examined the role of dehumanization in willingness to torture outgroup members. In particular, the authors found that the more Christian participants dehumanized Muslims, the more they reported willingness to torture them. In a more subtle form, dehumanization also decreases favorable attitudes towards both immigrant groups (e.g., Hodson & Costello, 2007) and refugees (e.g., Esses et al., 2008). Zhang et al. (2015) showed that dehumanization of innocent victims was positively associated with participants' support for internal forced migration. Dehumanization has also been linked to other forms of violence, such as acts of sexual violence. For instance, Rudman and Mescher (2012) showed that men who animalistically and mechanistically dehumanized women were more prone to rape and sexually harass women (see also, Bevens & Loughnan, 2019; Methot-Jones, Book, & Gauthier, 2019).

All in all, these results highlight the extreme forms of interpersonal and intergroup violence and antisocial behaviors induced by dehumanization. However, the absence of pro-social behaviors in interpersonal and intergroup relationships could also undermine intergroup relations. Indeed, research has found that, in addition to an increase in the occurrence of anti-social behaviors, dehumanization decreases the expression of pro-social behaviors towards the dehumanized victims. For instance, Vaes, Paladino, Castelli, Leyens, and Giovanazzi (2003) investigated people's tendencies to express pro-social behaviors in relationship to the differential attribution of primary and secondary emotions to ingroup and outgroup members. As theorized by infra-humanization theory, people more easily attribute and associate secondary emotions to ingroup members than outgroup members. Vaes and colleagues (2003) thus decided to investigate people's behavioral reactions towards ingroup and outgroup members who expressed either primary or secondary emotions. Results showed that participants expressed nicer responses and higher tendencies to help ingroup (vs. outgroup) members when secondary emotions were expressed (see also, Vaes, Paladino, & Leyens, 2002). This difference between ingroup and outgroup members was not observed when primary emotions were expressed.

Similarly, Cuddy, Rock, and Norton (2007) found that the denial of secondary emotions to outgroup victims of Hurricane Katrina decreased participants' intention to help such victims. Recently, Andrighetto, Baldissarri, Lattanzio, Loughnan, and Volpato (2014) expanded Cuddy et al.'s (2007) results through studies that examined the consequences of

both animalistic and mechanistic dehumanization for participants' willingness to help victims of another natural disaster, examining Italian participants' willingness to help either Japanese or Haitian earthquake victims. Andrighetto et al. (2014) found that animalistic dehumanization of Haitians and mechanistic dehumanization of Japanese decreased Italians participants' empathy for the victims, which in turn reduced their intention to provide help for them.

The decrease in empathy following dehumanization has been demonstrated in various studies (e.g., Čehajić, Brown, & González, 2009; see also, Nagar & Maoz, 2016). In a quite logical way, the attribution of uniquely human characteristics to people with mental illness increases compassion for patients (Martinez, 2014). Despite research findings that give evidence for the positive effect of humanization and empathy in the medical domain (Haque & Waytz, 2012; Haslam, 2007; see also, Diniz, Bernardes, & Castro, 2019), dehumanization might also have functional and positive consequences for healthcare workers. Vaes and Muratore (2013) showed that the attribution of uniquely human emotions to patients increased symptoms of burnout (i.e., lower professional efficacy, greater disillusionment, and psycho-physical exhaustion) among healthcare workers who had frequent contact with patients. Hence, beyond the occurrence of anti-social behaviors and reduction in pro-social behaviors following dehumanization, functional consequences may appear in response to dehumanization in certain situations. In recent decades, research has mainly focused on the consequences of dehumanization from the perspective of perpetrators. Nevertheless, in order to apprehend the full spectrum of dehumanization processes, one should consider research that examined the victims' perspective.

4. Dehumanization processes: the victims' perspective

Dehumanization processes have mainly been investigated from the perpetrators' perspective, setting aside the victims' perspective. In other words, research has mainly investigated the factors that trigger dehumanizing perceptions from the perpetrator's perspective as well as its consequences from the latter's viewpoint (i.e., the person who dehumanizes other(s)). The victims of dehumanization have thus received less consideration in research, and many processes related to dehumanization remain either unexplored or under-investigated.

Dehumanization can take multiple forms when investigated from the victims' perspective. A first way to investigate the victims' perspective is to study people's perceptions of how they are perceived by others. In the literature, this kind of perception has generally been called *meta-perception*, defined by Frey and Tropp (2006) as "what people think others think of them" (p.265). In light of this definition, the term *metadehumanization* was recently introduced in the literature, defined by Kteily, Hodson, and Bruneau (2016) as the "perceptions that one's own group is perceived by another as less than fully human" (p.3) when occurring at intergroup levels. However, in order to adopt a more comprehensive view of metadehumanization processes, Demoulin, Maurage, and Stinglhamber (2021) proposed that metadehumanization occurs when the victims think

that they are denied humanness by others, due either to their group membership or personal characteristics. Metadehumanization can thus occur at both intergroup and interpersonal level. Despite recent investments in the study of metadehumanization processes, research on the topic remains scarce.

A second way to investigate the victims' perspective is to study people's perceptions of themselves, that is, self-perceptions. Self-perceptions have been defined as the knowledge individuals have about themselves regarding their attitudes, emotions, internal states, and characteristics (Bem, 1972). Self-dehumanization would thus occur when dehumanized victims integrate dehumanized perceptions in their self-concept, consequently attributing fewer human characteristics to themselves. Here again, Demoulin et al. (2021) propose that self-dehumanization processes can affect both personal and social identity. Hence, as a function of the activation of either personal or social identity, people will deny human characteristics to their self-concept as either a function of their personal characteristics or of their group membership.

The dual model of dehumanization (Haslam, 2006) has usually been applied in studies that investigated metadehumanization and self-dehumanization processes, investigating both dimensions of dehumanization (i.e., animalistic and mechanistic). In other words, researchers have frequently measured both animalistic and mechanistic forms of metadehumanization (e.g., Bastian & Haslam, 2011; Demoulin et al., 2020; Yang et al., 2015) as well as animalistic and mechanistic self-dehumanization (e.g., Bastian & Haslam, 2010; Bastian, Jetten, et al., 2013; Renger et al., 2016, Study 2; Yang et al., 2015). Current research on the antecedents and consequences of metadehumanization and self-dehumanization is presented in the following sections.

4.1 The antecedents of metadehumanization

To date, research on the antecedents of metadehumanization has mainly focused on the key role of interpersonal maltreatment. For instance, Bastian and Haslam (2011) investigated diverse forms of interpersonal maltreatment and suggested that common forms of such maltreatment, such as disrespect or patronizing interactions, may lead to a loss of status and, hence, increase feelings of animalistic metadehumanization. In contrast, situations in which people's identity is denied, such as social ostracism, can lead to mechanistic metadehumanization. Recently, Yang, Jin, He, Fan, and Zhu (2015) partly confirmed Bastian and Haslam's (2011) expectations, showing that a loss of status increases the animalistic form of metadehumanization from the victims' perspective. Specifically, the authors found that when participants were deprived of their need for control (i.e., placed in a context of powerlessness), they reported being perceived as lacking in uniquely human characteristics (i.e., animalistic metadehumanization) by both powerful participants (Study 2) and external observers (Study 3; Yang et al., 2015). In the same vein, Renger et al. (2016) showed that participants assigned to a low-respect condition reported more metadehumanization than participants assigned to high-respect and neutral conditions.

In the specific field of organizational psychology, scholars suggested that employees may be dehumanized by their organization through a strong focus on employees' productivity to satisfy organizational needs. When dehumanization occurs in organizational contexts, researchers employ the term *organizational dehumanization*, defined as employees' experiences of being dehumanized (Bell & Khoury, 2011). Here again, interpersonal maltreatment received by employees seems to play a key role in the occurrence of organizational dehumanization. For instance, Caesens et al. (2019) investigated abusive supervision as a form of interpersonal maltreatment occurring in the workplace. Through a series of three studies, the authors showed that abusive supervision led employees to report higher levels of organizational dehumanization whereas when they were valued by their organization, they reported less organizational dehumanization (Caesens et al., 2017). Similarly, organizational justice lowered employees' levels of organizational dehumanization (Bell & Khoury, 2016).

To sum up, these research findings emphasize the key role of interpersonal maltreatment in the occurrence of metadehumanization. Taking into account such findings, it appears that metadehumanization occurs when a person denies someone else's status or individuality and thus does not take into account, or even thwarts, their fundamental human needs (see also, Raja, Shah, Hamad, Van Kanegan, Kupersmidt, & Kruthoff, 2015). These perceptions may be spread to external observers, so that victims' meta-perceptions will be the same whether we ask them to report their perceptions of how they are seen by the perpetrator(s) of interpersonal maltreatment or by potential external observers (Yang et al., 2015).

Recently, Demoulin et al. (2020) provided the first evidence for such theoretical propositions. Based on the self-determination theory (SDT) (Ryan & Deci, 2000), the authors proposed that "social targets will perceive a maltreatment as dehumanizing when their fundamental needs are undermined" (p.4). Indeed, one should notice that fundamental human needs (i.e., for autonomy/control, competence/self-efficacy, and relatedness) are frequently thwarted in the reviewed literature beforehand. For instance, the need for control/autonomy was impaired in the manipulation of power used in Yang et al.'s (2015) studies. Within the organizational domain, abusive supervision was measured with items such as "My boss reminds me of my past mistakes and failures" and "My boss does not allow me to interact with my coworkers", which suggests that being confronted with abusive supervision undermines the needs for competence/self-efficacy and control/autonomy. Similarly, Bastian and Haslam (2011) used vignettes describing situations in which needs for relatedness (e.g., being socially ostracized), autonomy/control (e.g., being denied autonomy), and competence/self-efficacy (e.g., being treated as hopeless and stupid) were thwarted. Hence, in an effort to strengthen the research findings on metadehumanization processes, Demoulin and colleagues (2020) proposed a general model of metadehumanization, which identifies its main antecedents and consequences from the victims' point of view (see Figure 3).

Do you feel perceived as a full human being when you are treated as a body?

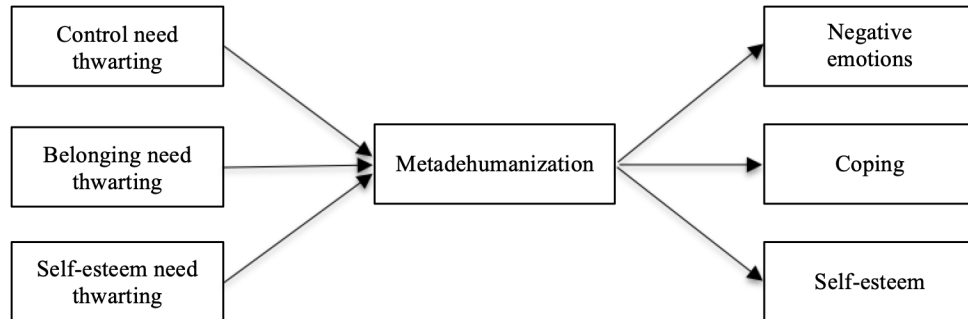


Figure 3. The general model tested and proposed in three studies by Demoulin et al. (2020)

Demoulin et al. (2020) gave evidence for their proposed theoretical model by showing that across three populations targeted by dehumanization (i.e., women, patients with severe alcohol use disorders (SAUD), and employees), failure to satisfy fundamental human needs in interpersonal interactions was associated with higher levels of metadehumanization.

Such theoretical propositions and research findings are also in line with Moor and colleagues' (2013) study of interpersonal sexual objectification and metadehumanization processes. The authors examined metadehumanization levels following different traumas (e.g., rape, sexual harassment, terror incident, serious car accident, sudden loss, etc.). Participants reported being stripped of their humanity (i.e., metadehumanization) at higher levels during rape or sexual harassment experiences than in other types of traumatic events. Here again, these results highlight the importance of interpersonal interactions in the occurrence of metadehumanization.

As can be expected, the feeling of being dehumanized by someone else is not without important consequences for both the dehumanized victims and ensuing interactions. The following section thus presents research that has examined the consequences of metadehumanization from the victims' perspective.

4.2 The consequences of metadehumanization

Over the last decade, researchers have begun to conduct studies on the consequences of metadehumanization, focusing mostly on emotional, cognitive, and behavioral consequences. Bastian and Haslam (2011), who were interested in the emotional and cognitive consequences, found that when their participants experienced mechanistic metadehumanization, they reported higher levels of anger, sadness, and cognitive deconstructive states. However, when their participants experienced animalistic metadehumanization, they reported higher levels of shame, guilt, and aversive self-awareness. Some studies have attempted to replicate these findings but have either only partly replicated them (Zhang, Chan, Xia, Tian, & Zhu, 2017) or failed to replicate the

correlations between the two forms of metadehumanization and the specific emotional reactions highlighted in Bastian and Haslam's (2011) studies (Demoulin et al., 2020). For instance, Zhang and colleagues (2017) found that when participants were confronted with evaluations in which their human nature traits were denied (i.e., mechanistic dehumanization), they reported higher levels of sadness but not anger. On the other hand, being confronted with evaluations in which their uniquely human traits were denied (i.e., animalistic dehumanization) led participants to report feelings of shame but also sadness. Interestingly, in this study the effects of metadehumanization remained significant when controlling for the experience of receiving general negative evaluations.

The behavioral consequences of metadehumanization have mostly been investigated at intergroup level, that is, when the group memberships of participants are salient. Across a large number of studies and considering real-world conflicts, Kteily et al. (2016) found that an increase in metadehumanization resulted in the dehumanization of the perpetrators (i.e., reciprocal dehumanization), which then led people to report higher support for aggressive policies, attitudes, and behaviors. The effect of metadehumanization remained significant when controlling for outgroup prejudice, showing that metadehumanization has a significant effect above and beyond mere negative meta-perceptions. Landry, Ihm, and Schooler (2021) extended Kteily et al.'s (2016) results to U.S.-Russian relations. The authors showed that when Americans were assigned to situations in which they were led to feel dehumanized by Russians (i.e., metadehumanization), they dehumanized Russians in return, which then improved outgroup hostility (i.e., support for social distance, discriminatory social policies, aggressive military action, etc.). Moreover, both Kteily et al. (2016) and Landry et al. (2021) investigated pathways explaining the increase in reciprocal dehumanization following metadehumanization. The authors found that the increase in social identity threat and desire to reciprocate successively mediated the link between metadehumanization and reciprocal dehumanization. The relation between metadehumanization and aggressiveness has also been demonstrated following situations of social exclusion (i.e., social ostracism). In particular, using animal metaphors (vs. denigrating but non-dehumanizing attributes) to label victims of social exclusion increased animalistic metadehumanization, which, in turn, led participants to report higher aggressive tendencies (Andrighetto, Riva, Gabbiadini, & Volpato, 2016).

In their general model of metadehumanization (see Figure 3), Demoulin and colleagues (2020) also identified three consequences that can be observed among victims after metadehumanization: a reduction in self-esteem, an increase of negative emotions (except for SAUD participants), and both avoidance and active (except for employees) coping strategies. Demoulin et al.'s (2020) results seem to be in line with research conducted in the field of organizational psychology. For instance, Caesens and colleagues (2019) showed that among employees, perceptions of being dehumanized by their organization were positively associated with turnover intentions (see also, Nguyen, Dao, Nhan, & Stinglhamber, 2021) and negatively associated with job satisfaction and affective commitment (Caesens et al., 2017). Evidence thus suggests that employees prefer to adopt avoidance coping strategies rather than actively deal with the dehumanizing situation. In

contrast, lower levels of organizational dehumanization were associated with higher levels of wellbeing among employees (Caesens et al., 2017).

Moor and colleagues (2013) also investigated the way victims react to rape and sexual harassment experiences. The authors found that, compared to other types of traumatic event (e.g., terror accident, sudden loss, etc.), the occurrence of metadehumanization during rape or sexual harassment experiences was associated with rape-induced “freezing” (also known as “tonic immobility” or “paralysis induced by rape”), self-blame, and post-traumatic stress disorder (PTSD).

Finally, one could question the integration of such dehumanized perceptions in the self-concept of the victims, that is, self-dehumanization. Indeed, to date, research has shown that metadehumanization and self-dehumanization seem to frequently occur in very similar situations. For instance, Renger et al. (2016) found that intragroup disrespect increased both participants’ metadehumanization (Study 1) and self-dehumanization (Study 2). Similarly, social ostracism is known to increase metadehumanization (Bastian & Haslam, 2011) and self-dehumanization (Bastian & Haslam, 2010). Hence, based on this initial evidence, it seems possible that self-dehumanization also appears following interpersonal maltreatment. Research supports such assumptions and is presented in the following section.

4.3 Self-dehumanization

Self-dehumanization occurs when people see themselves as less than fully human. Despite evidence that people tend to attribute more human characteristics to themselves than to others (Haslam et al., 2005), recent studies have shown that people may also self-dehumanize, attributing fewer human characteristics to the self in some circumstances (e.g., Baldissarri et al., 2014; Bastian & Haslam, 2010; Bastian, Jetten, & Radke, 2012; Bastian, Jetten, et al., 2013; Kouchaki, Dobson, Waytz, & Kteily, 2018; Loughnan et al., 2017). Self-dehumanization appears when people are the targets of interpersonal maltreatment (e.g., Baldissarri, Andrighetto, & Volpato, 2014; Bastian & Haslam, 2010; Loughnan et al., 2017) but also when they display unethical, immoral, or violent behaviors towards others (e.g., Bastian et al., 2012; Bastian, Jetten, et al., 2013; Kouchaki et al., 2018).

On the one hand, Bastian and Haslam (2010) showed that when people had to recall a situation in which they were socially excluded (vs. everyday experience vs. socially included), they self-attributed lower human nature traits. The authors extended their findings using experimental induction of social ostracism (i.e., the Cyberball game). Here again, participants mechanistically and animalistically self-dehumanized when they were assigned to the condition in which they were socially excluded (vs. socially included). The effect of interpersonal maltreatment has also been investigated in the workplace (e.g., Baldissarri et al., 2014; Loughnan et al., 2017, Study 2). Employees’ perceptions of being perceived as mere instruments by their supervisors led them to self-attribute lower levels of mental capacities such as thoughts, wishes, and intentions (Baldissarri et al., 2014). In the same vein, Loughnan et al.’s (2017, Study 2) compared self-attribution of warmth, competence, morality, but also human nature and uniquely human characteristics before

and after the recall of an experience of objectification in the workplace. The authors found that after (vs. before) the recall of an experience in which participants were objectified at work (i.e., viewed or used as a mere instrument rather than a person), either by another employee or by the job itself, they self-attributed warmth, competence, morality, human nature, and human uniqueness characteristics to a lesser extent. In line with this, Baldissarri and Andrighetto (2021) recently showed that being treated as a mere instrument increases people's self-perceptions as instrument-like (vs. human like). More closely related to the topic of the current thesis, self-dehumanization also appeared when women reported interpersonal sexual objectifying experiences. Indeed, women self-attributed less competence, warmth, and human nature and uniquely human characteristics following the recall of an experience in which someone focused on their bodies and physical appearance (Loughnan et al., 2017, Study 1).

On the other hand, it seems that people do not only self-dehumanize in response to the interpersonal maltreatment of others. Indeed, people behaving immorally tend to self-dehumanize in response to their own behaviors (Bastian, Jetten, et al., 2013; Bastian, Jetten, & Radke, 2012; Kouchaki et al., 2018). For instance, Bastian et al. (2012) found that participants rated themselves as less human when they were engaged in a violent video game (i.e., *Mortal Kombat* and *Call of Duty*) than when they were engaged in a non-violent video game. Moreover, the negative effect of interpersonal violence and maltreatments did not only apply to cyber violence. Bastian, Jetten, et al. (2013) found that participants who ostracized another person then reported lower levels of self-humanity. The negative effect of social ostracism on self-humanity was (in part) explained by the perceived immorality of participants' own behaviors (Bastian, Jetten, et al., 2013). Moreover, the authors found that the reduction in self-humanity led participants to engage in subsequent pro-social behaviors (i.e., volunteer for another experiment). Interestingly, these results occurred regardless of participants' mood and self-evaluation (Bastian, Jetten, et al., 2013, Studies 3 and 4). More recently, Kouchaki et al. (2018) more deeply investigated the link between self-dehumanization and immorality. Across a series of eight studies the authors found that "unethical behavior leads to subsequent self-dehumanization, and that self-dehumanization can in turn lead to downstream dishonesty" (Kouchaki et al., 2018, p.10). Indeed, contrary to previous results, the authors showed that one's own unethical behaviors (i.e., lying, cheating etc.) lead to self-dehumanization, which in turn explains the occurrence of subsequent unethical behaviors.

Taken together, these research findings suggest that self-dehumanization may appear in response to interpersonal maltreatment, whether perpetrated against oneself or perpetrated by oneself against others. However, further research remains necessary to predict the relationship of self-dehumanization with close variables such as metadehumanization and dehumanization of others.

5. Conclusion

Overall, this second chapter has reviewed current knowledge on dehumanization processes from both the perpetrators' and victims' perspectives. We first introduced the two main theories in the field of dehumanization, that is, *infrahumanization* theory (Leyens and colleagues, 2000; 2001) and the dual model of dehumanization (Haslam, 2006). These two models are the most frequently used to examine dehumanization processes, whether the research focuses on dehumanization from the victims' or the perpetrators' perspective. Importantly for the present thesis, which aims to investigate *metadehumanization* following interpersonal sexual objectification, we approach the antecedents and consequences of *metadehumanization*. Research suggests that *metadehumanization* frequently appears following interpersonal maltreatment (i.e., in which human fundamental needs are denied), triggers various consequences, such as negative emotions and a decrease in self-esteem, and has a deleterious effect on interpersonal interactions. Sadly, research on *metadehumanization* remains scarce, and its link with self-dehumanization and perpetrators' dehumanization has, to date, attracted little interest. Indeed, with the exception of Baldissarri and Andrichetto's (2021) research showing that being treated as an instrument increases self-perceptions as instrument-like and Kteily et al.'s (2016) and Landry et al.'s (2021) research showing that *metadehumanization* increases perpetrators' dehumanization, it remains difficult to formulate specific hypotheses about these variables. Nonetheless, these two outcomes remain important variables to investigate in further studies.

Hence, in order to have more accurate expectations of *metadehumanization* processes and their relationships with diverse variables, the following chapter reviews research findings on the largest categories (i.e., meta-perceptions, self-perceptions, and perceptions of others). This research may help us to understand and theorize relationships between the three dimensions of dehumanization from the victims' perspective (i.e., *metadehumanization*, self-dehumanization, and dehumanization of others).

Chapter 3.

Integrating literature on (sexual) objectification and dehumanization

Integrating literature on (sexual) objectification and dehumanization

1. Research on (negative) meta-perceptions, self-perceptions, and others' perceptions

People's perceptions may take various forms and are impacted by many (social) situations. Insofar as the present thesis aims at investigating women's perceptions following interpersonal sexual objectification experiences, we will mention those that are of particular interest to us. In a similar way to dehumanizing-related perceptions, people's perceptions can be classified into three main categories: meta-perceptions (i.e., how individuals think that they are perceived by others), self-perceptions (i.e., how individuals perceive themselves), and perceptions of others (i.e., how individuals perceive others). This section reviews current knowledge of these three kinds of perception and their influence on each other.

As previously reported, meta-perceptions are defined as "what people think others think of them" (Frey & Tropp, 2006, p.265). Based on mind perception literature and Ames' (2004) model, Frey and Tropp (2006) proposed a general model according to which many processes are involved in the formation of meta-perceptions. In particular, the authors examine how the strategies usually used to infer others' minds might be involved to infer others' perceptions of oneself. For instance, people may observe others' verbal and nonverbal behaviors or attempt to take others' perspective to form meta-perceptions. Another option relates to projecting one's view of oneself onto others. In this case, individuals will assume that others see them in a similar way as they see themselves. For instance, this means that people who have a positive view of themselves will believe that they are positively viewed by others, whereas people who have a negative view of themselves will believe that they are negatively viewed by others (e.g., Campbell & Fehr, 1990; Murray, Holmes, & Griffin, 2000; Murray, Holmes, Griffin, Bellavia, & Rose, 2001). Finally, people may expect to be viewed by others in light of stereotypes (e.g., Vorauer et al., 1998; Vorauer & Kumhyr, 2001).

Frey and Tropp (2006) recognized that people may form either interpersonal or intergroup meta-perceptions as a function of whether they expect to be perceived as an individual or as a group member. Hence, interpersonal meta-perceptions result from situations in which people believe that they are apprehended as individuals, whereas intergroup meta-perceptions result from situations in which people believe that they are apprehended as outgroup members. Situational factors determine whether interpersonal or intergroup meta-perceptions are formed. The salience of group membership determines the extent to which people think they are apprehended as an individual or as a group member. Independently of such considerations, the authors proposed that the strategies mentioned above are at play in the formation of both interpersonal and intergroup meta-perceptions.

Indeed, Frey and Tropp (2006) stated that “the basic strategies involved in meta-perception are likely to be the same irrespective of whether people think they are being viewed by ingroup members or by outgroup members” (p.270). However, the strategies are implied at different levels as a function of the salience of group membership, which depends on situational (e.g., intergroup conflict, presence of an outgroup member, etc.) and individual (e.g., group identification, awareness of group membership, etc.) factors. These factors determine the salience of group membership, which then determines the degree to which the different strategies are used to form either interpersonal or intergroup meta-perceptions. In particular, people are inclined to form intergroup (rather than interpersonal) meta-perceptions when the salience of group membership is high. In this case, people are particularly inclined to use stereotypes to induce others’ perceptions of them rather than projecting their self-perceptions onto others.

To date, in intergroup contexts, meta-perceptions have been studied through the term *meta-stereotypes*, which was introduced by Vorauer et al. (1998) to refer to “a person’s beliefs regarding the stereotype that out-group members hold about his or her own group” (p.917) and is mostly negative in content. Research tends to show that individuals are sometimes correct concerning intergroup meta-perceptions. For instance, African Americans think that European Americans perceive African Americans as violent and unintelligent but athletic, and such meta-stereotypes do, indeed, strongly correspond to the stereotypes held by outgroup members (i.e., European Americans) (Sigelman & Tuch, 1996). In a similar vein, Yzerbyt, Provost and Corneille (2005) asked French and French-speaking Belgian samples to rate the linguistic skills, warmth and competence these two groups. Here again, the authors found that, people are clear-sighted regarding how they believe to be perceived by others: both French and Belgian samples rate the Belgians as less skilled linguistically than the French whereas, Belgian was rated as warmer by both groups. Meta-stereotypes are likely to be activated in situations in which people feel evaluated by others (e.g., Gordijn, 2010) or in which they have low power (e.g., Lammers, Gordijn, & Otten, 2008). Research findings have frequently shown that negative meta-perceptions have damaging effects on intergroup relations (e.g., Issmer, Stellmacher, & Gollwitzer, 2013; Kamans et al., 2009; Owuamalam, Issmer, Zagefka, Klačén, & Wagner, 2014; Owuamalam, Tarrant, Farrow, & Zagefka, 2013; Vorauer et al., 1998). For instance, Vorauer et al. (1998) examined the meta-perceptions White Canadians have of how they are viewed by Aboriginal Canadians. The authors found that the more White Canadians expect to be viewed in a stereotype-consistent way by Aboriginal Canadians, the less they positively anticipate contact with an outgroup member and the more they expect to experience negative feelings during an alleged interaction (see also, Gordijn, Finchilescu, Brix, Wijnants, & Koomen, 2008). Such meta-perceptions also generate prejudice towards outgroup members (Vorauer et al., 1998). Owuamalam and colleagues (2013) also found that negative meta-stereotypes predict negative attitudes and negative evaluations towards the outgroup through feelings of anger, but only for high-identified ingroup members. Negative meta-stereotypes may even increase aggression tendencies towards outgroup members (Owuamalam et al. 2014). Specifically, negative meta-stereotypes increase the

accessibility of personal discrimination experiences, which in turn decrease perceived societal fairness. The decrement in perceived societal fairness then increases aggression towards an outgroup member (Owuamalam et al., 2014, Study 2).

Moreover, it has been found that negative meta-perceptions, such as negative meta-stereotypes, are damaging for individuals' self-esteem (e.g., Gordijn, 2010; Owuamalam & Zagefka, 2011). For instance, Gordijn (2010) found that body-dissatisfied female participants placed in a condition in which they believed that their physical appearance would be evaluated reported more negative meta-stereotypes about being overweight, which in turn undermined participants' self-evaluation. Indeed, they believed that the other person would see them in light of stereotypes attached to overweight people; specifically, body-dissatisfied participants expected to be seen as lazy, dumb, and ugly which then jeopardize participants' self-esteem.

Taken together, these results confirm that negative intergroup meta-perceptions have deleterious consequences for both intergroup and interpersonal interactions and for individuals' self-esteem. Nevertheless, it seems that the negative meta-stereotypes may also impact individuals' self-concept in a broader sense. As Gordijn (2010) stated, "beliefs about the negative views that others might have of us are likely to be incorporated into our self-concept" (p.21) (see also, Crocker & Major, 1989). This proposition is in line with Cooley's (1956) assertion that people's self-concept depends on the way they see themselves (i.e., self-perception) and they think others perceive them (i.e., meta-perception).

Following this idea, one could expect that meta-perceptions impact individuals' self-concept. The first studies that investigated such processes were probably linked to racism and its internalization. As stated in David, Schroeder, and Fernandez' (2019) literature review: "racism over lifetimes and generations can lead individuals to internalize the messages of inferiority they receive about their group" (p.1060). David et al.'s (2019) literature review showed that racism internalization results from the incorporation of negative stereotypes. It has deleterious psychological consequences, such as reducing individuals' self-esteem (e.g., Utsey et al., 2014), psychological wellbeing (e.g., Ferrera, 2016), and life satisfaction (e.g., Bailey, 2009). The idea that people may integrate (negative) meta-perceptions into their self-concept is also reminiscent of the literature on stigmatization, particularly the links between public stigma and self-stigma. In Vogel, Wade, and Hackler (2007), stigma is defined as "a mark or flaw resulting from a personal or physical characteristic that is viewed as socially unacceptable" (p.40). Hence, public stigma refers to the negative perceptions of the stigmatized individuals held by others (or the society), whereas self-stigma refers to the internalization of such negative perceptions. Previous research suggests that self-stigma can result from public stigma (e.g., Vogel et al., 2007; see also, Corrigan, Watson, & Barr, 2006). As stated by Herek (2007) on sexual stigma, "internalized stigma is an individual's personal acceptance of [sexual] stigma as a part of her or his own value system and self-concept" (p.910). A longitudinal study conducted by Vogel, Bitman, Hammer, and Wade (2013) confirmed such expectations,

showing that public stigma at time T1 predicted self-stigma at time T2 (assessed three months latter), but the reverse was not true. More recently, Griffiths, Mitchison, Murray, Mond, and Bastian (2018) investigated the internalization of stigma among people suffering from eating disorders. The authors showed that the more participants with eating disorders (e.g., anorexia, bulimia, binge eating, etc.) reported being exposed to discrimination because of such disorders, the more they self-stigmatized and felt inferior or out of place in the society. These results support Cooley's (1956) and Gordijn's (2010) propositions that negative meta-perceptions impact people's self-concept. Particularly, individuals tend to integrate negative meta-perceptions in their self-concept.

Then, one has to consider the perceptions people have of others when (negative) meta-perceptions are salient. Insofar as people experience negative meta-perceptions as an aversive situation, they will adopt different strategies to cope with it. To deal with such negative and aversive experiences, people may reciprocate such negativity through their own behaviors. Past studies have already shown that being confronted with negative meta-perceptions increases anger, hostility, and hostile behaviors (e.g., Branscombe, Schmitt, & Harvey, 1999; Kamans et al., 2009; Owuamalam et al., 2013). For instance, Moroccan teenagers living in the Netherlands who reported being negatively stereotyped by Dutch people behaved in line with such negative meta-stereotypes then endorsed more aggressive behaviors and legitimized teenage loitering and criminal and aggressive behaviors (Kamans et al., 2009). Another way to deal with negative meta-perceptions is to devaluate and derogate the person or the group holding such meta-perceptions rather than displaying hostile behaviors towards them. Research has shown that individuals tend to reciprocate negative (and positive) meta-perceptions. In other words, people tend to perceive others in the same way they think the others perceive them (Curtis & Miller, 1986). As found in Owuamalam et al.'s (2013) work, the activation of negative meta-perceptions leads participants to negatively evaluate the offenders, attributing them characteristics such as being lazy, disrespectful, and forgetful. To sum up, when individuals think that people hold negative meta-perceptions due to their group membership, they will reciprocate such negativity through their own behaviors (e.g., Kamans et al., 2009) or through negative evaluation of the offender (e.g., Curtis & Miller, 1986; Owuamalam et al., 2013).

Finally, the relationship between self-perceptions and others' perceptions may be apprehended under the prism of mind perception literature. In particular, social projection, one of the strategies involved in mind perception is defined as "a process, or a set of processes, by which people come to expect others to be similar to themselves" (Robbins & Krueger, 2005, p.32). This strategy helps people to make prediction about others' intentions, characteristics, and feelings. Until now, research found that social projection is a robust phenomenon (Mullen et al., 1985). However, people rely less on social projection when making judgements about outgroup (vs. ingroup) members (Bramel, 1963; Clement & Krueger, 2002; Ward, 1967; for a meta-analysis, see Robbins & Krueger, 2005). Similarly, social projection is impaired when people perceive a low similarity with others (e.g., Ames, Weber, & Zou, 2012). The nature of the interaction has also been found to impact social projection. For instance, Toma, Yzerbyt, and Corneille (2010) and Riketta

and Sacramento (2008) showed that people project less in situations of competition as compared to situation of cooperation. All in all, these research findings suggest that self-perceptions and others' perceptions can relate differently as a function of situations.

As explained above, the reported research findings about the relationships between (negative) meta-perceptions, self-perceptions, and others' perceptions from the victims' perspective relate to the main goal of the present thesis. Indeed, the results of past studies are useful for the investigation of the consequences of interpersonal sexual objectification experiences on a specific form of negative meta-perceptions (i.e., metadehumanization). Moreover, having in mind the relationships between (negative) meta-perceptions, self-perceptions and others' perceptions opens up new perspectives for research on dehumanization from the victims' perspective. However, as theories of (sexual) objectification and dehumanization have frequently been thought to refer to similar or same processes, we decided to highlight the differences between them in the following section, showing that they are, in fact, two different concepts.

2. The distinction between (sexual) objectification and dehumanization theories

Obviously, the literature on objectification and dehumanization is interconnected and frequently overlapping. Objectification has been defined as being treated as an object rather than as a human being. This definition reminds us of the mechanistic form of dehumanization, in which the denial of human nature traits leads to the assimilation of dehumanized targets with objects and/or machines. However, while there are some similarities between objectification and dehumanization theories, it seems important to highlight the main features that underline the differences between them. First, under the prism of general definition, one should note that objectification is frequently referred to as a treatment of one individual by another (i.e., people use / instrumentalize others to satisfy their own goals) (e.g., Gruenfeld et al., 2008; Nussbaum, 1995). In particular, according to Nussbaum's (1995) propositions, the instrumentalization of others constitutes a key role in objectification processes. For instance, Gruenfeld et al. (2008) indicate that "the process of objectification is thought to involve a kind of instrumental fragmentation in social perception, the splitting of a whole person into parts that serve specific goals and functions for the observer" (p.111). In contrast, dehumanization is theorized as impacting individuals' perceptions (i.e., people see / perceive others as less than fully human) (e.g., Haslam, 2006; Haslam & Loughnan, 2014). In line with this, objectification and dehumanization probably imply different behavioral responses in terms of approach and avoidance behavior (see, Capozza, Di Bernardo, & Falvo, 2017; Martínez, Rodríguez-Bailón, Moya, & Vaes, 2015).

Importantly, the present thesis examines a specific form of objectification, that is, sexual objectification. Sexual objectification was quickly conceptualized to affect women due to the social emphasis placed on women's physical appearance and bodies. Since the publication of objectification theory (Fredrickson & Roberts, 1997), the term sexual

objectification has referred to situations in which the physical appearance of women is put foregrounded, either in the media or in social and interpersonal interactions. Sexual objectification thus amounts to treating someone as a sexual object through a focus on their physical appearance and (sexual) body parts. In a very different way, dehumanization refers to perceptions of humanness. In particular, dehumanization occurs when people attribute fewer or no human characteristics to others (Haslam, 2006; Haslam & Loughnan, 2014). Hence, in light of such definitions, the overlap between the theories of dehumanization and sexual objectification seems much less obvious.

Using these definitions, researchers decided to examine people's perceptions of sexually objectified women under the prism of dehumanization. In other words, they have attempted to understand if people attribute fewer human characteristics to sexually objectified women. The following section presents the published studies in the field.

3. The perpetrators' perspective: from sexual objectification to dehumanization

As reported in Chapter 1, sexual objectification undermines the attribution of human characteristics (e.g., warmth, competence, morality) to sexually objectified women (e.g., Heflick & Goldenberg, 2009; Heflick et al., 2011; Holland & Haslam, 2013; Loughnan et al., 2010; Wollast et al., 2018). Through the denial of characteristics that belong to both human nature and uniquely human forms of humanness, these studies have already suggested the dehumanization of sexually objectified female targets. Indeed, various studies have confirmed that the sexual objectification of women jeopardizes humanness perceptions in the context of a dehumanization framework (e.g., Bongiorno et al., 2013; Heflick & Goldenberg, 2009; Morris et al., 2018; Rudman & Mescher, 2012; Vaes et al., 2011). These research findings have shown that sexually objectified women are dehumanized through an association either with animals (i.e., animalistic dehumanization) or objects and/or machines (i.e., mechanistic dehumanization) (Haslam, 2006; for a review, see Morris & Goldenberg, 2015). Bongiorno et al. (2013), for example, found that participants (i.e., men and women) attributed fewer uniquely human characteristics (i.e., animalistic dehumanization) to sexually objectified female targets than to non-objectified female targets. Moreover, Vaes et al. (2011) showed that sexually objectified female targets were less implicitly associated with human-related concepts (as opposed to animal-related concepts) than non-objectified female targets and non-objectified and sexually objectified male targets by both male and female participants (Study 1). Vaes and Puvia (2013) then confirmed such results and investigated why even female participants dehumanize sexually objectified women and showed that body-related variables determine animalistic dehumanization of sexually objectified women. Specifically, women's motivation to look attractive to men and their tendency to internalize the socio-cultural beauty standards increase animalistic dehumanization of sexually objectified women, through self-objectification. Moreover, the authors found that female participants' tendency to dehumanize sexually objectified women are explained by their perceptions of sexually

objectified women as promoters (vs. victims) of objectifying culture (Vaes & Puvia, 2015). Taken together, these research findings show that participants exposed to sexually objectified women animalistically dehumanized them (i.e., associated them with animals). On the other hand, Heflick and Goldenberg (2009) found that sexually objectified female targets were denied human nature characteristics, meaning they were mechanistically dehumanized. Hence, sexual objectification also increases the mechanistic dehumanization of sexually objectified female targets, whereby they are associated with objects and robot-like concepts. Recently, Morris et al. (2018) reconciled these divergent research findings and found that as a function of objectification types, women are dehumanized in either an animalistic or a mechanistic way. Specifically, a focus on sexual body parts and functions (i.e., sex-based objectification) leads to the animalistic dehumanization of women while a focus on beauty and physical appearance as a whole (i.e., beauty-based objectification) leads to mechanistic dehumanization of women.

Hence, it seems clear that from the perpetrators' perspective sexual objectification leads to the dehumanization of women. Interestingly enough, the interpersonal consequences of such dehumanizing perceptions have recently been investigated. The dehumanization of women is associated with men's sexual aggression (Bevens & Loughnan, 2019; Rudman & Mescher, 2012). In particular, Rudman and Mescher (2012) found that male participants who more strongly associated women with animal-related concepts scored higher on rape proclivity and likelihood to sexually harass women and displayed more negative attitudes towards rape victims. The second study confirmed Study 1's results, using a more direct measure of male sexual aggression. In their second study, the authors also showed that the association of women with object-related concepts was positively associated with rape proclivity among men (Rudman & Mescher, 2012; see also, Bevens & Loughnan, 2019). Bevens and Loughnan (2019) decided to investigate the links between women's sexual objectification, dehumanization, and sexual victimization. The authors found that the denial of uniquely human characteristics was more strongly associated with the tendency to sexually victimize women when male participants were exposed to sexualized women than when they were exposed to the control woman image.

These studies gave evidence that sexually objectified women are not only dehumanized but also experience the behavioral consequences of dehumanization, which are manifested in an increase in sexual violence against women. The research conducted on people's dehumanizing perceptions of sexually objectified women also underlines the lack of interest in victims' perceptions. Indeed, to date, almost no studies have investigated women's meta-perceptions following interpersonal sexual objectification experiences. The following section aims to connect previous research that investigated the relations between meta-perceptions, self-perceptions, and others' perceptions to studies that examined the consequences of (interpersonal) sexual objectification on dehumanization processes from both an observers' and a victims' perspective.

4. The victims' perspective: from sexual objectification to dehumanization

The integration of the literature reviewed in the present introduction encourages us to specifically examine the consequences of subtle forms of interpersonal sexual objectification on metadehumanization.

First, as reported above, previous research has already shown that women are denied human traits and even dehumanized when sexually objectified. In other words, humanity-related perceptions change when people are exposed to sexually objectified women as they attributed fewer human characteristics to them. In view of this evidence, one has to remember that individuals may be clear-sighted about people's view of themselves (e.g., Sigelman & Tuch, 1996; Yzerbyt et al., 2005). It is therefore possible that people's perceptions of sexually objectified women translate into women's minds as meta-perceptions when they are confronted with sexual objectification through interpersonal and social interactions. If this is the case, one should expect that women targeted by sexually objectifying behaviors (e.g., gazing or appearance comments) think that they are dehumanized (i.e., metadehumanization) by the perpetrator(s) of sexual objectification. Indeed, just as stereotypes (i.e., what people think about others) might translate into meta-stereotypes (i.e., the way people think that others see them) (e.g., Sigelman & Tuch, 1996; Vorauer et al., 1998; Yzerbyt et al., 2005), the dehumanized perceptions of perpetrators when confronted with sexually objectified women might translate into metadehumanization in the eyes of women when sexually objectified.

Second, scholars already showed that extreme forms of interpersonal sexual objectification increase metadehumanization. In particular, Moor and colleagues (2013) found that, for both men and women victims, extreme forms of sexual objectification (i.e., rape and sexual harassment) induce perceptions of being dehumanized by perpetrators (i.e., metadehumanization). This initial work linked interpersonal sexual objectification experiences to metadehumanization. However, it remains important to extend this research to subtler forms of sexual objectification, such as appearance comments, gazing, or whistling (i.e., body evaluation behaviors) (Kozee et al., 2007).

Hence, in light of such research findings, the present thesis aims to investigate the effect of subtle forms of sexual objectification on women's perceptions of being dehumanized (i.e., metadehumanization). We decided to investigate the consequences of sexual objectification experiences among a sample of female participants for two main reasons. First, body evaluation behaviors are more frequent for women than for men (e.g., Swim et al., 2001). Indeed, appearance comments, gazing, and other forms of body evaluation behavior are common experiences in most women's daily life (e.g., Fairchild & Rudman, 2008; Holland et al., 2017). Moreover, research showing that sexual objectification induces dehumanized perceptions of targets has mostly been conducted with sexually objectified women (rather than sexually objectified men) (e.g., Heflick & Goldenberg, 2009; Morris et al., 2018; Rudman & Mescher, 2012; Vaes et al., 2011). Taken together, these research

findings explain why, in the first instance, we decided to investigate the consequences of sexual objectification experiences among women.

The investigation of metadehumanization processes as a consequence of interpersonal sexual objectification offers many research avenues. Firstly, previous research has shown that metadehumanization triggers negative emotional reactions among victims (e.g., Bastian & Haslam, 2011; Demoulin et al., 2020; Zhang et al., 2017). Hence, metadehumanization may appear as a mediator in the relationship between interpersonal sexual objectification and negative emotional states. This is particularly interesting when considering research showing that emotions are strong determinants of women's reactions when sexually objectified (e.g., Shepherd, 2018; see also, Shepherd & Evans, 2019).

Secondly, just like negative meta-perceptions, metadehumanization has damaging consequences for interpersonal perceptions and ensuing interactions. In particular, feeling dehumanized by others increases reciprocal dehumanization, which then predicts aggressiveness (Kteily et al., 2016; Landry et al., 2021; see also, Andrighetto et al., 2016). This indicates that when people feel dehumanized by someone else, they tend to reciprocate such perception to their perpetrators. Here again, these findings are in line with research showing that meta-perceptions are reciprocated (e.g., Curtis & Miller, 1986). Hence, women's perceptions of their perpetrators could thus be investigated following sexual objectification. In particular, if women report metadehumanization after being confronted with sexually objectifying behaviors, they may dehumanize the perpetrator (i.e., reciprocal dehumanization) in return. Finally, women's perceptions of their perpetrator should influence the way women will react following sexual objectification (e.g., Andrighetto et al., 2016; Kteily et al., 2016; Landry et al., 2021).

Another kind of perceptions could be investigated in interpersonal sexual objectification contexts, namely self-perceptions. To date, women's self-perceptions following interpersonal sexual objectification have mostly been investigated in light of body- and appearance-related self-perceptions (e.g., Calogero et al., 2009; Garcia et al., 2016; Herbozo & Thompson, 2006; Fairchild & Rudman, 2008; Thompson & Psaltis, 1988). However, when considering interpersonal sexual objectification experiences, women's self-perceptions might be impacted in other ways. Recently, Loughnan et al. (2017) revealed that sexual objectification experiences triggered self-dehumanization among their female sample. The authors asked their participants to report experiences in which someone had focused only on their body and physical appearance rather than their personality and found that participants who recalled sexually objectifying experiences attributed fewer human characteristics to the self than participants who reported non-objectifying experiences. Nevertheless, as suggested by social projection literature presented in this Chapter, self-perceptions may also be considered through its link with others' perceptions. In particular, being targeted by interpersonal sexual objectification is likely to affect the relationships between self-dehumanization and women's dehumanizing perceptions of their interlocutor.

5. Overview of the present dissertation

In the introduction chapters, we have highlighted the lack of empirical research on sexual objectification when it occurs in interpersonal contexts. In spite of this, being the target of sexual objectification in interpersonal and social interactions increases self-objectification (e.g., Fairchild & Rudman, 2008; Garcia et al., 2016) and undermines women's body perceptions (e.g., Calogero, 2004; Moya-Garófano et al., 2018) and cognitive performance (e.g., Gay & Castano, 2010; Gervais et al., 2011; Kahalon et al., 2018), as is also the case when women are witness of sexual objectification through, for instance, media encounters. However, in interpersonal and social contexts, women's perceptions and, in particular, women's meta-perceptions following interpersonal sexual objectification are outcomes that have rarely been investigated (for an exception, see Moor et al., 2013). The present dissertation attempts to fill this gap by taking into account women's (meta-)perceptions following sexual objectification in interpersonal encounters. As explained in the previous section, many factors encourage us to consider dehumanization processes as a relevant theoretical framework to achieve this goal.

In line with the literature that highlights the consequences of negative meta-perceptions and metadehumanization, we decided to investigate the consequences of sexual objectification experiences on women's emotional and behavioral reactions, as well as the way they perceive their interlocutor. The Chapter 4 examines the link between interpersonal sexual objectification experiences and metadehumanization, along with its emotional consequences. Then, we investigated the behavioral consequences (i.e., interaction motivation and pro-social behaviors) of sexual objectification when it occurs in interpersonal contexts and examined the key role of women's perceptions (i.e., metadehumanization and dehumanization of the perpetrator) (See Chapter 5). Chapter 6 brings new knowledge with regard to the attribution of human characteristics to the self and to one's interlocutor following interpersonal sexual objectification (vs. positive or at least neutral interaction). Finally, and due to a new distinction between two forms of objectification (i.e., sex- and beauty-based objectification), we investigated whether these two forms of objectification were associated with the two (distinct) forms of dehumanization when considering women's metadehumanization (i.e., animalistic and mechanistic metadehumanization) (See Chapter 7).

Chapter 4

My physical appearance at the center of others' concerns:

What are the consequences for women's metadehumanization and emotions?

Despite the frequency of women's exposure to sexually objectifying behaviors in their daily life (e.g., through comments on their appearance, gazing or touching), no previous work has investigated how such a focus on their physical appearance influences women's meta-perceptions. Capitalizing on recent studies showing that sexually objectified women are dehumanized by both male and female participants, the present paper investigates women's metadehumanization (i.e., their perceptions of being viewed as less than fully human) and its emotional consequences following interpersonal sexual objectification. In three studies, we showed that when an interaction partner focuses on their physical appearance, women report higher levels of metadehumanization, as well as increased anger and sadness, than when the partner focuses on non-physical parts. Theoretical and empirical contributions of the present findings are discussed.

Référence

Chevallereau, T., Stinglhamber, F., Maurage, P., & Demoulin, S. (2021). My physical appearance at the center of others' concerns: What are the consequences for women's metadehumanization and emotions? *Psychologica Belgica*, 61(1), 116–130. doi:10.5334/pb.558

My physical appearance at the center of others' concerns:

What are the consequences for women's metadehumanization and emotions?

1. Introduction

The importance of physical appearance in Western societies has led scholars to investigate its antecedents and consequences. In this context, the focus on physical appearance has mainly been referred as (sexual) objectification (Fredrickson & Roberts, 1997), although objectification can take multiple forms. Indeed, researchers propose that objectification occurs when an individual is perceived from the view point of their utility to achieve people's needs and goals (Gruenfeld, Inesi, Magee, & Galinsky, 2008; Nussbaum, 1995). Given such definition, the consequences of objectification have mainly been studied in workplace, slavery, or sexual contexts. For instance, workplace objectification occurs when workers are used as means to production while sexual objectification appears when lovers respectively emphasize on and benefit from each other's bodies. The latter case would particularly affect women, placing their physical appearance at the center of others' concerns (Fredrickson & Roberts, 1997). Fredrickson and Roberts (1997) proposed that sexual objectification occurs in both mainstream media and interpersonal interactions, through a focus on women's physical appearance. Although underdeveloped, studies that investigated interpersonal sexual objectification have shown, that such focus on physical appearance lead women to experience body dissatisfaction or body shame (e.g., Calogero, 2004; Moya-Garófano, Rodríguez-Bailón, Moya, & Megías, 2018), self-objectification (e.g., Fairchild & Rudman, 2008; Garcia, Earnshaw, & Quinn, 2016; Holland, Koval, Stratemeyer, Thomson, & Haslam, 2017), and reduced cognitive performance (e.g., Garcia et al., 2016; Gay & Castano, 2010; Gervais, Vescio, & Allen, 2011; Kahalon, Shnabel, & Becker, 2018). However, little is known regarding the impact of such a focus on women's meta-perceptions and emotions.

The present paper fills this gap by investigating the effect of a focus on physical appearance in interpersonal encounters on metadehumanization (i.e., the perceptions of being viewed as less than fully human, Kteily, Hodson, & Bruneau, 2016) and finally negative emotions. Despite the results of studies showing that sexually objectified female targets are denied human characteristics (Heflick & Goldenberg, 2009; Morris, Goldenberg, & Boyd, 2018; Vaes, Paladino, & Puvia, 2011), no previous research investigated the victims' perspective following sexual objectification experiences. Hence, we hypothesized that when women face a partner focusing on their physical appearance, they experience being dehumanized and thus report higher metadehumanization levels.

In addition, based on Bastian and Haslam's (2011) and Zhang, Chan, Xia, Tian, and Zhu's (2017) studies which showed that metadehumanization increase negative emotions among victims and particularly feelings of anger, sadness and guilt, we hypothesized that a focus on physical appearance will induce negative emotional responses via metadehumanization. Consequently, the mediating role of metadehumanization in the relationship between interpersonal sexual objectification and negative emotions will be investigated.

1.1 Sexual Objectification as a Focus on Physical Appearance

Physical appearance is a key determinant of social, economic, and work-related outcomes (e.g., Cash, Gillen, & Burns, 1977; Dion, Berscheid, & Walster, 1972) and its effects on one's life are more pronounced for women (Feingold, 1990, 1991; Hernández-Julián & Peters, 2017; Jackson, Sullivan, & Hymes, 1987; Sprecher, 1989). In 1997, Fredrickson and Roberts developed Objectification Theory, which aimed at examining the antecedents and consequences of being treated as a sexual object in a society that values women's physical appearance. These authors define sexual objectification as "the experience of being treated as a body (or collection of body parts) valued predominantly for its use to (or consumption by) others" (Fredrickson & Roberts, 1997, p.174). Such a focus on physical appearance is spread both through media (i.e., in which women are presented as sexual objects, dressed provocatively or in suggestive positions) and social interactions (i.e., in which women are gazed at, visually inspected or in which they receive comments on their physical appearance).

Following Fredrickson and Roberts' seminal work, many scholars have started to investigate the consequences of sexual objectification for women. While many studies concentrated on the effects of the exposure to sexually objectifying media, fewer research examined sexual objectification in interpersonal encounters (Gervais, Sáez, Riemer, & Klein, 2020). In 2007, Kozee, Tylka, Augustus-Horvath and Denchik developed The Interpersonal Sexual Objectification Scale (ISOS). This scale makes the distinction between body evaluation behaviors (e.g., gazing, catcalls, sexual remarks and comments) and unwanted sexual advances (e.g., unwanted touching, sexual harassment). Research has shown that women frequently experience both forms of sexually objectifying behaviors (Fairchild & Rudman, 2008; Holland et al., 2017; MacMillan, Nierobisz, & Welsh, 2000; Swim, Hyers, Cohen, & Ferguson, 2001). For instance, women report being confronted with sexual objectifying comments one or two times a week (Swim et al., 2001). Holland et al. (2017) investigated a broader range of body evaluation behaviors (i.e., gazing, sexual remarks, catcalls/wolf whistles) and found that women report being the target of objectificatifying behaviors once every two days. Studies on sexual harassment (Fairchild, 2010) and unwanted touching (Hayden, Graham, & Lamaro, 2016) also put forward that women are frequently exposed to such behaviors (see also, Gelfand, Fitzgerald, & Drasgow, 1995).

Research on the consequences of interpersonal sexual objectification has manipulated the focus on physical appearance in a variety of ways (e.g., appearance-related comments or questions, anticipated or experienced male gaze; Calogero, 2004; Calogero, Herbozo, & Thompson, 2009; Gervais et al., 2011; Lameiras-Fernández, Fiske, González Fernández, & Lopez, 2018; Moya-Garófano et al., 2018). Several research findings showed that the effects of focus on physical appearance depend on women's (emotional) reactions (Moya-Garófano et al., 2018) and the importance they allocate to their physical appearance, that is, Trait Self-Objectification levels (i.e., TSO, here after) (e.g., Calogero et al., 2009; Gay & Castano, 2010; Kahalon et al., 2018).

Indeed, while Herbozo and Thompson (2006) highlighted the positive effects of appearance-based compliments on body satisfaction, self-esteem, and eating disorders, other studies qualified this result. For instance, Tiggemann and Boundy (2008) showed that compliments on appearance increase body shame for women with high TSO. Calogero et al. (2009) found similar results, showing that women with high TSO report higher levels of body surveillance and body dissatisfaction, independently of the feeling (positive vs. negative) caused by appearance-related comments (Calogero et al., 2009). Considering the effects of women's (emotional) reactions, Moya-Garófano and collaborators (2018) found that women who react with happiness, empowerment, and low levels of anger to appearance-related comments also report higher body shame and body surveillance. Fairchild and Rudman (2008) also showed the importance of women's reactions following sexually objectifying behaviors from strangers (i.e., exposition to appearance-focus behaviors such as catcalls, whistles or stares). Particularly, stranger harassment increases self-objectification among women who use passive coping strategies (i.e., ignoring or denying the harassment) or self-blame. Finally, recent research findings highlighted the key role of psychological intimacy with the perpetrators of sexually objectifying comments, showing that positive comments from romantic partners are perceived as less objectifying and more enjoyable than those from colleagues, strangers, and friends (Lameiras-Fernández et al., 2018). All in all, these research findings highlighted the negative consequences of interpersonal sexual objectification on body-related variables (see also, Calogero, 2004).

Researchers also considered the negative effect of sexually objectifying behaviors on cognitive performance. Recently, Kahalon et al. (2018) observed a vicious effect of appearance compliments on mood and cognitive performance. Indeed, if compliments on appearance increase mood among participants with high TSO (Study 1; see also, Fea & Brannon, 2006), such comments decrease participants' cognitive performance. The negative effect of appearance focus on cognitive performance has also been put forward through exposition to male gaze, which tend to decrease cognitive performance for women with high TSO (Gay & Castano, 2010).

For instance, Woodzicka and LaFrance (2005) showed that when women are asked sexual questions during a job interview, they have a reduced performance (i.e., spoke less fluently, gave lower quality answers) compared to women who are asked surprising but non-sexualized questions (see also, Wiener, Gervais, Allen, & Marquez, 2013). These

results are consistent with Saguy, Quinn, Dovidio, and Pratto's (2010) findings, showing that women narrow their presence in social interaction (i.e., spend less time talking) when anticipating a male gaze.

Interestingly, research examining the effects of interpersonal encounters focused on physical appearance on women's reactions to their interaction partner is inconclusive. On the one hand, Gervais et al.'s (2011) studies indicated that, when confronted with an objectifying gaze, women are still motivated to interact with their objectifying partner. On the other hand, Teng, Chen, Poon, and Zhang (2015) found that receiving sexually objectifying remarks from an interaction partner decrease the perceived likability of the partner, leading to a reduced desire of affiliation with him.

Albeit few in numbers, these research findings suggest that being the target of a focus on one's physical appearance in social interactions has a strong and negative influence on body image and cognitive-related variables. Those negative effects of interpersonal sexual objectification on these variables appear in spite of its somewhat unexpected positive effect on mood. Indeed, some studies showed that receiving a compliment on appearance leads the participant to report less negative mood (Tiggemann & Boundy, 2008), particularly for women with high TSO (Fea & Brannon, 2006). Unfortunately, much less is known about its consequences on women's meta-perceptions. In the following section, we suggest that these meta-perceptions are likely to take the form of a metadehumanization.

1.2 Metadehumanization and Focus on Physical Appearance

Dehumanization refers to the perception of a group or an individual as less human than oneself. According to the dual model of dehumanization (Haslam, 2006) people may be dehumanized in two different ways; The denial of human uniqueness characteristics (e.g., civility, refinement, maturity, rationality) leads to *animalistic dehumanization* whereas the denial of human nature characteristics (e.g., emotional responsiveness, interpersonal warmth, agency, cognitive openness) leads to *mechanistic dehumanization*. Although the dual model of dehumanization (Haslam, 2006) is frequently used by researchers, the two facets have rarely been found through exploratory and confirmatory factorial analyses (Bastian & Haslam, 2010; Loughnan, Baldissarri, Spaccatini, & Elder, 2017) or studied at the same time (Zhang et al., 2017). Moreover, when researchers used the two dimensions in their design and conducted factorial analyses, the two dimensions did not systematically emerge (Bastian et al., 2013; Bastian, Jetten, & Radke, 2012; Demoulin et al., 2020; Tang & Harris, 2015).

After decades of empirical works on the perpetrators of dehumanization (for reviews, see Haslam & Loughnan, 2014; Haslam & Stratemeyer, 2016), scholars have now started to focus on dehumanization's victims (Demoulin, Maurage, & Stinglhamber, 2021; see also Fontesse, Demoulin, Stinglhamber, & Maurage, 2019). In particular, Kteily et al. (2016) suggested to consider metadehumanization (i.e., the experience of being perceived as less than a human by others). Research on the determinants of metadehumanization has shown that people feel dehumanized when they face interpersonal maltreatments such as social

ostracism, exploitation or humiliation (Bastian & Haslam, 2011), abusive supervision (Caesens, Nguyen, & Stinglhamber, 2019), or rape and sexual harassment (Moor, Ben-Meir, Golan-Shapira, & Farchi, 2013). Other scholars have further suggested that interpersonal maltreatments lead to metadehumanization because targets' fundamental human needs are being put at stake (Demoulin et al., 2020; see also Fontesse et al., 2019). Bastian and Haslam (2010) manipulated social ostracism either through autobiographical recalls, asking participants to report situations in which they were socially excluded (Study 1) or through the Cyberball game, in which participants were excluded to an online ball-toss game (Study 2). The authors found that social ostracism (vs. inclusion or control) negatively impact participants' fundamental human needs. Similarly, Yang, Jin, He, Fan, and Zhu (2015) found that powerless people, whose needs for control and autonomy are thwarted, experience dehumanization from powerful people. More generally, in clinical contexts, patients feel dehumanized when caregivers consider their needs as secondary or unimportant (Raja et al., 2015).

Metadehumanization is particularly likely to arise when women face sexually objectifying instances for two reasons. First, and most obviously, sexual objectification occurs when people are considered only through their physical appearance. In such circumstances, fundamental human needs are probably unsatisfied or even thwarted. Moreover, sexual objectification practices can be considered as instances of interpersonal maltreatments as it is the most frequent form of gender discrimination for women (Swim et al., 2001). Miles-McLean and colleagues (2015) showed that the more women are confronted with unwanted sexual advances the more they report trauma symptoms (e.g., nightmares, sexual problems).

Moreover, research has shown that people (from both genders) attribute fewer human characteristics to sexually objectified female targets compared to non-objectified ones (Bongiorno, Bain, & Haslam, 2013). In the same vein, Vaes et al. (2011) showed that sexually objectified female targets are less implicitly associated with human-related concepts compared to both non-objectified female targets and (non-)objectified male targets. Heflick and Goldenberg (2009) found that sexually objectified female targets are denied human nature characteristics, which indicates mechanistic dehumanization.

In line with the above reported literature, we hypothesize that, when experiencing a focus on their physical appearance during interpersonal encounters, women would report feeling dehumanized by their interaction partner, i.e., metadehumanization. Such metadehumanization would come with consequences because it could, among other effects, influence the emotional experiences of these women.

1.3 Emotional Consequences of Metadehumanization

Metadehumanization has a wide range of negative consequences, including aggression tendencies (Kteily et al., 2016), victims' well-being impairment (Caesens, Stinglhamber, Demoulin, & De Wilde, 2017), reduced self-esteem (Demoulin et al., 2020; Fontesse et al., 2019), increased behavioral inhibition (Moor et al., 2013) and reduced use of functional

coping strategies (Demoulin et al., 2020). These results are consistent with the more general findings that negative meta-perceptions impair relationships (Owuamalam, Issmer, Zagefka, Klaßen, & Wagner, 2014; Vorauer, Main, & O'Connell, 1998). For instance, people tend to reciprocate the negative meta-perceptions with negative evaluation, endorsement of hostile behaviors and anger (Kamans, Gordijn, Oldenhuis, & Otten, 2009; Owuamalam, Tarrant, Farrow, & Zagefka, 2013).

More importantly for the present research, metadehumanization affects women's emotional reactions. For instance, Bastian and Haslam (2011) showed that animalistic and mechanistic forms of metadehumanization predict specific emotional consequences. While animalistic metadehumanization leads people to report shame and guilt, mechanistic metadehumanization triggers sadness and anger. When attempting to replicate these results, Zhang et al. (2017) found that mechanistic metadehumanization indeed increases sadness but not anger, whereas animalistic metadehumanization indeed increases shame but also sadness. More importantly, the effects of metadehumanization held while controlling for more general negative evaluations.

In the present research, we hypothesize an increase in metadehumanization as a result of the attention paid to their physical appearance in women's interpersonal interactions, which leads to negative emotions, such as anger, sadness and guilt. Given the divergent findings reported in previous studies, no specific hypotheses are proposed regarding the differential modifications related to specific negative emotions.

1.4 Overview of the Studies

In three studies, we explored the relationships between the experience of being confronted with sexually objectifying behaviors (i.e., focus on physical appearance), metadehumanization, and emotions. Study 1 tested the hypothesis that when women face an interaction partner focusing on their body, they report higher metadehumanization levels compared to a control condition. Although most studies highlighted the negative effects of interpersonal sexual objectification, other research found that appearance-related comments may elicit positive emotional outcomes (Fea & Brannon, 2006; Herbozo & Thompson, 2006) or even enjoyment (Liss, Erchull, & Ramsey, 2011; Sáez, Valor-Segura, & Expósito, 2019). Hence, in Study 1, we measured women's appreciation of the situation they face to account for such potential valence effects¹. Studies 2a and 2b also investigated the link between the focus on physical appearance and metadehumanization, together with the emotional consequences of metadehumanization. Based on Bastian and Haslam (2011) and Zhang et al.'s (2017) studies, we hypothesized that metadehumanization would trigger negative emotional reactions among victims. Finally, we examined the indirect effect of a

¹ In Study 1, we also assessed self-dehumanization and expected to replicate the results highlighted by Loughnan et al. (2017), in which sexually objectified women self-attribute fewer human characteristics. Unfortunately, we did not manage to replicate these effects. The results obtain on self-dehumanization are presented in the online supplement section.

focus on one's physical appearance on negative emotions via metadehumanization. Data of all three studies are available on OSF at https://osf.io/mkbrc/?view_only=ab7c2a0fc1e44473ba10f6580804d5df and the English version of the survey flow is available on OSF through the following link https://osf.io/evzu9/?view_only=9682664eec8a44b18ab2307d5a875cc1².

2. Study 1

2.1 Method

Participants

We recruited 142 female participants through the French-speaking crowdsourcing platform Foule Factory. Data from two participants were discarded because they failed attentional check questions (i.e., “It is important that you pay attention to our survey. Please tick “Strongly disagree” for this statement”). The final sample was composed of 140 participants. Their age ranged from 19 to 68 years ($M = 40.04$ years, $SD = 12.00$). Each participant was randomly assigned to one of the two experimental conditions (70 participants per condition). Ninety-five percent of participants were French-native speakers.

Procedure and Materials

Manipulation of physical appearance focus. Participants took part in a study named “Impression formation processes in virtual meetings”. Participants were told that they would be confronted to a new dating site working in such a way that users have to select questions they would like to ask their suitors for the future discussion. Although participants had access to all potential questions that the future partner could ask, questions presumably selected by the male interaction partner differed as function of condition assignment. In the focus on physical appearance condition, Antoine, a user of the dating site, ticked four questions related to physical appearance (e.g., “Do you usually use make up to be feminine?”) and three to other domains (e.g., family and friends, professional sphere, hobbies, “Do you have good relationships with your parents?”). In contrast, in the control condition, Antoine ticked only one question related to physical appearance and six in other domains. These questions are presented to participants as the ones Antoine would like to ask them if they agree to discuss with him. Before being exposed to the manipulation, participants also read an introduction written by Antoine. As function of condition assignment, participants read: “Hello, my name is Antoine. Generally, I attach importance to the personality of the person I am in relationship with, but also to her

² We provide Study 2's survey flow rather than Study 1's survey flow. Study 2 used exactly the same manipulation and measurements of Study 1, except for emotions that are not measured in Study 1. This survey flow has the advantage to provide all measurements used across the present studies.

Do you feel perceived as a full human being when you are treated as a body?

physical appearance (vs. interests and hobbies): if a woman does not appeal to me (vs. share similarities with me), I am afraid it would not work between us”.

Manipulation check. After the manipulation, participants had to indicate their level of agreement on a 7-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree” to four items (e.g., “I think that Antoine was mainly interested in my physical appearance”). These items served as a manipulation check.

Questions’ appreciation. Participants had to indicate their appreciation of Antoine’s questions through two items (e.g., “The questions Antoine asked me were relevant” or “I appreciated the questions Antoine asked me”) using a 7-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree”.

Metadehumanization. We used a slightly adapted version of Demoulin et al.’s (2020) scale to assess participants’ levels of animalistic and mechanistic metadehumanization. Eight items evaluated animalistic metadehumanization (e.g., “Antoine thinks that women are under-evolved”) and eight items measured mechanistic metadehumanization (e.g., “Antoine thinks that women are superficial, is not concerned about who they are inside”). For each item, participants indicated their level of agreement using a 7-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree”.

2.2 Results

2.2.1 Preliminary Analyses

A principal component analysis was conducted on the metadehumanization scale to check if the two dimensions of dehumanization emerged. The results revealed a one-factor structure explaining a total of 72.98% of variance, with factor loadings ranging from .758 to .913 on the single factor. Analyses also revealed a good internal consistency, $\alpha = .97$. Hence, we merged all metadehumanization items (i.e. animalistic and mechanistic ones) to create a single metadehumanization index.

2.2.2 Main Analyses

Manipulation check. We conducted a one-way ANOVA on the focus on physical appearance manipulation check. Results indicated that our manipulation was successful, as participants reported higher levels of focus on their physical appearance in this condition ($M = 5.36$, $SD = 1.31$) than in the control one ($M = 2.55$, $SD = 1.11$), $F(1,139) = 185.24$, $p < .001$, $\eta_p^2 = .57$.

Questions' appreciation. Participants reported that Antoine's questions were more relevant and appreciable in the control ($M = 4.82$, $SD = 1.59$) than in the focus on physical appearance condition ($M = 3.30$, $SD = 1.49$), $F(1,139) = 33.59$, $p < .001$, $\eta^2_p = .19^3$.

Metadehumanization. As expected, a one-way ANOVA revealed a main effect of condition, $F(1,139) = 46.04$, $p < .001$, $\eta^2_p = .25$, indicating higher metadehumanization in the focus on physical appearance condition ($M = 3.25$, $SD = 1.39$) than in the control one ($M = 1.85$, $SD = 1.03$). Importantly, the effect of the focus on physical appearance on metadehumanization remained significant after controlling for questions' appreciation, $F(1,139) = 16.70$, $p < .001$, $\eta^2_p = .10$. After data collection, we ran sensitivity analyses using G*Power in order to know if our sample size was large enough to detect a small to medium effect size f . The results showed that with a power set at .80, an alpha of .05 and 140 participants for two conditions, we had a probability of 80% to detect a minimal effect size f of .23.

2.3 Discussion

The purpose of Study 1 was to investigate the metadehumanization consequence of the focus on physical appearance during social interactions. As expected, our study shows that when women face an interpersonal encounter in which a male partner focuses on their physical appearance, they feel dehumanized. In other words, being questioned on their physical appearance leads women to think that the questioner denies their human characteristics and treats them as less than full human beings. Importantly, this effect persists over and above the general negative evaluation of the experience.

Exploratory factor analyses revealed that animalistic and mechanistic metadehumanization items loaded on a single-factor solution and that the two dimensions were strongly correlated ($r = .89^{**}$). Hence, to analyze the effects of focus on physical appearance on metadehumanization levels, we chose to create a single metadehumanization index. The latter result was expected given that past studies frequently collapsed the two dimensions into a single one due to one-factor solutions and strong correlations between them (Bastian et al., 2012; Bastian et al., 2013; Tang & Harris, 2015).

The encouraging results of Study 1 needed replication. Studies 2a and 2b thus used a similar design, but also explored the consequences of metadehumanization, and centrally victims' emotional reactions to the dehumanizing situation. Based on Bastian and Haslam (2011) and Zhang et al. (2017), we hypothesized that a focus on one's physical appearance

³ For Study 1, we also assessed "interaction motivation" to meet and discuss with Antoine. For this purpose, we used two items (e.g., "I would be in favor of a meeting with this person if I was in an online dating process", "I would agree to chat with Antoine if I was in an online dating process") and participants had to indicate their levels of agreement with each statement on a 7-point Likert scale. One-way ANOVA indicated that participants in the focus on physical appearance condition reported lower motivation levels to interact with and meet Antoine ($M = 3.30$; $SD = 1.64$) compared to participant in the control one ($M = 4.83$; $SD = 1.68$), $F(1,139) = 29.42$, $p < .001$, $\eta^2_p = .17$.

Do you feel perceived as a full human being when you are treated as a body?

would increase women's negative emotions (anger, sadness, and guilt) via the metadehumanization it elicits⁴.

3. Studies 2a-b

3.1 Method

Participants

Power analyses determined sample sizes. Based on the effect size found in the first study when considering the effect of interpersonal focus on physical appearance on metadehumanization ($\eta^2_p = .25$), G*Power recommended to recruit 128 participants to provide 80% of statistical power. Hence, for Study 2a, 130 female participants were recruited through the crowdsourcing platform Prolific Academic (82% of which are Native English speakers). Data from 10 participants were discarded because they failed to answer to attentional check questions. The final sample was composed of 120 participants, with a mean age of 36.20 years ($SD = 12.88$). Each participant was randomly assigned to either the control ($n = 58$) or the focus on physical appearance ($n = 62$) condition.

For Study 2b, we also considered recruiting 130 female participants. However, due to limited recruiting opportunities, only 111 participants were recruited through our university's pool of student participants. Ninety-five percent of the participants were Native French speakers. Data from five participants were discarded because they failed to correctly answer to attentional check questions. The final sample was composed of 106 participants. Their mean age was 20.46 ($SD = 1.44$). Here again, participants were randomly assigned to one of two conditions: 54 participants were in the focus on physical appearance condition and 52 participants in the control one.

Procedure and Materials

Manipulation of the focus on physical appearance. The manipulation was identical to Study 1.

Dependent variables: metadehumanization and emotions. As in Study 1, we used the same 16 items to assess metadehumanization (Demoulin et al., 2020). Then, feelings of anger, sadness and guilt were measured with The Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1999). Participants were invited to indicate how much they felt angry (six items: angry, hostile, irritable, scornful, disgusted, loathing),

⁴ In addition, in Studies 2a and 2b, we also thought to explore identity management strategies (Tajfel & Turner, 1979). We expected that interpersonal focus on physical appearance, as a form of gender discrimination, and anger would increase women's tendencies to engage in collective actions (Chaudoir & Quinn, 2010; Iyer & Ryan, 2009; Leonard, Moons, Mackie, & Smith, 2011; Shepherd & Evans, 2019). As we did not obtain any results on these variables, detailed method and results related to them were moved to the Supplementary Material section.

sad (four items: sad, blue, downhearted, lonely) and guilty (six items: guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self) during the reading of the selected questions. Participants had to indicate to what extent they felt each emotion on a 5-point Likert scale ranging from 1 “Not at all” to 5 “Extremely”.

3.2 Results

3.2.1 Preliminary Analyses

A principal component analysis on the metadehumanization scale confirmed the factor structure found in Study 1 for both Studies 2a-b. All items loaded on one single factor, explaining 65.74% of variance for Study 2a and 59.08% of variance for Study 2b. All factor loadings ranged from .699 to .873 (Study 2a) and from .612 to .835 (Study 2b) on the unique factor solution and further analyses revealed a good internal consistency ($\alpha = .96$, $\alpha = .95$, for Study 2a and 2b, respectively). As a consequence, and similarly to Study 1, the metadehumanization scale was considered as a unidimensional construct and items of animalistic and mechanistic metadehumanization were collapsed to create a unique index of metadehumanization.

Analyses also revealed a good internal consistency for all three emotions, anger ($\alpha = .93$, Study 2a; $\alpha = .91$, Study 2b), sadness ($\alpha = .81$, Study 2a; $\alpha = .72$, Study 2b) and guilt ($\alpha = .90$, Study 2a; $\alpha = .80$, Study 2b).

3.2.2 Main Analyses

Manipulation check. A one-way ANOVA confirmed the efficiency of our manipulation: participants reported higher levels of focus on physical appearance in this condition ($M = 5.76$, $SD = 1.06$, $M = 5.52$, $SD = 1.04$, in Studies 2a and 2b, respectively) than in the control one ($M = 3.34$, $SD = 1.33$, $M = 2.49$, $SD = .91$, in Studies 2a and 2b, respectively), Study 2a: $F(1,119) = 120.99$, $p < .001$, $\eta^2_p = .50$, Study 2b: $F(1,105) = 251.75$, $p < .001$, $\eta^2_p = .70$.

Metadehumanization. A one-way ANOVA was conducted on metadehumanization. Analyses revealed a main effect of focus on physical appearance on metadehumanization, $F(1,119) = 17.54$, $p < .001$, $\eta^2_p = .12$ (Study 2a), $F(1,105) = 27.95$, $p < .001$, $\eta^2_p = .21$ (Study 2b). As in Study 1, participants reported higher levels of metadehumanization in the focus on physical appearance condition ($M = 3.90$, $SD = 1.25$; $M = 3.02$; $SD = 1.12$) than in the control condition ($M = 2.93$, $SD = 1.25$; $M = 1.98$; $SD = .86$).

Emotions. One-way ANOVAs tested the effect of interpersonal focus on physical appearance on negative emotions (anger, sadness, guilt). Participants reported higher levels of anger when they were confronted with a focus on physical appearance ($M = 2.21$, $SD = 1.21$, $M = 3.13$, $SD = 1.52$, in Studies 2a and 2b, respectively) than in the control condition ($M = 1.54$, $SD = .70$, $M = 1.31$, $SD = .43$, in Studies 2a and 2b, respectively), $F(1,119) = 13.34$, $p < .001$, $\eta^2_p = .10$ (Study 2a), $F(1,105) = 69.15$, $p < .001$, $\eta^2_p = .39$ (Study 2b). Moreover, sadness was also higher in the focus on physical appearance condition ($M =$

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1.79, $SD = .92$, $M = 2.25$; $SD = 1.21$, in Studies 2a and 2b, respectively) than in the control condition ($M = 1.50$, $SD = .73$, $M = 1.51$; $SD = .76$, in Studies 2a and 2b, respectively), $F(1,119) = 3.61$, $p = .06$, $\eta^2_p = .03$ (Study 2a), $F(1,105) = 14.05$, $p < .001$, $\eta^2_p = .11$ (Study 2b). However, we found diverging results between Studies 2a and 2b on guilt feelings. Particularly, for Study 2a, we did not find any difference on guilt between the two conditions, $F(1,119) = .88$, $p = .34$. In contrast, in Study 2b, participants reported higher levels of guilt in the focus on physical appearance condition ($M = 1.30$, $SD = .62$) than in the control ($M = 1.10$, $SD = .24$), $F(1,105) = 4.66$, $p = .03$, $\eta^2_p = .04$.

Mediation analyses. Using bootstrap analyses, we tested the mediating role of metadehumanization in the relationship between interpersonal focus on physical appearance and anger/sadness (Hayes, 2013; macro PROCESS, model 4; resample = 5,000 iterations). In Study 2a, the effects of focus on physical appearance on feelings of anger and sadness were both fully mediated by metadehumanization, indirect effect = .43, 95% CI = [.21; .68], indirect effect = .28, 95% CI = [.13; .46], respectively. In Study 2b, metadehumanization partly mediates the effects of focus on physical appearance on anger and sadness, indirect effect = .41, 95% CI = [.13; .77], indirect effect = .21, 95% CI = [.02; .44], respectively. Finally, for Study 2b, we tested the mediating role of metadehumanization when considering the effect of focus on physical appearance on guilt. The indirect effect did not reach significance, indirect effect = .05, 95% CI = [-.03; .16], indicating that the effect of focus on physical appearance on guilt was not explained by metadehumanization.

3.3 Discussion

Studies 2a and 2b first aimed at replicating the effect of interpersonal appearance-focused behaviors on metadehumanization. Consistent with results of Study 1, women report being considered as less than fully human when confronted with a man asking questions related to their physical appearance at the expense of other domains.

Studies 2a and 2b also investigated the negative emotional consequences of interpersonal objectification experiences, and the mediating role of metadehumanization in these relationships. Both studies highlighted the mediating role of metadehumanization in the relation between a focus on physical appearance and anger and sadness. Nevertheless, while metadehumanization totally mediate the effect of objectification on emotions in Study 2a, it only partially does so in Study 2b, where we also found that interpersonal objectification increase guilt feelings independently of metadehumanization. As a whole though, the main results robustly replicate across samples differing in age, mother-language and nationality.

4. General Discussion

The goal of the present research was twofold. First, we investigated metadehumanization as a consequence for women facing a focus on their physical

appearance. Second, we explored the mediating role of metadehumanization in the relationship between interpersonal focus on physical appearance and negative emotions. Our three studies corroborated our hypotheses showing that when women are confronted with a focus on their physical appearance, they report feeling dehumanized by their interlocutor. Further, our studies provided support for the mediating role of metadehumanization in the occurrence of anger and sadness feelings following experiences focusing on physical appearance. As a whole, the present studies put forward the key role metadehumanization plays between focus on physical appearance experiences and the rise of some negative emotions.

It should be noted that results on guilt were inconsistent across studies, as higher guilt level in the focus on physical appearance condition was only observed in Study 2b (and not in Study 2a). Moreover, the increase of guilt feelings in Study 2b occurred independently of metadehumanization. Past research frequently highlighted the occurrence of self-conscious emotions such as self-blame, shame and guilt following sexual objectification experiences. Particularly, extreme violent forms of sexual objectification (e.g., sexual harassment, sexual assault) increase such self-conscious emotions (Vidal & Petrak, 2007; Weiss, 2010). However, this is the first time that guilt feelings were reported following a subtle, everyday form of sexual objectification that are appearance-related questions for women. The difference observed between Studies 2a and 2b on guilt feelings cannot be addressed on the basis of the data collected here. Nevertheless, the age difference between Studies 2a ($M = 36.20$) and 2b ($M = 20.46$) is not negligible and may be informative. For instance, the familiarity with online dating is probably more common among young people and could thus impact the emotional reactions of participants. Future studies are needed to answer these questions.

Our results bring new insights for both interpersonal sexual objectification and metadehumanization. Firstly, aside from the well-known consequences that sexually objectifying practices have on women (Fredrickson & Roberts, 1997; Moradi & Huang, 2008; Roberts, Calogero, & Gervais, 2018), our studies explored for the first time its effect on metadehumanization from the women's perspective. Meta-perceptions in general, and metadehumanization in particular, have rarely been considered in interpersonal sexual objectification contexts, which is problematic for two reasons. First, metadehumanization has important consequences for the way interactions evolve (Andrighetto, Riva, Gabbiadini, & Volpato, 2016; Kteily et al., 2016). Second, by confining women to the status of victims passively and unconsciously incorporating their role as sexual objects in their self-concept, research has somewhat failed to consider the full spectrum of sexual objectification's consequences. Scholars have advocated for a better consideration of women's perspective in sexual objectification. Research has, for instance, recently suggested that (some) women might be very well aware that they could use their sexuality as a way to gain power over men (Erchull & Liss, 2013), benefit from a positive sexual esteem (Liss et al., 2011), and a better sexual satisfaction (De Wilde, Casini, Wollast, & Demoulin, 2019). Future studies should thus consider women's meta-perceptions in sexual objectification settings because they might affect the way women will react to

objectification instance. Indeed, women's meta-perceptions following sexual objectification experiences might mediate their attitudes and reactions towards sexual objectification and its associated consequences.

Secondly, the present studies provided support for the idea that interpersonal sexual objectification increases anger and sadness via women's perception that their interlocutor denies them full humanness (i.e., metadehumanization). This result is important as emotions elicit specific behavioral tendencies (Shepherd, 2018). In particular, anger triggers active action tendencies: When considered at the group-based level, anger produces, for instance, an increase in collective actions (Chaudoir & Quinn, 2010; Guizzo, Cadinu, Galdi, Maass, & Latrofa, 2017; Shepherd & Evans, 2019). The increase in anger triggered via metadehumanization might thus benefit women in their attempts to change the status quo regarding gender inequalities and to reduce sexual objectification practices. In line with this, previous research on metadehumanization has highlighted its crucial role in the rise of aggressive action tendencies (Andrighetto et al., 2016; Kteily et al., 2016).

Finally, one should notice that online dating is a very specific context. People probably expect to be perceived and evaluated through specific parts of themselves when using dating apps/sites, and particularly through their physical appearance. Similarly, scholars have shown that in some organizational contexts, workers sometimes report organizational metadehumanization because they are valued only for and through their productivity (i.e., Caesens et al., 2017; Caesens et al., 2019). Although being considered only through these specific aspects (i.e., physical appearance and productivity) seems relevant and expected in these two situations (i.e., online dating and organizations), individuals still perceive these evaluations as an aversive experience, lived as a form of interpersonal maltreatment, leading to metadehumanization. In any case, our studies provide strong evidence for the role of sexual objectification in the induction of metadehumanization in interpersonal interactions. Such evidence is consistent with recent literature suggesting that metadehumanization emerges from interpersonal maltreatments. For instance, exploitation, ostracism, betrayal or powerlessness situations all lead to metadehumanization (Bastian & Haslam, 2011; Yang et al., 2015). In organizational settings, links have been found between organizational metadehumanization and abusive supervision (Caesens et al., 2019). Importantly, subtle but frequent forms of interpersonal maltreatments have important consequences for the victims. Indeed, research suggests that exposure to subtle forms of daily discrimination over lifetime (Nadal & Haynes, 2012; Root, 1992) and unwanted sexual advances (Miles-McLean et al., 2015) increase trauma symptoms. Our research sheds light on a mechanism that could explain these effects. Specifically, future research should investigate whether these traumatic consequences might in fact result from the experience of being treated and considered by others as less than a full human being.

4.1 Limitations and Future Directions

We first want to mention that, just as any other meta-perception, metadehumanization may be defined in various ways. Indeed, meta-perceptions' literature distinguishes

intragroup meta-perceptions from intergroup ones. Depending on group membership salience and individual factors (e.g., group identification, awareness of group membership), either intragroup or intergroup meta-perceptions will be formed (Frey & Tropp, 2006). To date, metadehumanization has frequently been defined as the “perception that one’s own group is perceived by another as less than fully human” (Kteily et al., 2016, p.3), referring to what could be called metadehumanization at the intergroup level.

With regard to the design we used in the present studies, our participants most probably considered the perpetrator as representing men in general (i.e., the “men” social category) rather than a specific individual. Indeed, we gave almost no other information on the perpetrator except the selected questions and a very short introduction which probably encouraged the depersonalization of the perpetrator (Locksley, Ortiz, & Hepburn, 1980). Similar procedures have been used in other studies in which specific individuals were used as representatives of larger categories. For instance, Kteily and Bruneau (2017) assessed participants’ perceptions that their group is dehumanized by Donald Trump as a representative of the Republican Party. Such perceptions elicited intergroup level metadehumanization responses (see also Sainz, Martínez, Moya, Rodríguez-Bailón, & Vaes, 2020). In the present studies, however, we cannot exclude that some participants individualized the perpetrator, leading their answers to be related to this person rather than to men in general. Future studies should thus use other methodologies to manipulate female participants’ perceptions that men, in general, objectify them in order to further strengthen the present results. In any case, the interpersonal form of metadehumanization could also be explored in future research as it might likely lead to different consequences than the ones observed at the intergroup level.

Concerning our manipulation of the focus on physical appearance, we used general appearance-related questions asked by an alleged interaction partner, but interpersonal sexual objectification might be expressed through many different forms (e.g., male gaze, appearance-related comments). These different forms of interpersonal sexual objectification could thus induce different types of meta-perceptions and consequences. Indeed, previous studies showed that appearance-related compliments (vs. criticisms) have a key role on self-esteem and body-related consequences (e.g., satisfaction with physical appearance, eating disorders; Calogero et al., 2009; Herbozo & Thompson, 2006). In addition to the specific forms that interpersonal sexual objectification might take, it could also stem from different sources (e.g., romantic partners, family, friends, strangers), and women’s perceptions of appearance-related comments vary according to their interaction partners (Lameiras-Fernández et al., 2018). Future studies are thus needed to explore the varying effects of interpersonal sexual objectification on metadehumanization according to the type and source of objectification.

One could question the way we decided to manipulate interpersonal sexual objectification. As noted by Gervais et al. (2020), some studies manipulated interpersonal objectification either through actual or presumed interaction in which women anticipated or believed that they would interact with another (male) partner in a second part of the study.

The present studies used another way to focus on people's physical appearance. Our female participants received sexually objectifying questions from an alleged man who selected questions "he would like to ask you if you agree to discuss with him". We thus believe that our manipulation constitutes a strong way to manipulate sexual objectification in interpersonal interaction. However, other research methods would be necessary to confirm the effect of interpersonal objectification on metadehumanization and negative emotions.

Another important limitation is that we investigated the consequences of interpersonal objectification through a man-woman interaction. As conceptualized by Fredrickson and Roberts (1997), the most classic manifestation of sexual objectification indeed involves a situation in which the focus on physical appearance is delivered by a man to a woman. However, research has shown that women also tend to objectify other women (Strelan & Hargreaves, 2005) and that the frequency and consequences of the exposition to male gaze and sexual harassment do not differ between heterosexual and lesbian women (Hill & Fischer, 2008). Moreover, some studies suggest that men are more and more objectified in media (Hatton & Trautner, 2011; Pope, Olivardia, Gruber, & Borowiecki, 1999), which suggests that they might suffer from similar consequences when exposed to focus on physical appearance behaviors. For instance, Kahalon et al. (2018) found that men experiencing sexual objectification experience a decrease in their cognitive performance. Interestingly, when objectification takes the form of a compliment (rather than the form of questions related one's physical appearance as is the case in our studies), it leads to an improvement of high TSO participants' mood, both among males and females. In line with these results, future studies should seek at extending our results to other targets to determine if sexually objectifying practices have the same deleterious consequences on men and women regardless of a perpetrator's gender or of their own sexual orientation.

Finally, the link observed between metadehumanization and negative emotions is correlational and does not imply causality. Previous studies showed the role of metadehumanization in the occurrence of negative emotions through experimental designs (i.e., Bastian & Haslam, 2011; Zhang et al., 2017), but, as we did not manipulate metadehumanization, we cannot establish the predictive role of metadehumanization in the occurrence of negative emotions. Our mediation analyses should thus be interpreted with cautious and further studies should clarify the relationships between these variables.

4.2 Conclusion

The present paper is the first to explore the consequences of a focus on one's physical appearance on metadehumanization and negative emotions in interpersonal contexts. Our findings showed that subtle forms of interpersonal objectification increase metadehumanization which in turn elicit anger and sadness. The impact of metadehumanization following interpersonal objectification is still underexplored despite its potential far-reaching consequences. Futures studies should help researchers to better apprehend the behavioral consequences of such negative meta-perceptions on individuals' psychological functioning and on the way interpersonal interactions evolve.

Chapter 5

Being the target of sexually objectifying behaviors: What are the consequences for women's metadehumanization and interpersonal relationships?

Previous research findings found that interpersonal sexual objectification increases victims' feelings of being dehumanized by their perpetrators (i.e., metadehumanization). However, to date, research failed to investigate the consequences of metadehumanization for ensuing interactions in the context of interpersonal sexual objectification. The present paper thus examined the consequences of interpersonal sexual objectification and the mediating role of metadehumanization on both perpetrator dehumanization and interpersonal outcomes. In particular, the present research investigated interaction motivation (Studies 1 and 2) and pro-social behaviors (Studies 3a and 3b). Our results showed that the occurrence of both metadehumanization and perpetrator dehumanization following interpersonal sexual objectification mediate the effect of sexual objectification on interaction motivation. However, no such effect was found with regard to pro-social behaviors. The limitations and perspectives for future research are addressed in the general discussion.

Being the target of sexually objectifying behaviors: What are the consequences for women's metadehumanization and interpersonal relationships?

1. Introduction

In society, women are depicted and looked at through an emphasis on their physical appearance and (sexual) body parts. Such a focus has been theorized in objectification theory (Fredrickson & Roberts, 1997) and defined as sexual objectification (SO). According to this theory, SO occurs both in mainstream media via the exposure to sexually objectified bodies (for a review, see Ward, 2016) and in interpersonal interactions via, for instance, gazing or appearance-related comments (e.g., Holland, Koval, Stratemeyer, Thomson, & Haslam, 2017; Swim, Hyers, Cohen, & Ferguson, 2001). If the consequences of SO through mainstream media have been the subject of a large number of studies (for reviews, see Moradi & Huang, 2008; Roberts, Calogero, & Gervais, 2018), SO in interpersonal contexts received lesser attention (Gervais, Sáez, Riemer, & Klein, 2020). In particular, women's perceptions and meta-perceptions following SO in interpersonal contexts have rarely been studied.

The present paper aims at filling this gap. In particular, given the close links reported in the literature between SO and women's dehumanization (for a review, see Mikkola, 2021), we thought to examine the effects of interpersonal SO on women's perceptions that they are being treated as less than fully human by others (i.e., metadehumanization; Demoulin et al., 2020; Kteily, Hodson, & Bruneau, 2016). Further, in line with the literature that has shown that high levels of metadehumanization translate into the reciprocation of dehumanization and, consequently, into negative behavioral consequences towards perpetrators (Kteily et al., 2016; Landry, Ihm, & Schooler, 2021; see also, Andrichetto, Riva, Gabbiadini, & Volpato, 2016), we examine whether SO would reduce women's willingness to interact with or help SO perpetrators and whether such a decrease would be explained by a sequential metadehumanization – perpetrator dehumanization process (i.e., Kteily et al., 2016; Landry et al., 2021).

1.1 Focus on Physical Appearance in Interpersonal Interactions

According to Kozee, Tylka, Augustus-Horvath, and Denchik (2007), SO occurs in interpersonal encounters either through body evaluation behaviors or unwanted sexual advances. In line with their conceptualization, these authors identified a large variety of behaviors related to these two forms of SO. For instance, gazing, stares, whistles, comments and sexual remarks exemplify body evaluation behaviors whereas sexual harassment, unwanted touching and sexual gestures fall under the unwanted sexual

advances umbrella. In the literature, several studies looked at the frequency of exposure to both forms of sexually objectifying behaviors in interpersonal contexts. For instance, Swim et al. (2001) examined the experiences and consequences of prejudice in interpersonal encounters and showed that, among other sexist events, sexual objectification is the most frequent form of everyday sexism reported by women over a two-week period. They found that women are exposed to sexually objectifying comments about 1 to 2 times a week. The high prevalence of interpersonal SO is also highlighted in Holland et al.'s (2017) study showing that 75% of female participants reported being personally targeted by sexually objectifying behaviors at least once a week.

Unwanted sexual advances are also frequent. For instance, in a study conducted by Fairchild and Rudman (2008), 26.3% of women reported being fondled or grabbed against their will once a month (see also, Fairchild, 2010). Similarly, Hayden, Graham, and Lamaro (2016) examined unwanted sexual advances and found that being touched over clothes was the most frequent form of unwanted sexual advance experienced by women over their lifetime (see also, Basile, Chen, Black, & Saltzman, 2007). Hence, both body evaluation behaviors and unwanted sexual advances are frequent for women.

Such SO experiences are not without important consequences. For instance, Calogero (2004) found that the mere anticipation of male gaze increases body shame and physical appearance anxiety (as compared to female gaze anticipation). Garcia, Earnshaw, and Quinn (2016) also showed that being apprehended on the basis of one's physical attributes in mixed-sex dyads increases self-objectification tendencies among women (see also, Fairchild & Rudman, 2008), that is, the degree to which women internalize SO and consider their self as an "object to be looked at and evaluated" (Fredrickson & Roberts, 1997, p.177).

SO in interpersonal interactions has also been found to decrease women's cognitive performances (e.g., Gay & Castano, 2010; Gervais, Vescio, & Allen, 2011). For instance, Gervais et al. (2011) trained male and female confederates to enact objectifying gaze toward participants of the other sex. They found that women (but not men) performed less well at a math test when under sexually objectifying gaze as compared to a control, non-gazing, condition. Other studies highlighted the moderating role of Trait Self-Objectification (TSO), that is, the extent to which women consider their physical appearance as a central part of their self. For instance, Gay and Castano (2010) showed that women with high levels of TSO had lower response latencies at difficult trials of a cognitive task when a video was previously recorded by a male experimenter (vs. a female experimenter) focusing on their carriage and dress style (for similar results, see Kahalon, Shnabel, & Becker, 2018, Study 1). More recently, Guizzo and Cadinu (2016) showed that the negative effect of SO on cognitive performance is explained by a decrease in flow experiences, that is, by a decrease of women's immersion in the demanding task. Again, this effect only occurred for women high in TSO.

Finally, available research points to the general deleterious consequences of interpersonal SO on interpersonal interactions. For instance, women (but not men) spent

less time at introducing themselves when they are videotaped from the neck down (vs. from the neck up vs. audio recording only) and believed they are talking to a man (vs. female) (Saguy, Quinn, Dovidio, & Pratto, 2010; see also, Sáez, Riemer, Valor-Segura, & Expósito, 2020). Interpersonal SO also undermines women's sense of agency (Garcia et al., 2016), their perception of interactions' authenticity (Garcia et al., 2016) and interaction pleasantness (Sáez et al., 2020), as well as the interaction partner's likeability and their motivation to interact with him (Teng, Chen, Poon, & Zhang, 2015). Yet, with regards to the latter, research findings are inconsistent. For instance, in their study, Gervais et al. (2011) found that women (but not men) were, in fact, more motivated to interact with those who gazed at them.

1.2 Focus on Physical Appearance: Its Relationships with Dehumanization Processes

Research in the domain of SO has shown that sexually objectified women are attributed less human characteristics compared to non-objectified ones (e.g., Heflick & Goldenberg, 2009; Heflick, Goldenberg, Cooper, & Puvia, 2011; Rudman & Mescher, 2012; Vaes, Paladino, & Puvia, 2011; Wollast, Puvia, Bernard, Tevichapong, & Klein, 2018). Indeed, scholars have found that a focus on women's (sexual) body parts and physical appearance increases both the animalistic (Bongiorno, Bain, & Haslam, 2013; Vaes et al., 2011) and the mechanistic (Heflick & Goldenberg, 2009; see also, Morris, Goldenberg, & Boyd, 2018) forms of dehumanization. For instance, exploring the implicit associations between sexualized women and animal or human-related concepts, Vaes et al. (2011) found that sexually objectified (vs. non-objectified) women are less associated with human-related concepts compared to animal-related ones. Animalistic dehumanization also occurs at a more explicit level. In this respect, Bongiorno et al. (2013) found that sexualized women are denied human uniqueness traits, which indicates animalistic dehumanization. Regarding mechanistic dehumanization, Heflick and Goldenberg (2009) gave evidence for a denial of human nature characteristics among people who focus on women's physical appearance (vs. on the person as a whole). More precisely, the authors showed that human nature traits correlated less with human essence when participants received instructions to focus on women's physical appearance.

If the link between a focus on women's physical appearance and dehumanization seems well established among perpetrators, less is known with regards to women's reactions to these SO instances. In particular, we do not know, at this stage, whether women perceive situations of interpersonal SO as dehumanizing.

Two main reasons lead us to hypothesize that, when women are the targets of a focus on their physical appearance, they would report higher metadehumanization levels than women who do not face such sexually objectifying experiences. First, the broad literature on meta-perceptions suggests that people are often aware of the way others perceive them and that this awareness translates into meta-perceptions that closely correlate to the perceptions of one's interlocutor (e.g., Sigelman & Tuch, 1996; see also, Yzerbyt, Provost,

& Corneille, 2005). Hence, given the frequent perception of sexually objectified women as less than fully human individuals, one should expect that interpersonal SO experiences would increase metadehumanization reports among women. Second, recent research highlighted the occurrence of metadehumanization following interpersonal maltreatments among victims (e.g., Bastian & Haslam, 2011; Caesens, Nguyen, & Stinglhamber, 2019; Renger, Mommert, Renger, & Simon, 2016). Bastian and Haslam (2011) found that various forms of interpersonal maltreatments (i.e., social ostracism, disrespect, betrayal, patronizing interaction etc.) increase people's reports of being viewed as less than full human persons. In organizational contexts, Caesens et al. (2019) similarly showed that abusive supervision increases employees' perceptions of being treated as less than fully human. Closer to our interest, Moor, Ben-Meir, Golan-Shapira, and Farchi (2013) found that, in comparison to other traumas (i.e., terror accident, sudden loss), extreme forms of interpersonal SO experiences (i.e., rape or sexual harassment) increase metadehumanization reports. More recently, Chevallereau, Stinglhamber, Maurage, and Demoulin (2021) showed that a mere focus on their physical appearance is in fact sufficient to increase women's metadehumanization reports (see also, Chevallereau, Maurage, Stinglhamber, & Demoulin, 2021). Hence, SO experiences may probably be considered as a form of interpersonal maltreatment, as perpetrators only focus on people's physical appearance, denying other aspects of their self.

In line with these results, there are many reasons to believe that women facing a male interlocutor that focuses on their sexual physical appearance would increase reports of being dehumanized compared to situations in which the interlocutor's focus is placed on their personal characteristics.

1.3 The Consequences of Metadehumanization for Interpersonal Interactions

If our research replicates the increase in metadehumanization among women following SO, it could have important consequences for ensuing interpersonal interactions. Indeed, in the intergroup domain, research findings showed that metadehumanization follows the same rule as others forms of (negative) meta-perceptions (e.g., Curtis & Miller, 1986; Owuamalam, Tarrant, Farrow, & Zagefka, 2013) as it tends to be reciprocated. That is, when people report being dehumanized by an outgroup (i.e., metadehumanization), they reciprocate in return and thus increase their own dehumanizing tendencies toward outgroup members (Kteily et al., 2016; Landry et al., 2021). In addition, such an increase of outgroup dehumanization, leads to higher support for aggressive policies, attitudes, and behaviors directed toward outgroup members.

The same kind of effects has also been shown at the interpersonal level. For instance, Andrighetto et al. (2016) explored the relationships between metadehumanization and aggressiveness. In their studies, the authors found that socially excluded individuals, who are labeled with animal metaphors, report higher levels of (animalistic) metadehumanization which in turn increases aggressive tendencies towards the perpetrator

of social exclusion. Hence, both at the interpersonal and at the intergroup levels, metadehumanization has been shown to enhance aggressiveness, which seems to be explained by perpetrators dehumanization in intergroup contexts.

1.4 Linking Sexual Objectification to its Interpersonal Outcomes

As suggested above, the perception of being dehumanized by one's interlocutor might lead to that interlocutor aggression. Yet, aggression is an extreme form of negative behavior, which is generally condemned (Cushman, Young, & Hauser, 2006; for a review, see Miller & Cushman, 2013). Hence, in day-to-day interpersonal interactions, morally sanctioned behaviors are likely to be replaced by interaction avoidances. Moreover, with regards to experiences of SO, research mostly focused on the way SO influences women's motivation to interact with the perpetrator of sexual objectification (e.g., Gervais et al., 2011; Teng et al., 2015). As noted above, this literature found inconsistent findings as one study indicated a decrease in women's willingness to interact with those who focus on their sexual physical appearance (Teng et al., 2015) and another an increase (Gervais et al., 2011). However, most research findings highlighted the negative effect of interpersonal sexual objectification on interaction-related variables. Particularly, the focus on women's physical appearance decreases interaction authenticity (Garcia et al., 2016), interaction pleasantness and speaking time during interaction (Sáez et al., 2020; see also, Saguy et al., 2010). These research findings encouraged us to investigate interpersonal outcomes such as the motivation to interact with the perpetrator and the propensity to engage in pro-social behaviors towards the perpetrator following interpersonal SO. Specifically, we hypothesized that being confronted with interpersonal SO would induce interaction avoidance among women, and thus decrease motivation to interact with the perpetrator and pro-social behaviors towards perpetrators compared to situations devoid of SO.

1.5 Overview of Studies

The present paper examines the impact of a focus on physical appearance in interpersonal encounters on metadehumanization, perpetrator dehumanization (i.e., reciprocal dehumanization) and ensuing interpersonal relationships (i.e., interaction motivation and pro-social behaviors). Specifically, Studies 1 and 2 aim at investigating women's motivation to interact with their perpetrator, whereas Studies 3a and 3b examined women's pro-social behaviors towards the perpetrator following SO experiences. The sequential mediating roles of metadehumanization and perpetrator dehumanization in the relationship between interpersonal SO and interpersonal outcomes is also investigated. In line with the above-reviewed literature on interpersonal SO and metadehumanization, we hypothesize that when facing an interlocutor that focuses on their physical appearance, women's metadehumanization (Hypothesis 1) and reciprocal dehumanization (Hypothesis 2) increase whereas their willingness to interact with him (Studies 1 and 2) and express pro-social behaviors (Studies 3a and 3b) decrease (Hypothesis 3). Finally, the latter decrease in

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motivation interaction and pro-social behaviors should be explained by women's perceptions that their interlocutor dehumanizes them (i.e., metadehumanization) and the perpetrator dehumanization (i.e., reciprocal dehumanization) that ensues this meta-perception (Hypothesis 4)¹.

2. Study 1

Study 1 aimed at replicating past research findings showing that interpersonal SO increases metadehumanization (Chevallereau, Stinglhamber et al., 2021). Testing the hypotheses reported here above, we also examined a consequence of metadehumanization that has never been investigated in the context of interpersonal SO, that is, reciprocal dehumanization (i.e. perpetrator dehumanization) as well as its effect on interaction motivation. The pre-registration of Study 1 is available online through the following link: https://osf.io/w25p4/?view_only=b97b55835bad4c698dc35292b0112de7.

2.1 Method

Participants

Ninety-nine female participants were recruited through Prolific Academic to take part in this study. Considering the lower effect size found in Chevallereau, Stinglhamber, et al.'s (2021) studies ($\eta^2_p = .12$), G*Power recommended to recruit 89 participants in order to provide 95% of statistical power. We decided to add 7% of participants to this sample on the basis of Chevallereau, Stinglhamber, et al.'s (2021) studies, in which the researchers had to discard up to 7% of their sample because of failures at attentional check questions. In the present study, failures to attentional check questions (i.e., "It is important that you pay attention to our survey. Please tick "Strongly disagree" for this statement") led us to discard 15 participants from analyses. Hence, the final sample was composed of 84 female participants. The mean age was 34.64 years ($SD = 11.37$). Each participant was randomly assigned to one of the two conditions ($n = 40$ in the experimental condition; $n = 44$ in the control condition).

Procedure and Materials

Manipulation of focus on physical appearance. We used the same procedure and cover story as Chevallereau, Stinglhamber, et al. (2021). More precisely, participants were asked to take part in a study on "Impression formation processes in virtual meetings". The study was presented as a new type of online dating site in which subscribers have to select the questions they would like to ask if a match occurred between two subscribers. We explained that subscribers had to select their questions from different categories such as

¹ For the sake of clarity, we used the same hypotheses' numbers along the present paper, which explains why hypotheses' numbers may differ from the pre-registered ones.

interests/hobbies, family/friends or physical appearance. Our female participants were exposed to Thomas' fake profile, a user of the dating site. In both condition, Thomas explained what is important for him in a romantic relationship and then selected the questions he would like to ask to the other person in case of shared interest. Thomas' introduction differed as a function of condition assignment: "Generally, I attach importance to the personality of the person I am in relationship with, but also to her physical appearance (vs. her interests and hobbies): if a woman does not appeal to me (vs. does not have similarities with me), I am afraid it will not work between us". The selected questions also differed between the two conditions: in the experimental condition Thomas selected four questions related to physical appearance and three in other domains, whereas, in the control condition, he selected one question related to physical appearance and six in other domains.

After the manipulation phase, participants of both conditions were exposed to the same scales, assessing metadehumanization, perpetrator (de)humanization, and interaction motivation². Manipulations check questions (e.g., "I think Thomas was mainly interested in my physical appearance") were also included in the survey flow. The survey flow with manipulation procedure and items used to assess each variable is available on OSF (https://osf.io/w25p4/?view_only=b97b55835bad4c698dc35292b0112de7).

Metadehumanization. Participants' feelings of being perceived as less than fully human by Thomas were measured with an adapted version of Demoulin et al.'s (2020) metadehumanization scale. The scale used eight items to assess animalistic metadehumanization (e.g., "Thomas perceived me as if I was under-evolved") and eight items to assess mechanistic metadehumanization (e.g., "Thomas perceived me as an emotionless person"). For each item, participants had to indicate their level of agreement using a 7-points Likert scale ranging from 1 ("Strongly disagree") to 7 ("Strongly agree").

Perpetrator (de)humanization. To assess dehumanization of the perpetrator, we used items similar to the ones used to assess metadehumanization. Yet, to avoid a potential reluctance of women to report dehumanization of the perpetrator and to increase the distinction between this measure and the preceding one, we formulated the items in a positive way, measuring humanization, rather than dehumanization, of the perpetrator. Items such as "I think that Thomas is someone civilized" thus assessed animalistic humanization of the perpetrator whereas items such as "I think that Thomas is emotionally responsive" assessed mechanistic humanization of the perpetrator.

Interaction motivation. Finally, participants had to complete the interaction motivation measure. Inspired of Gervais et al.'s (2011) items, we created four items (e.g., "I would be in favor of a meeting with this person if I was in an online dating process") to assess the

² Self-dehumanization items were also included in this study and in the following ones. Yet, because of an absence of significant results on this measure and for the sake of coherence and clarity, we decided not to include this measure in the present paper.

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motivation participants had to interact with Thomas. Higher scores indicate higher motivation to interact with Thomas.

2.2 Results

2.2.1 Preliminary Analyses

In order to determine the presence of the two dimensions of dehumanization (i.e., animalistic and mechanistic) in the scales constructed on the basis of the dual model of dehumanization (Haslam, 2006), we ran two principal component analyses on metadehumanization and perpetrator humanization scales. For the scale assessing metadehumanization, the principal component analysis indicated that the two dimensions did not emerge, showing that all items load on a one-factor structure explaining a total of 75.97% of variance (factor loadings ranged from .936 to .759). Moreover, Cronbach's alpha indicated a good internal consistency ($\alpha = .97$), all items assessing metadehumanization were thus merged to create one index representing both the perceptions of being animalistically and mechanistically dehumanized by Thomas.

For the scale assessing humanization of Thomas, the principal component analysis again indicated that the two dimensions did not emerge. All items load on a single factor solution explaining 67.99% of variance (factor loadings ranged from .914 to .589). The scale had a good internal consistency ($\alpha = .95$). In order to assess dehumanization of the perpetrator, all items were reversed and collapsed to create one index representing both animalistic and mechanistic dehumanization of the perpetrator. Higher scores on this measure thus reflected higher tendencies to dehumanize the interlocutor³.

Descriptive statistics and correlations between variables are displayed in Table 1. As expected, metadehumanization positively related to perpetrator dehumanization and negatively to motivation interaction. Moreover, dehumanization of the perpetrator negatively related to participants' willingness to interact with him.

Table 1. Descriptive statistics and correlations among variables in Study 1

	Sexual Objectification	Control	1.	2.	3.
1. Metadehumanization	3.76 (1.29)	2.24 (1.29)	(.97)	.65**	-.53**
2. Perpetrator dehumanization	4.96 (1.11)	3.76 (1.01)		(.95)	-.70**
3. Motivation interaction	1.93 (1.22)	3.11 (1.58)			(.97)

Note. $N = 84$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

³ We also performed an exploratory factorial analysis with all metadehumanization and perpetrator dehumanization items to ensure that we found the two factors related to these concepts. This analysis showed that two factors emerged, one related to metadehumanization items, explaining 60.50% of variance (factor loadings ranged from .946 to .562) and another related to perpetrator dehumanization explaining 13.10% of variance (factor loadings ranged from .910 to .620).

2.2.2 Main Analyses

Manipulation check. In order to check for the efficiency of our manipulation, we regressed the manipulation check on conditions (experimental condition, coded 0.5, and control condition, coded -0.5). Results indicate that participants assigned to the experimental condition ($M = 5.63$, $SD = 1.21$) reported higher levels of a focus on their physical appearance compared to participants in the control condition ($M = 2.85$, $SD = 1.33$), $b = 2.78$, $t = 9.91$, $p < .001$, $\eta^2_p = .54$.

Metadehumanization. We ran regression analysis in order to test the effect of the focus on physical appearance on metadehumanization. In line with Hypothesis 1, participants reported significantly higher levels of metadehumanization in the experimental condition ($M = 3.76$, $SD = 1.29$) as compared to the control one ($M = 2.24$, $SD = 1.29$), $b = 1.51$, $t = 5.36$, $p < .001$, $\eta^2_p = .26$.

Perpetrator dehumanization. The regression of perpetrator dehumanization on conditions supports Hypothesis 2. Women reported significantly higher levels of perpetrator dehumanization in the experimental condition ($M = 4.96$, $SD = 1.11$) as compared to the control one ($M = 3.76$, $SD = 1.01$), $b = 1.20$, $t = 5.20$, $p < .001$, $\eta^2_p = .24$. Interestingly, when running T-test in order to assess whether means related to perpetrator dehumanization significantly differed from the midpoint of the scale (i.e., 4) in both conditions, we found that only the experimental condition's mean significantly differed from 4, $t(39) = 5.51$, $p < .001$.

Interaction motivation. Finally, regression analysis provided support for Hypothesis 3 showing that participants in the experimental condition ($M = 1.93$, $SD = 1.22$) reported lower levels of motivation to interact with Thomas compared to participants assigned to the control condition ($M = 3.11$, $SD = 1.58$), $b = -1.18$, $t = -3.79$, $p < .001$, $\eta^2_p = .14$.

2.2.3 Mediation Analyses

Hypothesis 4 states that the effect of SO on the motivation to interact with the interlocutor would results from metadehumanization and perpetrator dehumanization^{4,5}.

⁴ As proposed in the pre-registered protocol, we also tested the mediating role of metadehumanization in the relationship between a focus on physical appearance and perpetrator dehumanization. The mediation model was tested using macro PROCESS (Model 4; resample = 10,000 iterations; Hayes, 2013). In line with the pre-registered hypothesis, SO positively and indirectly related to perpetrator dehumanization via an increase in metadehumanization, indirect effect = 0.66, 95% CI = [0.33; 1.09]. However, the direct effect of our manipulation on perpetrator dehumanization remained significant (direct effect = 0.54, 95% CI [0.08, 0.99]), indicating a partial mediating role of metadehumanization;

⁵ For the same reasons, the mediating role of perpetrator dehumanization in the relationship between focus on physical appearance and interaction motivation was tested using bootstrap analysis too (Model 4). As expected, the indirect effect of focus on physical appearance on interaction motivation via perpetrator dehumanization is negative and significant (indirect effect = -1.03, 95% CI [-1.56, -0.59]). Results support a full mediation model, insofar as the effect of the focus on physical appearance on interaction motivation is no longer significant when taking into account the dehumanization of the perpetrator (direct effect = -0.14, 95% CI [-0.69, 0.40]).

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The serial mediation model was tested using macro PROCESS (Model 6), we entered focus on physical appearance as a predictor (X), interaction motivation as a criterion (Y), metadehumanization as a first mediator (M1) and perpetrator dehumanization as a second mediator (M2). As showed in Figure 1, the results showed that, in combination, metadehumanization and perpetrator dehumanization totally mediated the relationship between the focus on physical appearance and interaction motivation (indirect effect = -0.51, 95% CI [-0.95, -0.23]; direct effect = -0.04, 95% CI [-0.62, 0.52]).

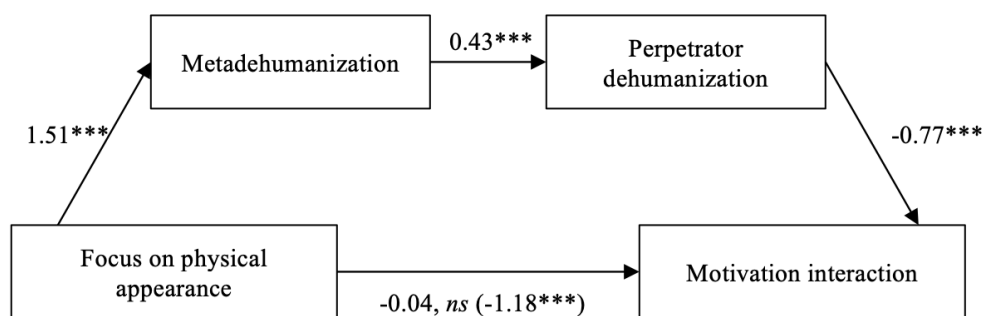


Figure 1. The sequential mediating role of metadehumanization and perpetrator dehumanization in the relationship between focus on physical appearance and interaction motivation (Study 1).

*** $p < .001$.

2.3 Discussion

This first study replicates past research findings showing that a mere focus on physical appearance through interpersonal encounters increases women's feeling of being dehumanized by perpetrators (i.e., metadehumanization). Focus on physical appearance was also shown to lead women participants to dehumanize the perpetrator of SO. In addition, interpersonal SO had negative consequences on ensuing interactions as it undermined participants' motivation to interact with the perpetrator. The latter finding is not consistent with Gervais et al.'s (2011) research findings but corroborates findings of Teng et al. (2015) and the studies that have more broadly highlighted the negative consequences of interpersonal SO on interaction-related variables (e.g., Garcia et al., 2016; Sáez et al., 2020; Saguy et al., 2010). Finally, our study shows that the increase in both metadehumanization and perpetrator dehumanization mediate the effect of interpersonal SO on motivation interaction.

As interesting as they are, the results of Study 1 need to be replicated and further studies should take into account the effect of inter-individual moderators. In particular, the experience of facing someone that focalizes on one's sexual appearance might be different depending on whether one appreciates or enjoys sexualization more globally. This

reasoning is in line with Riemer, Allen, Gullickson, and Gervais's (2020) research findings showing that women high in enjoyment of sexualization (ES; Liss, Erchull, & Ramsey, 2011) perceive their partner in a more positive way following interpersonal sexual objectification (i.e., positive appearance comment). This research exemplifies how levels of enjoyment of sexualization might shape women's perceptions of their sexually objectifying partner. In the present study, we hypothesized that ES would moderate the effect of interpersonal SO on both metadehumanization and interaction motivation. In particular, in the SO condition, participants with low levels of ES would report higher levels of metadehumanization compared to participants with high levels of ES for which we hypothesized lower (or similar) levels of metadehumanization compared to participants in the control condition. However, for participants in the control condition, metadehumanization reports should not be affected by participants' levels of ES (Hypothesis 5). Similarly, we hypothesized that participants with low (vs. high) levels of ES would report lower levels of interaction motivation in SO condition, whereas in the control condition, participants' interaction motivation should not be affected by participants' levels of ES (Hypothesis 6).

Following the same idea, we also expect that the effect of SO on metadehumanization and women's motivation to interact with their interlocutor should vary as a function of women's levels of TSO. Specifically, we proposed that as levels of TSO reflect the degree to which women attribute importance to their physical appearance, women with high levels of TSO should not be offended by someone else focusing on their physical appearance to the extent that such a behavior is in line with their own way of functioning. This idea corroborated Kahalon et al. (2018, Study 2), showing that when women high in TSO receive appearance compliment from a man, they then report more positive mood (for similar results, see, Fea & Brannon, 2006).

In line with this, we also hypothesized that in the SO condition, women with low levels of TSO would report higher levels of metadehumanization compared to participants with high levels of TSO for which we hypothesized lower (or similar) levels of metadehumanization compared to participants in the control condition (Hypothesis 7). Here again, metadehumanization reports of participants in the control condition should not be affected by their levels of TSO. Moreover, we hypothesized that participants with low (vs. high) levels of TSO would report lower levels of interaction motivation in SO condition, whereas in the control condition, participants' interaction motivation should not be affected by participants' levels of TSO (Hypothesis 8).

3. Study 2

Study 2 aims at addressing the limitations outlined above examining the moderating role of inter-individual variables (i.e., ES and TSO) in the relationship between interpersonal SO and the investigated outcomes (i.e., metadehumanization, perpetrator dehumanization and interaction motivation). The design and all hypotheses of Study 2 were

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pre-registered through the following link:
https://osf.io/s9haq/?view_only=855ed40c557d48a19caabb351fcf91a4.

3.1 Method

Participants

Power analyses were conducted to determine the adequate sample size. As we hypothesized moderation effects, we ran power analyses based on a main interaction effect, expecting a medium effect size of .20 and in order to provide 80% of statistical power, G*Power invited us to recruit 199 participants. We recruited 209 female participants through the crowdsourcing platform Prolific Academic. However, due to errors at attentional checks questions, we discarded 24 participants from analyses, leaving a final sample of 185 participants. Participants' age ranged from 18 to 66 years ($M = 36.30$, $SD = 11.60$), each of them was randomly assigned to one of the two conditions ($n = 96$ in the focus on physical appearance condition, $n = 89$ in the control condition).

Procedure and Materials

Moderators. We assessed Enjoyment of Sexualization and Trait Self-Objectification at the beginning of the study to prevent influence of the manipulation on the measurement of these moderating variables. The rationale provided to participants about these measures informed them that the perception they have of their physical appearance might influence how they apprehend online dating which constituted the main interest of the study.

Enjoyment of sexualization scale assessed the extent to which women enjoy being confronted with male sexual attention "It is important to me that men are attracted to me" (Liss et al., 2011). For each of the eight items, participants had to indicate their levels of agreement on a 1 (strongly disagree) to 7 (strongly agree) scale. Higher scores reflect higher levels of enjoyment of sexualization.

Trait self-objectification was assessed with the Trait Self-Objectification Questionnaire (TSOQ; Noll & Fredrickson, 1998). The questionnaire asked participants to rank order a list of 10 physical attributes by order of importance. The list of traits included both observable and non-observable characteristics. A self-objectification score was computed summing the rank for both observable and non-observable body attributes separately and then subtracting the sum of observable attributes from the sum of non-observable ones. Higher scores on this measure indicate higher levels of TSO.

After these first questionnaires, participants took part in the manipulation phase. The manipulation was the same manipulation as in Study 1. Finally, participants answered to the following scales: manipulation check, metadepersonalization, perpetrator (de)humanization, interaction motivation, and demographic questions. For all these measures, we used the same scales as in Study 1.

3.2 Results

3.2.1 Preliminary Analyses

As in Study 1, principal component analyses were conducted on the metadehumanization and perpetrator humanization scales⁶. All metadehumanization items loaded on a single factor solution, explaining 66.53% of variance (factor loadings ranged from .875 to .723, $\alpha = .96$). Similarly, all perpetrator humanization items loaded on a single factor solution explaining 68.95% of variance (factor loadings ranged from .925 to .416, $\alpha = .95$). Consequently, as in Study 1, two indices were created, one for metadehumanization and one for perpetrator dehumanization (by reversing all humanization scores).

Table 2 displays descriptive statistics as a function of conditions and correlations between variables. Metadehumanization positively correlated with perpetrator dehumanization and negatively with interaction motivation, which also negatively correlated with perpetrator dehumanization.

Table 2. Descriptive statistics and correlations among variables in Study 2

	Sexual objectification	Control	1.	2.	3.	4.	5.
1. Metadehumanization	3.94 (1.06)	2.38 (1.19)	(.96)	.73**	-.65**	.05	.07
2. Perpetrator dehumanization	5.00 (.92)	3.37 (.98)		(.95)	-.79**	-.03	.05
3. Motivation Interaction	2.01 (1.18)	3.94 (1.78)			(.97)	.03	-.08
4. Enjoyment of sexualization	3.95 (1.02)	4.01 (1.20)				(.84)	-.32**
5. Trait self-objectification	-.53 (2.83)	-.35 (2.44)					N/A

Note. $N = 185$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

3.2.2 Main Analyses

Manipulation check. Confirming the success of our manipulation, participants reported that Thomas was more interested in their physical appearance in the focus on physical appearance condition ($M = 5.75$, $SD = 1.04$) compared to the control condition ($M = 2.84$, $SD = 1.10$), $b = 2.90$, $t = 18.34$, $p < .001$, $\eta^2_p = .64$.

Metadehumanization. Similar to what was found in Study 1, participants reported higher levels of metadehumanization in the focus on physical appearance condition ($M = 3.94$, $SD = 1.06$) as compared to the control condition ($M = 2.38$, $SD = 1.19$), $b = 1.56$, $t = 9.38$, $p < .001$, $\eta^2_p = .32$.

⁶ As for Study 1, we ran an exploratory factorial analysis with all metadehumanization and perpetrator dehumanization items. Here again, two factors emerged, one related to metadehumanization items, explaining 58.53% of variance (factor loadings ranged from .980 to .466) and another related to perpetrator dehumanization explaining 10.31% of variance (factor loadings ranged from .931 to .458).

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Perpetrator dehumanization. Here again, our results replicate the ones found in Study 1. As expected by Hypothesis 2, participants denied more humanness to the perpetrator in the focus on physical appearance condition ($M = 5.00$; $SD = .92$) as compared to the control condition ($M = 3.37$; $SD = .98$), $b = 1.63$, $t = 11.64$, $p < .001$, $\eta^2_p = .42$. T-tests also pointed out that the means of both conditions significantly differed from the mean's scale (i.e., 4). Interestingly, the mean of perpetrator dehumanization in the focus on physical appearance condition is significantly higher than 4, $t(95) = 10.62$, $p < .001$, while it is significantly lower than 4 in the control condition, $t(88) = -6.03$, $p < .001$.

Interaction motivation. Replicating results of Study 1 and supporting Hypothesis 3, regression analysis showed that participants in the experimental condition ($M = 2.01$; $SD = 1.18$) reported lower levels of motivation to interact with Thomas compared to participants assigned to the control condition ($M = 3.94$; $SD = 1.78$), $b = -1.93$, $t = -8.73$, $p < .001$, $\eta^2_p = .29$.

3.2.3 Mediation and Moderation Analyses

As in Study 1, we conducted a serial mediation analysis in order to test Hypothesis 4^{7,8}. We tested the serial mediation model in which metadehumanization (M1) and perpetrator dehumanization (M2) were entered as mediators in the relationship between focus on physical appearance (X) and motivation interaction (Y) through bootstrapping analysis (Model 6). As in Study 1, the focus on physical appearance indirectly and negatively related to interaction motivation (indirect effect = -0.71, 95% CI [-1.05; -0.44]) via metadehumanization and perpetrator dehumanization (direct effect = -0.05, 95% CI [-0.47; 0.35]), which supports a full mediation model (See Figure 2).

⁷ We tested the mediating role of metadehumanization in the relationship between a focus on physical appearance and perpetrator dehumanization. This was done using bootstrap analysis (macro PROCESS, Model 4, resample = 10,000 iterations; Hayes, 2013). As in Study 1, the results of mediation analyses showed that metadehumanization partly mediates the relationship between the focus on physical appearance and dehumanization of the perpetrator (indirect effect = 0.75, 95% CI [0.54, 0.99]); direct effect = 0.87, 95% CI [0.59, 1.15]);

⁸ We also tested the mediating role of perpetrator dehumanization in the relationship between a focus on physical appearance and interaction motivation using bootstrap analysis (macro PROCESS, Model 4, resample = 10,000 iterations; Hayes, 2013). The results support a full mediation model, showing that perpetrator dehumanization totally mediate the effect of focus on physical appearance on interaction motivation (indirect effect = -1.77, 95% CI [-2.19; -1.36]; direct effect = -0.15, 95% CI [-0.57, 0.26]).

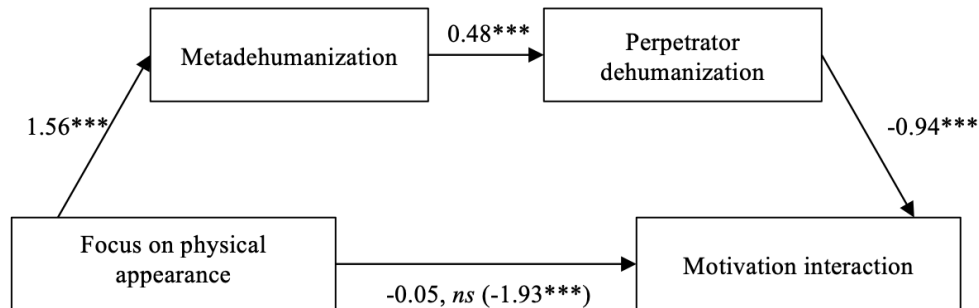


Figure 2. The sequential mediating role of metadehumanization and perpetrator dehumanization in the relationship between focus on physical appearance and interaction motivation (Study 2).

*** $p < .001$.

Then, the moderating roles of ES and TSO in the relationship between focus on physical appearance and interaction motivation was tested using bootstrap analyses (Model 1), with either ES or TSO as a moderator. We only found that ES interacts with conditions, $b = 0.48$, $t = 2.19$, $p = .02$, supporting Hypothesis 6. As predicted, Figure 3 showed that participants with low levels of ES report lower levels of interaction motivation following interpersonal SO than participants with high levels of ES (-1SD: $b = -2.41$, $t = -7.75$, $p < .001$; +1SD: $b = -1.44$, $t = -4.61$, $p < .001$).

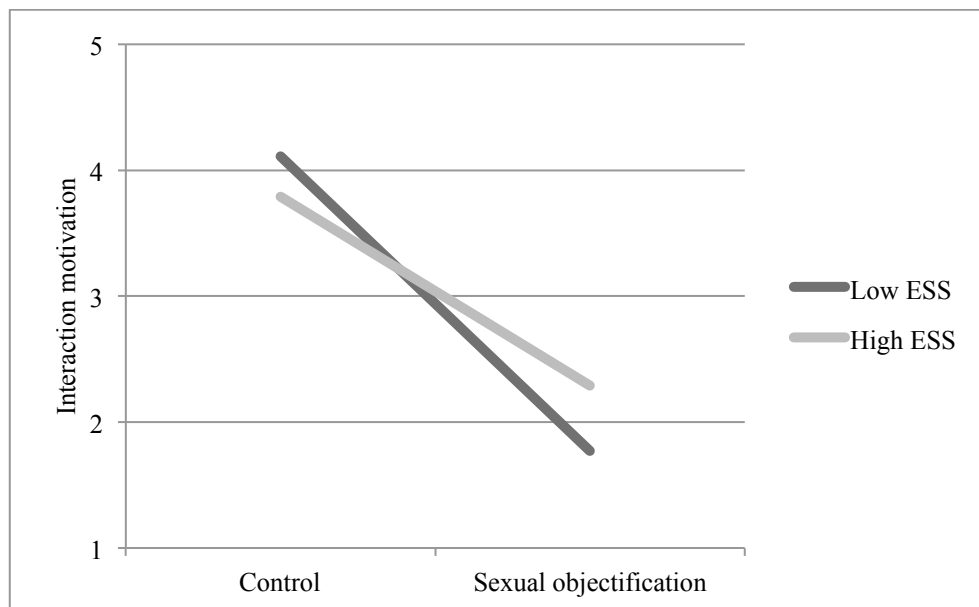


Figure 3. The effect of conditions on interaction motivation as a function of enjoyment of sexualization (Study 2)

Finally, given the moderating role played by ES in the relationship between the focus on physical appearance and motivation interaction, we tested a moderated mediation model using bootstrapping (Model 7) in which we entered condition as the independent variable (X), interaction motivation as the outcome variable (Y), metadehumanization as the mediator variable (M) and enjoyment of sexualization as the proposed moderator (W). Results of bootstrap analyses showed that ES did not moderate the effect of focus on physical appearance on metadehumanization, $b = -0.20$, $t = -1.23$, $p = .22$.

Although not preregistered, we decided, for exploratory purposes to test whether a moderation effect of ES would not occur between perpetrator dehumanization and the motivation to interact with him. Indeed, very recent literature (published after the preregistration of the current study) suggests this possibility. Particularly, according to Riemer and colleagues (2020), women high in ES might not differ in the extent to which they assess objectification practices as a dehumanizing treatment but rather in the extent to which they “tolerate more objectification and interactions with objectifying sources that oppress them” (Riemer et al., 2020, p.742).

In line with this idea, we decided to investigate the hypothesis according to which perpetrator dehumanization mediates the effect of interpersonal SO on interaction motivation, with ES as a moderator in the relationship between perpetrator dehumanization and interaction motivation. First, we tested the mediation model according to which the relationship between focus on physical appearance and interaction motivation was mediated by perpetrator dehumanization. Bootstrap analyses (Model 4, resample = 10,000 iterations) indicated that the effect of physical appearance on interaction motivation was mediated by perpetrator dehumanization (indirect effect = -1.77 , 95% CI $[-2.18, -1.36]$; direct effect = -0.15 , 95% CI $[-0.57, 0.26]$). Then, we tested the moderating role of ES in the relationship between perpetrator dehumanization and interaction motivation with bootstrap analyses (Model 1). We found that the effect of perpetrator dehumanization on women’s motivation varied as a function of women’s levels of ES, $b = .16$, $t = 2.11$, $p = .03$. In particular, for participants with low levels of ES, the negative effect of perpetrator dehumanization on interaction motivation was stronger than for participants with high levels of ES ($-1SD$: $b = -1.59$, $t = -13.79$, $p < .001$; $+1SD$: $b = -1.25$, $t = -11.40$, $p < .001$). Finally, in light of such results, we tested the moderated mediation model using bootstrapping (Model 14) in which condition was entered as the independent variable (X), interaction motivation as the outcome variable (Y), dehumanization of the perpetrator as the mediator variable (M) and enjoyment of sexualization as the proposed moderator (V) between the mediator and the outcome. The results of bootstrap analyses showed that in spite of the results reported above, the mediating effect of perpetrator dehumanization in the relationship between sexual objectification and interaction motivation was not conditioned to the levels of ES, while only the effect of perpetrator dehumanization on interaction motivation is moderated by ES, index = 0.19 , 95% CI $[-0.005, 0.38]$.

3.3 Discussion

Study 2 replicated the main results of Study 1. Here again, the focus on women's physical appearance increases metadehumanization and dehumanization of the perpetrator, which in turn decrease women's motivation to interact with their interlocutor. This study also investigated the moderating effect of enjoyment of sexualization and trait self-objectification in the relationship between focus on physical appearance and metadehumanization. Indeed, we expected that the negative effect of sexual objectification on metadehumanization should be stronger among women with low levels of enjoyment of sexualization (Hypothesis 5) and trait self-objectification (Hypothesis 7). The results showed that neither trait self-objectification nor enjoyment of sexualization moderated the effect of focus on physical appearance on metadehumanization. The second moderation hypothesis suggested that in the focus on physical appearance condition, participants with low levels of enjoyment of sexualization (Hypothesis 6) and trait self-objectification (Hypothesis 8) should report lower levels of interaction motivation compared to participants with high levels of enjoyment of sexualization and trait self-objectification. We did not find any effect of trait self-objectification in the relationship between focus on physical appearance and interaction motivation. However, as predicted, enjoyment of sexualization moderated the relationship between focus on physical appearance and interaction motivation. Specifically, the less participants enjoy being sexualized, the more the focus on physical appearance decrease their motivation to interact with the perpetrator (see Figure 3).

By further examining the data, the results showed that enjoyment of sexualization also moderated the effect of perpetrator dehumanization on interaction motivation, in such a way that the link between perpetrator dehumanization and interaction motivation is stronger for women with low levels of ES than for women with high levels of ES.

4. Studies 3a and 3b

In Studies 3a and 3b, we decided to examine the degree to which women engage in pro-social behaviors (rather than interaction motivation) following a focus on their physical appearance. As in Studies 1 and 2, we tested the mediating role of metadehumanization and dehumanization of the perpetrator in the relationship between sexual objectification and pro-social behaviors. We decided to investigate pro-social behaviors because previous studies already showed that dehumanization decreases pro-social and helping behaviors towards dehumanized victims (e.g., Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). For instance, Andrighetto, Baldissarri, Lattanzio, Loughnan, and Volpato (2014), showed that participants are less willing to help earthquake victims when they dehumanized them. In particular, the authors showed that the denial of uniquely human characteristics to Haitians and the denial of human nature characteristics to Japanese decreases participants' intention to help them following earthquake (see also, Cuddy, Rock, & Norton, 2007). Hence, the investigation of pro-social behaviors instead of interaction motivation following

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perpetrator dehumanization seems relevant considering previous research findings on the consequences of dehumanization.

The first two hypotheses remained the same but Hypotheses 3 and 4 were adapted to this new variable. Precisely, we hypothesized that interpersonal SO decreases participants' pro-social behaviors directed toward the perpetrator (Hypothesis 3), and that the decrease in pro-social behaviors following interpersonal SO should, again, be explained by the sequential effect of metadehumanization and perpetrator dehumanization (Hypothesis 4). Studies 3a and 3b also aims to replicate the moderating role of enjoyment of sexualization highlighted in Study 2. Particularly, we tried to replicate the result showing that participants' levels of enjoyment of sexualization moderates the relationship between the focus on physical appearance and pro-social behaviors (Hypothesis 6). Here again, the design and hypotheses were pre-registered through the following links: https://osf.io/fwg2x/?view_only=ec1603294a6c400aa6cf1928b82a81e5 (Study 3a), https://osf.io/c23hj/?view_only=4190e76ba79643b6892f1e61842fba54 (Study 3b).

4.1 Method

Participants

Expecting an effect size equal to 0.37 and in order to provide 95% of statistical power, G*Power encourage us to recruit at least 97 participants. However, in as much as we plan to test serial mediation hypothesis, we decided to recruit more participants. For Study 3a, we recruited 194 female participants on FouleFactory, a French crowdsourcing platform. However, because some of them failed at attentional check questions, we had to discard 13 participants from analyses, leaving a final sample of 181 participants. Their ages ranged from 22 to 78 years old ($M = 41.43$, $SD = 11.66$). For Study 3b, we recruited 122 female participants through social networks. As for Study 3a, we deleted 8 participants due to failure at attentional check questions, which leaves 114 participants in the final sample. Their ages ranged from 18 to 59 years old ($M = 25.25$, $SD = 7.67$). In both studies, participants were randomly assigned to each condition (Study 3a: $n = 93$ in the objectification condition, $n = 88$ in the control condition; Study 3b: $n = 63$ in the objectification condition, $n = 51$ in the control condition).

Procedure and Materials

As in Study 2, we assessed enjoyment of sexualization at the beginning of the Studies, using the same scale and instructions. With the exception of pro-social behaviors' measure which replaces the measure of interaction motivation, the survey flows were identical to other studies and proceeded as follows: enjoyment of sexualization, manipulation phase, metadehumanization, perpetrator (de)humanization, pro-social behaviors, manipulation

check and finally demographic questions⁹. Here again, the studies were presented to participants as an investigation of “Impression formation processes in virtual meetings”.

Pro-social behaviors were assessed through a task similar to the “Hangman game”. This task has already been used in Klein’s (2003) studies and was described as an interfering task in order to know if impression formations were stable over time. Participants had to select among four possible hints the combination of apparent and hidden letters from which the perpetrator should guess a given word. A pre-test helped us to select four hints that significantly varied in difficulty. For instance, participants had to select the combination of apparent and hidden letters from which they would like Thomas to guess the word BIOLOGIE (BIOLOGY in English). In this case, the four possible hints (here presented from the easiest to the hardest, according to the pre-test’s results) were: _ I O L _ _ _ E; B I O _ _ _ _ E; B _ _ _ _ G I E; _ I O _ O _ I _ . For each of the 10 items, the hints were presented in a random order.

4.2 Results

4.2.1 Preliminary Analyses

Following what was done in previous studies, we created two indexes for metadehumanization¹⁰ and perpetrator dehumanization¹¹ scales as a function of principal component analyses’ results¹².

Table 3 and Table 4 display descriptive statistics and correlations between variables, for Studies 3a and 3b, respectively. Unexpectedly, pro-social behaviors did not correlate with metadehumanization and perpetrator dehumanization.

⁹ As indicated in the pre-registered protocol, we also measured perpetrator dehumanization at time T2 (after pro-social behaviors’ measure) in order to see if the expression of pro-social behaviors change the way participants see the perpetrator of sexual objectification.

¹⁰ Principal component analyses revealed the expected one-factor solution for items assessing metadehumanization. This single factor solution explained 68.16% and 63.48% of variance for Study 3a and Study 3b, respectively. Factors loadings ranged from .880 to .636 ($\alpha = .96$) in Study 3a, and from .884 to .668 ($\alpha = .95$) in Study 3b;

¹¹ For perpetrator (de)humanization scales, we decided to exclude one item because of their poor loading on the single-factor solution in Studies 3a and 3b. Without this item, the one-factor structure explained 62.94% of variance in Study 3a and 60.18% of variance in Study 3b (factor loadings ranged from .873 to .438 ($\alpha = .94$) in Study 3a and from .868 to .642 in Study 3b ($\alpha = .93$));

¹² As in Studies 1 and 2, we performed exploratory factorial analyses with all metadehumanization and perpetrator dehumanization items to ensure that we found two factors related to metadehumanization and perpetrator dehumanization in both Studies. As expected, we found two factors. One factor related to metadehumanization and explained 57.41% (factor loadings ranged from .931 to .552) and 53.71% (factor loadings ranged from .915 to .482) of variance for Studies 3a and 3b, respectively. The second factor related to perpetrator dehumanization and explained 9.29% (factor loadings ranged from .870 to .454) and 9.19% (factor loadings ranged from .946 to .573) of variance for Studies 3a and 3b, respectively.

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Table 3. Descriptive statistics and correlations among variables in Study 3a

	Sexual Objectification	Control	1.	2.	3.	4.
1. Metadehumanization	3.20 (1.21)	1.90 (.94)	(.96)	.72**	.07	.03
2. Perpetrator dehumanization	4.22 (1.01)	3.22 (.83)		(.94)	-.05	-.09
3. Pro-social behaviors	2.48 (.85)	2.47 (.89)			(.92)	.04
4. Enjoyment of sexualization	3.71 (1.17)	3.80 (1.04)				(.86)

Note. $N = 181$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

Table 4. Descriptive statistics and correlations among variables in Study 3b

	Sexual Objectification	Control	1.	2.	3.	4.
1. Metadehumanization	3.39 (1.22)	2.09 (.84)	(.95)	.64**	.17	.01
2. Perpetrator dehumanization	4.55 (.97)	3.13 (.86)		(.93)	.05	-.07
3. Pro-social behaviors	2.72 (.83)	2.39 (.78)			(.90)	-.15
4. Enjoyment of sexualization	4.01 (.89)	4.00 (.77)				(.71)

Note. $N = 114$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

4.2.2 Main Analyses

Manipulation check. As in previous studies, our manipulation of sexual objectification was successful, participants indicated that Thomas place more importance on their physical appearance in the experimental condition (Study 3a: $M = 5.92$, $SD = .97$; Study 3b: $M = 6.09$, $SD = 1.00$) as compared to the control condition (Study 3a: $M = 3.60$, $SD = .96$; Study 3b: $M = 3.81$, $SD = 1.14$), $b = 2.31$, $t = 16.05$, $p < .001$ (Study 3a) $b = 2.28$, $t = 11.05$, $p < .001$ (Study 3b).

Metadehumanization. Replicating the results of the first two studies, participants reported higher levels of metadehumanization in the focus on physical appearance condition (Study 3a: $M = 3.20$, $SD = 1.21$; Study 3b: $M = 3.39$, $SD = 1.22$) compared to the control condition (Study 3a: $M = 1.90$, $SD = .94$; Study 3b: $M = 2.09$, $SD = .84$), $b = 1.29$, $t = 8.01$, $p < .001$, $\eta^2_p = .26$ (Study 3a), $b = 1.30$, $t = 6.44$, $p < .001$, $\eta^2_p = .27$ (Study 3b), which is consistent with Hypothesis 1.

Perpetrator dehumanization. Here again, as predicted by Hypothesis 2, participants reported higher levels of perpetrator dehumanization when they were assigned to the focus on physical appearance condition (Study 3a: $M = 4.22$, $SD = 1.01$; Study 3b: $M = 4.55$, $SD = .97$) compared to the control condition (Study 3a: $M = 3.22$, $SD = .83$; Study 3b: $M = 3.13$, $SD = .86$), $b = 1.00$, $t = 7.22$, $p < .001$, $\eta^2_p = .22$ (Study 3a), $b = 1.41$, $t = 8.05$, $p < .001$, $\eta^2_p = .36$ (Study 3b). We decided to run a T-test in order to determine if the means of both conditions significantly differed from the mean's scale (i.e., 4). Results revealed that the means of perpetrator dehumanization were significantly higher than 4 in the focus on

physical appearance condition for Study 3a, $t(92) = 2.17, p = .032$ and Study 3b, $t(62) = 4.46, p < .001$. Whereas, the means of perpetrator dehumanization were significantly lower than 4 in the control condition for Study 3a, $t(87) = -8.67, p < .001$ and Study 3b, $t(50) = -7.10, p < .001$. Consistent with the results of Study 2, one could conclude that participants in the experimental condition significantly dehumanized Thomas, whereas they significantly humanized Thomas in the control condition.

Pro-social behaviors. For these Studies, Hypothesis 3 stated that the focus on physical appearance would decrease pro-social behaviors compared to the control condition. Neither the results of Study 3a nor the results of Study 3b supported such hypothesis. In Study 3a, pro-social behaviors did not differ between the two conditions, $b = 0.009, t = .06, p = .946$. Unexpectedly, in Study 3b, participants reported higher levels of pro-social behaviors in the experimental condition ($M = 2.72, SD = .83$) compared to the control one ($M = 2.39, SD = .78$), $b = 0.33, t = 2.12, p = .036, \eta^2_p = .03$. In other words, participants chose simpler combinations of apparent and hidden letters when they were sexually objectified than when no focus on physical appearance was present.

4.2.3 Mediations and Moderations Analyses

For both Studies 3a and 3b, the results of bootstrap analyses did not support the serial mediation hypothesis according to which both metadehumanization and perpetrator dehumanization mediate the relationship between the focus on physical appearance and pro-social behaviors (Hypothesis 4), Study 3a: indirect effect = -0.12 , 95% CI $[-0.26, 0.001]$; Study 3b: indirect effect = -0.08 , 95% CI $[-0.21, 0.02]$.

Then, Hypothesis 6, which expects a moderating role of enjoyment of sexualization in the relationship between focus on physical appearance and pro-social behaviors, was tested using bootstrap analyses (Model 1). In Study 3a, enjoyment of sexualization did not moderate the effect of focus on physical appearance on pro-social behaviors, $b = 0.03, t = .28, p = .77$, which did not replicate the results of Study 2. However, as showed in Figure 4, a moderating role of enjoyment of sexualization emerged in Study 3b, $b = -0.36, t = -2.39, p = .018$. Unexpectedly, participants with low levels of enjoyment of sexualization expressed higher levels of pro-social behaviors in the experimental condition compared to the control condition, $b = 0.69, t = 3.25, p = .001$, while pro-social behaviors did not vary for participants with high levels of enjoyment of sexualization, $b = -0.04, t = -.19, p = .84$. In as much as we expected that participants with low levels of ESS should report lower levels of pro-social behaviors in the experimental condition, such results did not support our hypothesis. This unexpected result will be discussed in the general discussion.

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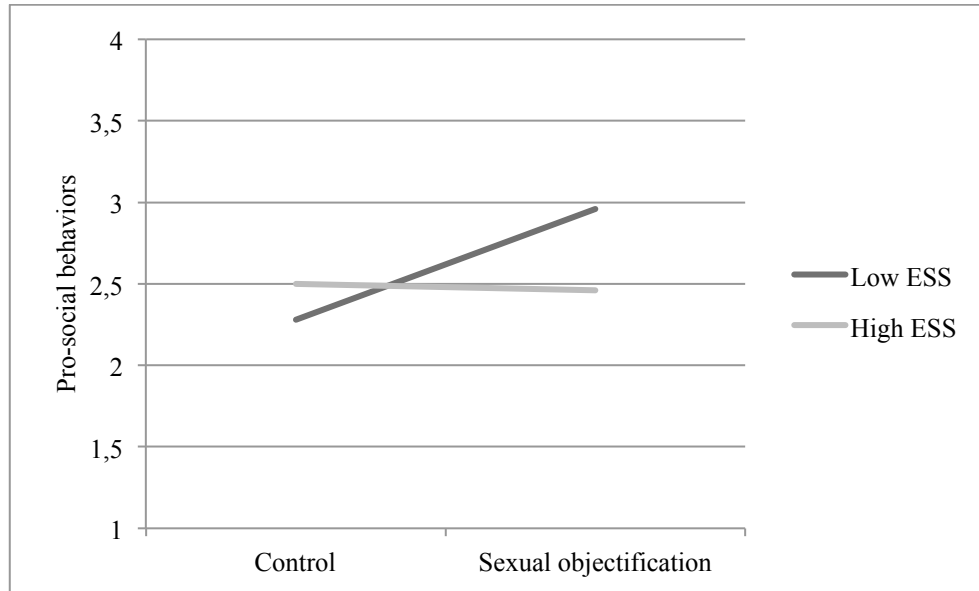


Figure 4. The effect of conditions on pro-social behaviors as a function of enjoyment of sexualization (Study 3b)

4.3 Discussion

Studies 3a and 3b replicate the main results of the first two studies. That is, when participants were confronted with a focus on their physical appearance, they experienced being viewed in a dehumanized way by the SO perpetrator and dehumanized the perpetrator of SO. These results corroborate studies that gave evidence for a tendency to reciprocate (negative) meta-perceptions, and particularly metadehumanization, in interpersonal contexts (Kteily et al., 2016; Landry et al., 2021).

Yet, the effect of SO on pro-social behaviors varied between Studies 3a and 3b. In Study 3a, interpersonal SO did not have any impact on pro-social behaviors. In contrast, in Study 3b, results were in the opposite direction to our hypotheses. Specifically, analyses revealed that sexually objectified participants expressed higher levels of pro-social behaviors (i.e., choose simpler combination of apparent and hidden letters) compared to participants in the control condition. This effect was particularly strong for participants low in enjoyment of sexualization.

We also failed to highlight the mediating role of metadehumanization and dehumanization of the perpetrator in the relationship between interpersonal SO and pro-social behaviors. Such unexpected results may relate to the fact that pro-social behaviors are not impacted by SO experiences and dehumanization processes (i.e., metadehumanization and perpetrator dehumanization). However, it is also possible that we

did not use the appropriate measure to assess pro-social behaviors. This second possibility is addressed in the general discussion below.

5. General Discussion

The present paper had two main goals. First, we aimed to replicate research findings showing that sexually objectified women report higher levels of metadehumanization (Chevallereau, Maurage, et al., 2021; Chevallereau, Stinglhamber, et al., 2021; Moor et al., 2013). Second, the present paper extended previous research findings by investigating the interpersonal consequences of metadehumanization following interpersonal sexual objectification.

Results of the four studies replicated previous research findings. Indeed, participants reported higher levels of metadehumanization when they were sexually objectified as compared to the control condition. Kteily et al. (2016) and Landry et al. (2021) showed that when individuals report metadehumanization, they tend to reciprocate such dehumanizing perceptions to their perpetrators. This reciprocation has in turn damaging consequences for interpersonal relationships (see also, Andrichetto et al., 2016). We thus decided to investigate reciprocal dehumanization (i.e., perpetrator dehumanization) and interpersonal consequences of metadehumanization following interpersonal sexual objectification. Our research findings provided supplementary evidence for the occurrence of reciprocal dehumanization following metadehumanization. More precisely, we found that participants dehumanized their perpetrator following interpersonal sexual objectification, but also, a positive relationship between metadehumanization and perpetrator dehumanization. While this relationship is correlational in our studies, the antecedence of metadehumanization on perpetrator dehumanization (i.e. reciprocal dehumanization) has already been demonstrated in previous studies (i.e., Kteily et al., 2016; Landry et al., 2021), it is thus highly probable that perpetrator dehumanization appeared in response to the feeling of being dehumanized by others (i.e., metadehumanization). This provides confidence in the reciprocal nature of metadehumanization.

Turning to behavioral tendencies related to interpersonal outcomes, Studies 1-2 and Studies 3a-3b examined different outcomes (i.e., interaction motivation and pro-social behaviors). In Studies 1 and 2, results showed that being sexualized decreased women's motivation to interact with the perpetrator. Such results corroborated studies showing that sexually objectified women are less motivated to interact with their perpetrator (Teng et al., 2015) and show signs of social withdrawal (Sáez et al., 2020; Saguy et al., 2010). Interestingly, our results highlighted new serial mediating processes that probably explained the decrease in women's motivation to interact with their perpetrator. As expected, both metadehumanization and perpetrator dehumanization following interpersonal SO explained the decrease in women's motivation to interact with the perpetrator. Consistently with previous research findings, expecting to be viewed in a negative way lead people to avoid interactions with others (e.g., Vorauer et al., 1998).

Studies 3a and 3b then investigated pro-social behaviors. In line with previous results, we hypothesized a negative effect of SO on pro-social behaviors. Hence, we hypothesized that being sexually objectified should reduce women's expression of pro-social behaviors towards the perpetrator. In Study 3a, we did not find any effect of SO on pro-social behaviors. Even more surprisingly, Study 3b showed that sexually objectified participants expressed higher levels of pro-social behaviors toward the perpetrator compared to participants in the control condition. Moreover, our results did not provide evidence for a mediating role of metadehumanization and perpetrator dehumanization, which both appeared to be unrelated to pro-social behaviors in Studies 3a-3b. The unexpected increase in pro-social behaviors highlighted in Study 3b might be explained by the fact that women previously dehumanized their perpetrators, attributing them less human characteristics such as refinement, ability to integrate new ideas, rationality, logic and maturity. Broadly speaking, the denial of perpetrator's high-order cognitive processes might lead to the idea that the perpetrator did not have the skills to guess words from the most difficult hints. Women thus maybe chose easier combinations of apparent and hidden letters, in line with the perceptions they had about their perpetrator. In this way, the measure employed to assess pro-social behaviors may be inappropriate to the present context. It could thus be preferable to employ pro-social behaviors measures that are not related to the perpetrator's high order cognitive processes. For instance, one option would be to assess pro-social behaviors through the degree to which participants help the other person to pick up the pencils, after that person have "accidentally" spilled a cup of pencils onto the floor (Twenge, Baumeister, DeWall, Ciarocco, & Bartels 2007, Study 3; see also, Dovidio & Morris, 1975). In this case, the more participants help the other to collect a large number of pencils, the more they express prosociality. This way of measuring pro-social behaviors seems preferable to the one used in Studies 3a and 3b because participants' help provided towards the perpetrator is not influenced by dehumanization of him. This measure could be implemented in laboratory settings with a confederate trained to play the role of women's interlocutor.

5.1 Limitations and Future Research

One of the main goals of the present paper was to study the formation of metadehumanization at interpersonal levels following experiences of sexual objectification. Nevertheless, the literature on meta-perceptions states that people may form either interpersonal or intergroup meta-perceptions as a function of how people see themselves and others (Frey & Tropp, 2006). Specifically, victims could see themselves either as individuals or as group members and perpetrators could be seen either as individuals or as group members by the victims. Broadly speaking, the salience of victims' and perpetrators' group memberships might determine whether intergroup or interpersonal meta-perceptions are formed (Frey & Tropp, 2006). As a specific form of meta-perceptions, metadehumanization probably relies on similar processes. That is, the activation of victims' and perpetrator's group membership would induce the formation of intergroup metadehumanization, whereas, interpersonal metadehumanization are formed when victims

see themselves and others as individuals. In the present paper, we did not voluntarily activate the group identity of the two interlocutors. Nonetheless, it is possible that participants perceive that they were the victims of sexual objectification due to their group affiliation, which could thus activate their group membership and the idea that they are dehumanized because they are women. Moreover, participants received almost no other information on the perpetrator than their aspirations for romantic relationships and the questions they selected. In this way, participants may have perceived their interaction partners as a representative of the male category. Hence, it is probable that in the context of the present studies, participants formed intergroup metadehumanization rather than interpersonal metadehumanization. Therefore, it could be interesting to examine the link between metadehumanization and perpetrator dehumanization in interpersonal situations, in which, people have more information on their perpetrator, which could facilitate individualization and thus the formation of metadehumanization at interpersonal levels.

Future studies could also examine the effects of sexual objectification on dehumanization processes when the focus on physical appearance is expressed through appearance-based compliments. Indeed, it seems less intuitive to think that receiving an appreciation on one's physical appearance may trigger metadehumanization or "perpetrator" dehumanization. Nevertheless, many studies already showed that despite a positive effect of appearance-based compliments on participants' mood (e.g., Fea & Brannon, 2006; Kahalon et al., 2018), negative consequences do occur. For instance, appearance compliments increased body surveillance (Calogero et al., 2009), body dissatisfaction (Calogero et al., 2009) and body shame (Tiggemann & Boundy, 2008). Thus, investigating the consequences of appearance-based compliments on dehumanizing processes and ensuing social interactions could be useful to know if even what looks like a positive interaction may induce negative effects for ensuing interactions.

Finally, in addition to manipulating the valence of interpersonal sexual objectification, future studies could take into account psychological intimacy with the perpetrator of sexual objectification (e.g., Lameiras-Fernández, Fiske, González Fernández, & Lopez, 2018). This variable might moderate the relationships between sexual objectification and metadehumanization but also the relationship between sexual objectification and other interpersonal variables (i.e., interaction motivation, avoidance, pro-social behaviors etc.).

5.2 Conclusion

The present paper provided supplementary evidence for the emergence of metadehumanization following interpersonal sexual objectification. However, we went a step further showing that sexual objectification also increased perpetrator dehumanization and decreased women's motivation to interact with him. Interestingly, the results of serial mediation analyses suggest that both metadehumanization and perpetrator dehumanization explained the decrease in women's motivation to interact with their perpetrator. Interestingly, pro-social behaviors did not appear to be impacted in the same way as interaction motivation. Nevertheless, future studies should enlarge the scope of these

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research findings through confirming such results with other measures of pro-social behaviors, but also through the investigation other interpersonal consequences.

Chapter 6

How the attributions of human characteristics to the self and to others relate as a function of social interactions' valence

Literature on dehumanization and social projection suggest that two different hypotheses can be formulated with regard to the attribution of human characteristics to the self and to others as a function of situations. Hence, the present Chapter investigates the attribution of human characteristics following an interaction in which participants were sexually objectified compared to a control interaction. In line with social projection literature, three of our four studies showed that the attribution of human characteristics to the self and to others negatively relates following sexually objectifying interaction but positively relates following a positive – or at least neutral – interaction. Research perspectives are then discussed.

How the attributions of human characteristics to the self and to others relate as a function of social interactions' valence

1. Introduction

Dehumanizing-related perceptions may take three different forms, that is, metadehumanization, self-dehumanization and dehumanization. While metadehumanization refers to people's perceptions of being perceived as a full human being by others (Demoulin et al., 2020; Kteily, Hodson, & Bruneau, 2016), self-dehumanization relates to people's self-perceptions about their own humanity, that is, the degree to which they attribute human characteristics to the self (Demoulin, Maurage, & Stinglhamber, 2021). Finally, dehumanization relates to people's perceptions about others' humanity. With regards to how these perceptions relate to one another, scholars mainly investigated how metadehumanization relates with self-dehumanization (e.g., Baldissarri & Andrighetto, 2021) and dehumanization (e.g., Kteily et al., 2016; Landry, Ihm, & Schooler, 2021). In particular, research found that when people feel dehumanized by others (i.e., metadehumanization) they are likely to see themselves (e.g., Baldissarri & Andrighetto, 2021) and others, namely perpetrators (e.g., Kteily et al., 2016; Landry et al., 2021), as less than human. Yet, to date, studies examining the relationship between self-dehumanization and dehumanization remain scarce. Hence, the present research aims at investigating the attribution of human characteristics to the self and to others in different contexts.

1.1 The Attribution of Human Characteristics to the Self

With the growing interest in studying dehumanization processes, scholars started to study the attribution of human characteristics to the self, that is, self-humanization. Haslam, Bain, Douge, Lee, and Bastian (2005) found that people perceive themselves as more human than others. Specifically, the authors showed that people attribute higher levels of human nature traits but similar levels of human uniqueness traits to the self than to others. This effect was highlighted independently of a self-enhancement effect (Haslam et al., 2005).

Yet, instances of self-dehumanization have also been identified. For example, self-dehumanization has been investigated following interpersonal maltreatments, whether committed against oneself by others or by oneself towards others. First, research showed that when people are targeted by interpersonal maltreatment, they then self-dehumanize. For instance, intragroup disrespect (Renger, Mommert, Renger, & Simon, 2016) and social ostracism (Bastian & Haslam, 2010) lead people to self-attribute lower levels of human traits to the self. Moreover, when participants are assigned to low-power conditions (vs.

high-power conditions), they report higher levels of self-dehumanization (Yang, Jin, He, Fan, & Zhu, 2015). Finally, Loughnan, Baldissarri, Spaccatini, and Elder (2017) showed that objectification in the workplace and sexual objectification of women also trigger self-dehumanization. That is, when women report situations in which someone else focuses on their physical appearance (i.e., interpersonal sexual objectification), they self-attribute lower levels of human traits (Loughnan et al., 2017, Study 1).

Second, research showed that self-dehumanization also occurs when people themselves perpetrate interpersonal maltreatment towards others. For instance, when people are perpetrators of social ostracism, they then report lower levels of self-humanity (Bastian et al., 2013). Similarly, Kouchaki, Dobson, Waytz, and Kteily (2018) showed that people feel less human when they behave in an immoral way (e.g., lying, cheating etc.). Bastian, Jetten, and Radke (2012) assessed both self-dehumanization and dehumanization and showed that when participants played violent video games and thus displayed aggressive behaviors against their co-player, they then self-dehumanize and dehumanize their co-player (Study 1). Unfortunately for the purpose of the present paper, these authors failed to report how these attributions intercorrelate with one another. Yet, these research findings are in line with Bastian and Haslam's (2010) work showing that socially excluded participants not only self-dehumanize but dehumanize their perpetrators as well. Hence, this suggests that self-dehumanization and (perpetrators') dehumanization are likely to be positively associated following interpersonal maltreatment events.

Taken together, these research findings examined situations leading people to deny human characteristics to them and suggest a positive association between self-dehumanization and dehumanization. Yet, research on social projection suggests an alternative possibility.

1.2 The Role of Social Projection in the Attribution of Characteristics to Other People

People frequently infer others' mental states such as intentions, beliefs, desires and feelings. This inference process is called mind perception (Ames & Mason, 2012). Many processes are involved in the formation of such assumptions. For instance, Ames (2004) proposed a "mind reader's tool kit" in which he presented stereotyping and social projection as strategies through which people infer others' mental states. Stereotyping refers to inferences through which people infer others' characteristics on the basis of social stereotypes (e.g., Sagar & Schofield, 1980). In a different way, social projection refers to inferences through which people expect others to be similar to themselves, and thus tend to infer others' characteristics on the basis on their own characteristics (e.g., Marks & Miller, 1987; Robbins & Krueger, 2005). In the field of mind perception, social projection has been the subject of numerous investigations. In particular, scholars aimed to determine the extent to which people rely on social projection to infer others' mental states as a function of perceivers and targets' characteristics as well as of situational factors.

Research suggests that social projection is an everyday strategy that occurs in many situations (Clement & Krueger, 2000; Kenny & Acitelli, 2001; Schul & Vinokur, 2000). Nevertheless, it has also been found that the use of social projection is undermined under certain circumstances. For instance, research findings showed that people rely less on social projection in situations in which they perceive a low similarity between the self and targets (Ames, 2004; Ames, Weber, & Zou, 2012). In line with this idea, scholars also found that people rely less on social projection when they have to infer outgroup (vs. ingroup) members' mental states (Clement & Krueger, 2002). Another situational characteristic that impacts social projection is interaction valence. For instance, Toma, Yzerbyt, and Corneille (2010) found that social projection is stronger when people have positive relationships with others as compared to negative ones. More specifically, these authors showed that participants projected more self-attributed traits to an unknown target person in situations of cooperation as compared to situations of competition (for similar results in intergroup contexts, see Riketta & Sacramento, 2008).

1.3 Dehumanization and Self-Dehumanization When Facing Sexual Objectification

All in all, the literature on dehumanization and social projection reviewed above suggest that two alternative hypotheses might be tested. First, the attributions of human characteristics to the self and to others might both be impaired following interpersonal maltreatment (Bastian & Haslam, 2010; Bastian et al., 2012). According to this theoretical background, one would thus expect a positive correlation between attributions of human characteristics to the self and to others under conditions of interpersonal maltreatment. Alternatively, social projection research suggests that the attributions of characteristics to the self and to others may vary as a function of interaction valence (i.e., positive vs. negative) (Riketta & Sacramento, 2008; Toma et al., 2010). In this context, the attributions of characteristics to the self and to others are positively correlated when the interaction is positive or cooperative and negatively correlated under negative, competitive circumstances.

In the present research project, we investigate the relationship between dehumanization and self-dehumanization in the context of interpersonal sexual objectification. According to objectification theory (Fredrickson & Roberts, 1997), women experience sexual objectification when they are treated, valued and used as a function of their physical appearance and bodies. In a general way, the focus on women's physical appearance may appear either through media encounters or through social and interpersonal encounters. Mainstream media expose people to the sexual objectification through, for instance, sexualized portrayals of women in advertisement (for a review, see Ward, 2016). In interpersonal contexts, sexual objectification occurs when women are personally targeted by sexually objectifying behaviors, such as gazing, comments or whistles. Hence, the later form of sexual objectification may be considered as a form of interpersonal maltreatment as the various facets of a person's personality are denied which makes it a negative experience.

1.4 Overview of the Studies

In line with the reviewed literature, we hypothesized that social projection would act as a mechanism in the determination of an interlocutor's human characteristics. Thus, when women face a situation of interpersonal sexual objectification, social projection should be reduced. Indeed, sexual objectification can be considered as a negative interaction and negative interactions tend to diminish social projection tendencies. In other words, the attribution of human characteristics to the self and to others should be negatively linked in interpersonal sexual objectification experiences, whereas, in positive –or at least neutral– interactions, self-dehumanization and dehumanization should be positively linked due to the classic social projection effect¹.

2. The Studies

2.1 Method

Participants

Four samples were composed of 84, 185, 181 and 114 female participants ($M = 34.64$, $SD = 11.37$; $M = 36.30$, $SD = 11.60$; $M = 41.43$, $SD = 11.66$; $M = 25.25$, $SD = 7.67$) for Studies 1a, 1b, 1c, and 1d, respectively. Participants were randomly assigned to either the sexual objectification or control condition. Further details regarding the sample are presented in the Chapter 5.

Procedure and Materials

We manipulated the focus on physical appearance the same way of studies presented in Chapters 4 and 5 of the present thesis. That is, participants were assigned either to the sexual objectification condition (in which Thomas asked questions related to participants' physical appearance) or to the control condition (in which Thomas asked questions related to diverse domains). Following the manipulation, participants completed both (de)humanization and self-(de)humanization measures.

Dehumanization. In order to avoid a potential reluctance of our participants to report dehumanization of Thomas we used items formulated in a positive way. Hence, we assessed Thomas' humanization with a total of 12 items: six items referred to the animalistic dimension of (de)humanization (e.g., "I think that Thomas is someone civilized") and six items referred to mechanistic dimension of (de)humanization (e.g., "I

¹ For the first study of the present Chapter, we initially hypothesized and pre-registered a mediation model according to which dehumanization would reduce self-dehumanization independently of condition. Results of this first study did not provide support for this mediation hypothesis. As a consequence, we turned to the social projection literature, hypothesized and pre-registered the moderating effect. For coherence purposes, in the present Chapter, we solely report this latter hypothesis according to which conditions moderate the relationship between self-dehumanization and dehumanization.

think that Thomas is emotionally responsive"). For each item, participants had to indicate their level of agreement using a 7-points Likert scale ranging from 1 ("Strongly disagree") to 7 ("Strongly agree"). In order to assess dehumanization rather than humanization, all items of this scale were reversed and collapsed to create one index representing both animalistic and mechanistic dehumanization.

Self-dehumanization. For the same reasons, we assessed self-humanization rather than self-dehumanization and used the same (adapted) items as the ones used to assess (de)humanization. Thus, a total of 12 items assessed both animalistic (e.g., "I think that I am someone civilized") and mechanistic (e.g., "I think that I am emotionally responsive") self-(de)humanization. As for the (de)humanization scale, the items of this scale were reversed for statistical analyses to report self-dehumanization rather than self-humanization.

2.2 Results and Discussion

2.2.1 Preliminary Analyses

For each of the studies, we ran principal component analyses on (de)humanization² and self-(de)humanization³ scales to determine the presence of the two dimensions of dehumanization (i.e., animalistic and mechanistic) in the scales constructed on the basis of the dual model of dehumanization⁴ (Haslam, 2006). Insofar as items of both scales loaded on a one-factor structure solution, we merged items related to animalistic and mechanistic dimensions to construct two indices representative of dehumanization and self-dehumanization.

² For the scales assessing dehumanization, the principal component analyses indicated that the two dimensions did not emerge in any of the four studies presented here. That is, all items loaded on a single factor solution explaining 67.99% (Study 1a), 68.95% (Study 1b), 62.94% (Study 1c) and 60.18% (Study 1d) of variance for each of the four studies. Factor loadings ranged from .914 to .589, .925 to .416, .873 to .438, and .868 to .642, for Studies 1a, 1b, 1c, and 1d, respectively. This scale had a good internal consistency across studies ($\alpha = .95$ for Studies 1a and 1b; $\alpha = .94$ for Study 1c; $\alpha = .93$ for Study 1d);

³ Principal component analyses were also conducted on items assessing self-humanization. Here again, the two dimensions of dehumanization did not emerge in any of the four studies. However, for Studies 1b, 1c, and 1d we had to exclude one item because of a poor loading on the one factor structure solution. In spite of this, items of self-dehumanization loaded on a single factor solution explaining 44.22% (Study 1a), 43.64% (Study 1b), 43.09% (Study 1c) and 32.49% (Study 1d) of variance for each of the four studies. Factor loadings ranged from .765 to .403, .730 to .563, .779 to .368, and .697 to .470, for Studies 1a, 1b, 1c, and 1d, respectively. This scale had a correct internal consistency across studies ($\alpha = .87$ for Study 1a; $\alpha = .86$ for Study 1b; $\alpha = .85$ for Study 1c; $\alpha = .77$ for Study 1d);

⁴ We performed exploratory factorial analyses with all perpetrator dehumanization and self-dehumanization items to ensure that we found two factors related to these measures. As expected, a first factor related to perpetrator dehumanization items explaining 34.58% (Study 1a), 36.14% (Study 1b), 33.20% (Study 1c) and 34.38% (Study 1d) of variance (factors loading ranged from .913 to .584, .926 to .418, .872 to .432, .907 to .721 for Studies 1a, 1b, 1c, and 1d, respectively). The second factor related to self-dehumanization items, explaining 21.80% (Study 1a), 20.98% (Study 1b), 20.31% (Study 1c) and 16.05% (Study 1d) of variance (factors loading ranged from .764 to .399, .736 to .558, .779 to .358, to .686 to .463 for Studies 1a, 1b, 1c, and 1d, respectively).

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The correlations between self-dehumanization and dehumanization of Thomas are presented in Table 1. One can notice that self-dehumanization and dehumanization positively correlate in the control condition whereas, with the exception of Study 1c, self-dehumanization and dehumanization negatively correlate in the experimental condition.

Table 1. Correlations between self-dehumanization and dehumanization according to conditions and Studies

	Study 1a		Study 1b		Study 1c		Study 1d	
	SO	Control	SO	Control	SO	Control	SO	Control
dehumanization self-dehumanization	-.482**	.226	-.201*	.231*	.178	.191	-.228	.427**

Note. SO = Sexual objectification condition. Control = Control condition. * $p < .05$. ** $p < .01$.

2.2.2 Main Analyses

We tested the moderation hypothesis according to which the relationship between self- and dehumanization varies as a function of conditions. This moderation model was tested using macro PROCESS (Model 1; Hayes, 2013) in which we entered dehumanization as a predictor (X), self-dehumanization as a criterion (Y), and condition as a moderator (M). As expected, dehumanization interacted with conditions in Studies 1a, $b = -0.47$, $t = -3.20$, $p = .001$, 1b, $b = -0.36$, $t = -2.98$, $p = .003$ and 1d, $b = -0.40$, $t = -3.42$, $p < .001$.

Although sometimes marginally significant, the results of Studies 1a, 1b, and 1d showed that the relationship between self-dehumanization and dehumanization was positive in the control condition ($b = 0.17$, $t = 1.68$, $p = .09$, $b = 0.20$, $t = 2.41$, $p = .01$, $b = 0.25$, $t = 2.74$, $p = .007$, respectively). By contrast, in the sexual objectification condition, the link between self-dehumanization and dehumanization was negative in Studies 1a, 1b, and 1d ($b = -0.29$, $t = -2.87$, $p = .005$; $b = -0.15$, $t = -1.81$, $p = .07$, $b = -0.15$, $t = -2.04$, $p = .04$, respectively).

Unexpectedly, Study 1c did not provide support for the moderation model. Indeed, results showed that the relationship between self-dehumanization and dehumanization did not vary between conditions, $b = -0.02$, $t = -.20$, $p = .83$. Although marginal, this relationship is positive in both conditions ($b = 0.11$, $t = 1.80$, $p = .07$, $b = 0.14$, $t = 1.71$, $p = .08$ for the sexual objectification and control conditions, respectively).

3. General Discussion

The results of Studies 1a, 1b and 1d bring an interesting perspective concerning the relationships between self-dehumanization and dehumanization. Specifically, these studies showed that self-dehumanization and dehumanization positively relate under normal circumstances, whereas, we observed a negative relationship between these two variables in

conditions of interpersonal sexual objectification. Such results are consistent with studies on social projection showing that positive interactions increase the projection of ones' own characteristics on others (i.e., social projection) compared to the negative ones (Toma et al., 2010; see also, Riketta & Sacramento, 2008). We thus expend such results to the field dehumanizing-related perceptions. Unexpectedly, Study 1c did not support such results.

3.1 Limitations and Future Research

Current research already showed that situations of interpersonal sexual objectification increase both metadehumanization and dehumanization of others, namely perpetrators (Chevallereau, Stinglhamber, Maurage, & Demoulin, 2021; Chevallereau, Maurage, Stinglhamber, & Demoulin, 2021). Nevertheless, the present paper adds to this literature by highlighting that the attribution of human characteristics to the self and to interlocutors negatively relate in interpersonal sexual objectification condition. Hence, dehumanizing-related perceptions seem to be all connected in the context of interpersonal sexual objectification. Future research could thus aim to replicate the evidenced pathways in the context of sexual objectification experiences. In particular, it could be interesting to replicate in the same study the positive effect of sexual objectification experiences on metadehumanization and perpetrator dehumanization as well as the negative relationship between self-dehumanization and perpetrator dehumanization in the context of interpersonal sexual objectification. Nevertheless, the relationship between self-dehumanization and dehumanization should also be investigated when people are confronted to other negative interactions such interpersonal maltreatment compared to positive and/or neutral interactions. For instance, one should expect that, following intragroup disrespect experiences (vs. high respect experiences), the attribution of human characteristics to the self and to disrespecting interlocutor should correlate negatively (vs. positively).

The present research findings according to which self-dehumanization and dehumanization negatively correlate in situations of interpersonal sexual objectification appear to be inconsistent with previous studies. Indeed, as stated in the introduction section, Bastian et al.'s (2012) studies showed that participants' own immoral behaviors increase both self-dehumanization and dehumanization of their co-player, against whom they previously displayed aggressive behaviors. In this case, self-dehumanization and dehumanization are both impaired in a negative situation (see also, Bastian & Haslam, 2010). One could speculate that, in the specific situations in which self-dehumanization and dehumanization are triggered due to people's own immoral behaviors, dehumanization may serve as a justification of their own (subsequent) negative actions towards others. Hence, consistently with Bastian and colleagues (2012), future research could hypothesize that the attribution of human characteristics to the self and to others should positively correlate when people initiate interpersonal maltreatments toward others. Nevertheless, in line with the present research findings, the relationship between self-dehumanization and

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dehumanization should be negative when people are victims of others' interpersonal maltreatments.

3.2 Conclusion

The studies of the present paper investigated for the first time the relationships between self-dehumanization and dehumanization. Research findings suggest that these variables negatively correlate in negative interactions but positively correlate in positive, or at least, neutral interactions. Nevertheless, such effect probably depends on other variables that remain to be investigated in future research. In particular, one could examine if the effect remains the same whether people are victims or perpetrators of interpersonal maltreatments.

Chapter 7

Sex-based and beauty-based objectification: Metadehumanization and emotional consequences among victims.

We investigated how two forms of objectification (i.e., sex- and beauty-based objectification) relate to metadehumanization (i.e., the perception of being dehumanized) and emotional consequences for victims. Capitalizing on previous research, we hypothesized that sex-based objectification would induce animalistic metadehumanization and that beauty-based objectification would induce mechanistic metadehumanization. Our four studies showed that sex-based objectification elicits stronger mechanistic metadehumanization than beauty-based objectification, which also elicits higher mechanistic metadehumanization than non-objectifying control condition. Unexpectedly, animalistic metadehumanization did not vary across conditions. These findings suggest that, consistent with the social metaphor, objectified women feel mechanistically dehumanized, independently of the objectification type faced. Sex- and beauty-based objectifications also elicit more anger but less sadness than the control condition. However, only sex-based objectification increases guilt feelings. The general discussion contrasts perpetrators' vision of objectified women to women's own experience of objectification.

Référence

Chevallereau, T., Maurage, P., Stinglhamber, F., & Demoulin, S. (2021). Sex-based and beauty-based objectification: Metadehumanization and emotional consequences among victims. *British Journal of Social Psychology*. doi:10.1111/bjso.12446

Sex-based and beauty-based objectification: Metadehumanization and emotional consequences among victims.

1. Introduction

Despite ongoing changes in the way women are perceived and treated, Western societies still put a strong focus on women's physical appearance (Ward, 2016). Such an attention on physical appearance conveys, among other consequences, a dehumanized vision of women. A recent study (Morris, Goldenberg, & Boyd, 2018) indeed showed that (1) when the focus is placed on women's general appearance and beauty, people perceive them as passive, unemotional, and non-agentic objects (i.e., express mechanistic dehumanization), and (2) when the focus is more specific and restricted to women's sexual body parts and functions, people perceive them as immoral, coarse, and instinctive animals (i.e., express animalistic dehumanization). These two visions are clear and distinct in observers' perspective, but we do not know how the victims, i.e. women, react to the differential focus placed in interpersonal interactions on their general beauty versus their sexual body parts. Here, we take such an endeavor and examine women's experiences of being dehumanized, i.e. metadehumanization (Kteily, Hodson, & Bruneau, 2016).

1.1 Dehumanized Perceptions and Appearance Focus

Dehumanization has received exponential attention in the last two decades (Haslam & Loughnan, 2014; Moradi, 2013). According to Haslam's framework (Haslam, 2006; Haslam & Loughnan, 2014), humanness encompasses two dimensions: Human Nature (HN) and Human Uniqueness (HU). Mechanistic dehumanization occurs when people are denied HN characteristics (e.g., interpersonal warmth, emotionality, agency, depth). The denial of HN leads to the perception of individuals as object- or robot-like. In contrast, animalistic dehumanization occurs when people are denied HU characteristics (e.g., civility, refinement, morality, maturity, high-order cognitive processes) distinguishing them from animals. The denial of HU leads to the perception of individuals as animal- or child-like.

In 1995, Nussbaum suggested that the focus on a woman's physical appearance would drive people to perceive her as a dehumanized object (i.e., mechanistic dehumanization). Empirical evidence backed up this theoretical proposition, showing that (1) sexualized women (i.e., wearing swimsuits rather than sweaters) are cognitively processed as objects rather than humans (Bernard, Gervais, Allen, Campomizzi, & Klein, 2012); (2) writing an essay on a woman's physical appearance (vs. on the person as a whole) leads to lesser HN attributions (Heflick & Goldenberg, 2009) and decreases warmth and competence

attributions (Heflick, Goldenberg, Cooper, & Puvia, 2011), confirming that a focus on women's physical appearance elicits mechanistic dehumanization.

A physical focus can also lead to animalistic dehumanization of women, as sexualized women are attributed less HU traits (e.g., civility or refinement; Bongiorno, Bain, & Haslam, 2013). At an implicit level, Vaes, Paladino, and Puvia (2011), using a Single-Category Implicit Association Task, found that images of sexualized women (vs. non-sexualized ones) are more associated with animal-related words than human-related ones.

In sum, focusing on women's physical appearance can lead to mechanistic or animalistic dehumanization. Recently, Morris and Goldenberg (2015) proposed to distinguish beauty- and sex-based objectifications, to account for these differential effects on the two dehumanization forms. Beauty-based objectification refers to a focus on general physical appearance and beauty, while sex-based objectification refers to a restricted focus on sexual body parts and functions. These authors noted that studies linking objectification and mechanistic dehumanization mostly elicited objectification through a general focus on physical appearance and beauty. In contrast, studies linking objectification and animalistic dehumanization mostly manipulated objectification through sexualization of targets. According to Morris and Goldenberg (2015), such a focus on sexual body parts and functions leads to animalistic dehumanization because sexuality is associated with the animal nature (Goldenberg, Cox, Pyszczynski, Greenberg, & Solomon, 2002). In contrast, the authors also indicate the fact that other scholars envisage women's body as objects of beauty (Langton, 2009) and that such focus on women's beauty is expected to reduce perceived warmth, emotionality and agency.

Morris and Goldenberg (2015) thus hypothesized that while beauty-based objectification should lead to a perception of women as superficial, lacking interpersonal warmth, emotionality and agency (i.e., mechanistic dehumanization), sex-based objectification should prone a perception of women as lacking civility, refinement and morality (i.e., animalistic dehumanization). This theoretical assumption was tested and validated in three studies involving multiple objectification manipulations (Morris et al., 2018).

1.2 Perceiving a Focus on One's Physical Appearance: Metadehumanization

Evidence thus points to different dehumanization types elicited when the focus on physical appearance is general versus specific to sexual body parts. Yet, much less is known regarding how women react to these differential treatments and, more particularly, how they believe they are viewed by the perceiver. In the present paper, we investigate targets' perceptions of being the victim of a dehumanizing treatment, i.e.,

metadehumanization (Kteily et al., 2016)¹.

Metadehumanization increases following interpersonal maltreatments. For instance, social ostracism, betrayal or humiliation (Bastian & Haslam, 2011), lack of support (Caesens, Stinglhamber, Demoulin, & De Wilde, 2017), reduced intragroup respect (Renger, Mommert, Renger, & Simon, 2016), and powerlessness (Yang, Jin, He, Fan, & Zhu, 2015) has been found as antecedents of metadehumanization. In terms of consequences, metadehumanization generates a vicious circle of dehumanization (i.e., being confronted to dehumanization facilitates reciprocal dehumanization feelings towards the perpetrator), as well as aggressive reactions (Kteily et al., 2016), and reduced well-being (Caesens et al., 2017). Bastian and Haslam (2011) also found that animalistic and mechanistic metadehumanizations trigger differential cognitive and emotional reactions among victims: animalistic metadehumanization leads to aversive self-awareness and feelings of guilt, while mechanistic metadehumanization triggers cognitive deconstruction states, anger and sadness. A partial replication of these results (Zhang, Chan, Xia, Tian, & Zhu, 2017) showed that mechanistically dehumanized participants express higher cognitive deconstruction states and sadness (but not anger), while animalistic dehumanization generate higher guilt and sadness.

Metadehumanization has thus widespread consequences and mostly occurs when people face interpersonal maltreatments. Because objectification is one of the most prominent and pervasive form of gender discrimination (Holland, Koval, Stratemeyer, Thomson, & Haslam, 2017; Koval et al., 2019; Swim, Hyers, Cohen, & Ferguson, 2001), it constitutes interpersonal maltreatment and, consequently, should trigger metadehumanization among victims.

Yet, if the focus on physical appearance can generate metadehumanization, the question remains as to what form of metadehumanization it triggers. Here, we apply Morris and Goldenberg's reasoning to metadehumanization. Consistent with the perpetrator's side, we propose that victims' reactions to an observer's focus on their general beauty vs. sexual body parts would elicit different metadehumanization types: mechanistic metadehumanization should be reported when facing a focus on their general physical appearance and beauty, while animalistic metadehumanization should be observed when the focus is on sexual body parts and functions.

Further, in line with previous findings (Bastian & Haslam, 2011; Zhang et al., 2017), we hypothesize that metadehumanization types should lead to differential emotional reactions: beauty-based objectification (by increasing mechanistic metadehumanization) should trigger anger and sadness, while sex-based objectification (by increasing animalistic metadehumanization) should trigger guilt. We thus propose that mechanistic and

¹ We insist that metadehumanization and self-dehumanization are different concepts: if metadehumanization is defined as the targets' perceptions of being dehumanized (i.e., attribution of human characteristics by others), self-dehumanization is defined as targets' perceptions about his/her own humanity (i.e., self-attribution of human characteristics). We focus here on metadehumanization processes.

Do you feel perceived as a full human being when you are treated as a body?

animalistic metadehumanization would mediate the effects of beauty and sex-based objectification practices respectively, which in turn would respectively promote anger/sadness or guilt.

1.3 Overview of the Studies

In a series of four studies, we examine the influence of beauty- and sex-based objectification on women's mechanistic and animalistic metadehumanization, together with their emotional reactions. Our studies manipulated objectification through autobiographical recall. While Study 1 ($N = 195$) was designed to test our general hypotheses, Study 2 ($N = 160$) was conducted to account for a methodological limitation of Study 1 and to replicate unexpected findings. Studies 3a-b present pre-registered replications of Studies 1-2.

2. Study 1

2.1 Method

Participants

One hundred and ninety-five women were recruited through social networks. As part of her master thesis, a student posted the link of the study on her Facebook profile, asking their Facebook female friends to help her to collect data through the completion of the questionnaire. Participants of this study were French-native speakers. Two participants were withdrawn from analyses because they did not report objectification experiences. Analyses were conducted on 193 participants. Their age ranged from 18 to 64 years ($M = 29.09$; $SD = 10$). Participants were randomly assigned to one of the three conditions (sex-based, $n = 70$; beauty-based, $n = 60$; control, $n = 63$)².

Procedure and materials

Autobiographical recall. Participants had to recall a memory during which someone objectified them, either in a sex-based or in a beauty-based way. In the control condition, they reported an event in which they were considered through a specific feminine personality trait. Instructions in the sex-based objectification condition were: "Sometimes, women are faced with situations in which they are considered only through the sexual parts and functions of their bodies. They are considered as objects designed to satisfy the needs and sexual desires of others. The gaze of others is then focused on the sexual and/or sexualized parts of their bodies, without considering their person as a whole". In the beauty-based objectification condition, instructions were: "Sometimes, women are faced with situations in which they are considered only through their physical appearance. They are considered as trophy women or objects of decoration pleasant to look at. The gaze of

² Unequal number of participants between conditions was due to partial completions of participants after effective randomization.

others then focused on their general physical appearance, without considering their person as a whole”. In the control condition, participants read the following instructions: “Sometimes, women are faced with situations in which they are considered only through one specific feminine trait of their personality. The attention of others then focused on this specific trait, without considering their person as a whole”. Participants had to report a situation using minimum 10 lines and to describe the event and their related feelings in a way that a reader could easily imagine them.

Metadehumanization. Participants estimated their animalistic and mechanistic metadehumanization levels during the event. We adapted and used the 16 items of Demoulin et al.’s (2020) studies. For instance, items such as “The other treated me as if I was under-evolved” assessed animalistic form of metadehumanization whereas items such as “The other treated me if I was mechanical and cold, like a robot” assessed mechanistic form of metadehumanization. For each item, participants indicated their levels of agreement on a 7-point Likert-type scale ranging from 1 (“Strongly disagree”) to 7 (“Strongly agree”). All items are presented as Supplementary Material.

Emotions. Participants indicated how much they felt anger, sadness and guilt during the recalled situation. We used scales from the Positive and Negative Affect Schedule ranging from 1 (“Not at all”) to 7 (“Extremely”) (Watson & Clark, 1999). Six items measured anger, four items measured sadness³ and six items assessed guilt.

2.2 Results

2.2.1 Preliminary Analyses

Principal components analyses were conducted on metadehumanization items. Exploratory factorial analysis revealed two factors explaining 53.69% of variance: one related to animalistic metadehumanization and the other to mechanistic metadehumanization. Although some items cross-loaded, the two-factor solution is satisfactory and corresponds to the two *a priori* dimensions of metadehumanization. We therefore averaged the eight animalistic metadehumanization items into one index ($\alpha = .87$) and the eight mechanistic metadehumanization items into another ($\alpha = .85$)⁴.

2.2.2 Main Analyses

Descriptives

Means, standard deviations, Cronbach’s alphas and correlations are reported in the Supplementary Table 1 (see Supplementary Materials). Animalistic and mechanistic

³ The scale measuring feelings of sadness initially contained five items. However, the scale was translated in French for this first study and the translation was identical for the items “alone” and “lonely”. We decided to use only the item “seule” in French to substitute both the English items;

⁴ Results were identical when taking out cross-loading items. Results without these items are available via the following link: https://osf.io/9zj7a/?view_only=ccb54549483f42108ac468e7c641a3d3.

metadehumanization positively correlated. Both also positively correlated with anger, sadness and guilt. Inconsistent with Bastian and Haslam's (2011) and Zhang et al.'s (2017) results, these correlations did not indicate a preferential association of animalistic metadehumanization with guilt and sadness or of mechanistic metadehumanization with sadness and anger.

Metadehumanization

We conducted a 3 [conditions (sex-based vs. beauty-based vs. control) as between-subject factor] x 2 [metadehumanization (animalistic vs. mechanistic) as within-subject factor] mixed ANOVA. The main effects of condition [$F(2,190) = 3.59, p = .02, \eta^2_p = .03$] and metadehumanization [$F(1,190) = 81.30, p < .001, \eta^2_p = .30$] were significant, as (1) metadehumanization varies as a function of condition and (2) mechanistic metadehumanization ($M = 4.67$) was higher than animalistic metadehumanization ($M = 3.92$). Importantly, the one-way interaction was also significant, $F(2,190) = 15.79, p < .001, \eta^2_p = .14$.

Regressions analyses were then conducted. Orthogonal contrasts were used: Contrast 1 (C1) opposed the sex-based objectification condition (coded 1) to the beauty-based objectification one (coded -1), with the control condition coded 0; Contrast 2 (C2) opposed the two experimental conditions (i.e., sex-based and beauty-based objectification, both coded -1) to the control condition (coded 2). We first regressed animalistic metadehumanization on C1 and C2. Results showed that our manipulation did not affect animalistic dehumanization: sex-based objectification did not elicit higher levels of animalistic metadehumanization compared to beauty-based objectification, C1: $b = 0.06, t = .46, p = .64$. In addition, participants in the experimental conditions did not express higher levels of animalistic metadehumanization compared to the control condition, C2: $b = -0.002, t = -.02, p = .98$.

Secondly, we regressed perceptions of mechanistic dehumanization on C1 and C2. Results showed that C1 was not significant. Beauty-based objectification did not lead participants to report higher levels of mechanistic metadehumanization compared to sex-based objectification, C1: $b = 0.04, t = .35, p = .72$. Interestingly, however, C2 proved to be significant. Experimental conditions (i.e., $M = 5.03, SD = 1.35$; $M = 4.95, SD = 1.22$ for sex- and beauty-based objectification, respectively) elicited higher levels of mechanistic dehumanization than the control condition ($M = 4.00, SD = 1.28$), $b = -0.33, t = -4.98, p < .001, \eta^2_p = .11$ (see Figure 1). Insofar as we did not conduct a priori power analysis to determine our sample size, we decided to conduct power analysis after data collection using G*Power to check if our sample size was large enough to detect an effect of objectification experiences on mechanistic metadehumanization. Based on the transformation of the eta squared we found (i.e., $\eta^2_p = .11$), we set the effect size f at .35 and α at .05. The analysis showed that the power to detect an effect size f of .35 was .99.

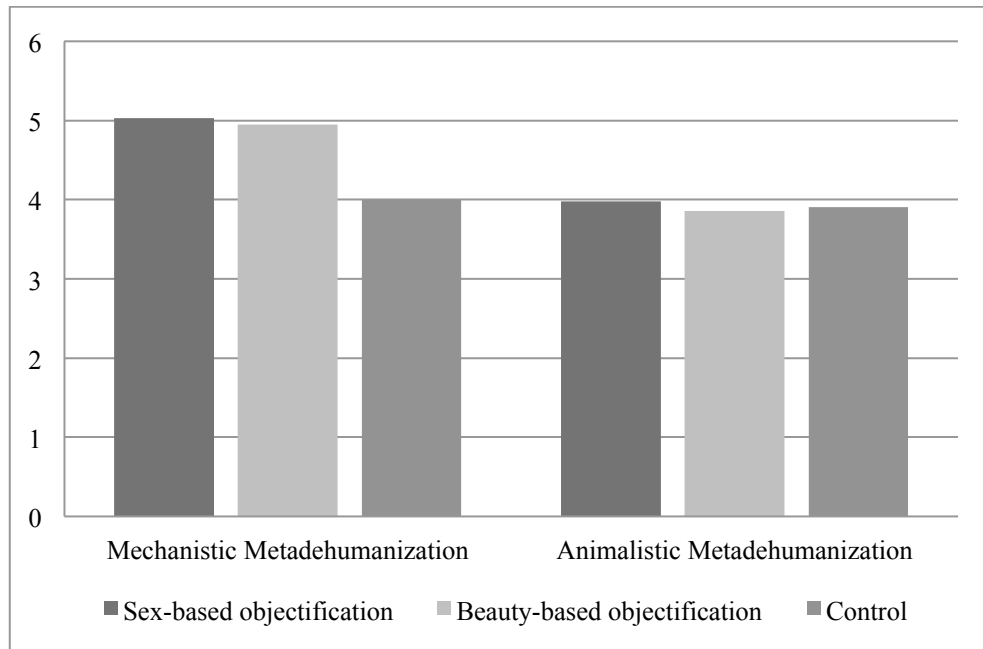


Figure 1. Means and standard errors of mechanistic and animalistic metadehumanization across conditions (Study 1)

Emotions

We regressed anger, sadness, and guilt on C1 and C2. The regression of guilt on C1 and C2 indicates that only C1 reached significance. Sex-based objectification ($M = 3.15$, $SD = 2.09$) led participants to report higher guilt feelings compared to beauty-based objectification ($M = 2.37$, $SD = 1.53$), $b = 0.39$, $t = 2.58$, $p = .01$, $\eta^2_p = .03$. No other differences emerged on emotional states (i.e., anger or sadness did not differ as a function of C1 or C2). Given this general absence of results and the non-significant effect of C1 on metadehumanization, we did not analyze the hypothesized mediation models.

2.3 Discussion

Study 1's results showed little convergence with our initial hypotheses. First, no difference whatsoever was observed on animalistic metadehumanization across the three conditions. Second, sex-based and beauty-based objectification did not differ regarding mechanistic metadehumanization. Importantly, however, both forms of objectification led women to experience mechanistic metadehumanization. This result might reflect widespread metaphors in society according to which women are assimilated to objects of men's desires (Papadaki, 2010). If replicated, this result would suggest that although

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sexualized women are dehumanized in an animalistic way, their experience of being targeted by sexual gazes translates in mechanistic metadehumanization.

Third, regarding emotions, only sex-based objectification increased guilt feelings among women. This suggests that participants assume some responsibility for the sexual objectification behaviors they endure. To the extent that sex-based objectification experiences might include instances of unwanted sexual contacts, the latter finding is reminiscent of data showing that victims of rape often report some feelings of responsibility towards these traumatic events (Donde, 2017; Finkelson & Oswalt, 1995).

This first study is not without limitations. First, we did not include a manipulation check, the absence of significant results thus potentially being the mere consequence of manipulation failure. Second, metadehumanization levels in the control condition were unexpectedly high. In this condition, participants had to report an event in which someone focused on a specific feminine trait of their personality without considering their individuality. Such instructions might have triggered metadehumanization feelings given the reductive aspect of the provided instructions to one's femininity.

3. Study 2

Study 2 aimed to replicate the unexpected findings of Study 1 in an a priori hypothetical design, and to alleviate methodological weaknesses by adding manipulation and attentional checks, as well as by modifying the control condition. Moreover, in order to strengthen our results, Study 2 was conducted with English-native speakers.

3.1 Method

Participants

One hundred and sixty female participants were recruited on the crowdsourcing platform Prolific Academic. Data from 12 participants were excluded because they did not correctly answer the attentional checks (i.e., "It is important that you pay attention to our survey. Please tick 'Strongly agree' for this statement"). The final sample was composed of 148 female participants ($M = 32.82$; $SD = 11.81$). Participants were randomly assigned to one of the three conditions (sex-based, $n = 55$; beauty-based, $n = 43$; control, $n = 50$).

Procedure and materials

Autobiographical recall. Similar to the first study, participants had to recall a situation in which they were objectified in a sex-based or in a beauty-based way. In the control condition, participants were asked to report a situation in which they were "considered through one specific trait of their personality". That is, we eliminated references to their femininity.

Manipulation check. Participants indicated on what specific part of their self the person focused on during the situation they recalled. They had to tick one of the following

three options: their beauty, their sexual body parts, neither of them⁵.

Metadehumanization and emotions. We used the same scales as in Study 1 to assess mechanistic ($\alpha = .90$) and animalistic ($\alpha = .86$) metadehumanization as well as participants' emotions (anger, $\alpha = .88$; sadness, $\alpha = .88$; guilt, $\alpha = .91$). All factorial analyses conducted on these scales replicated Study 1's findings and are available as Supplementary Material.

3.2 Results

Descriptives

Means, standard deviations, Cronbach's alphas, and correlations between metadehumanization and emotions are reported in the Supplementary Table 2. Both forms of metadehumanization are strongly correlated with one another and, as in Study 1, both forms positively correlated with anger, sadness and guilt.

Metadehumanization

A 3 (conditions: sex-based vs. beauty-based vs. control) x 2 (metadehumanizations: animalistic vs. mechanistic) mixed ANOVA was conducted with the later factor varying within subjects. Results revealed (1) a main effect of condition, [$F(2,145) = 9.78, p < .001, \eta^2_p = .11$], showing that metadehumanization varies as function of condition and (2) a main effect of metadehumanization, [$F(1,145) = 52.53, p < .001, \eta^2_p = .26$], showing that mechanistic metadehumanization ($M = 4.41$) was higher than animalistic metadehumanization ($M = 3.75$). The one-way interaction was also significant, $F(2,145) = 12.03, p < .001, \eta^2_p = .14$.

We used the same contrast coding as in Study 1 for regression analyses. We regressed animalistic metadehumanization on C1 and C2. As in Study 1, no contrast reached significance, C1: $b = 0.17, t = 1.13, p = .26$ & C2: $b = -0.14, t = -1.61, p = .10$. Regarding mechanistic metadehumanization, and in line with Study 1, C2 proved significant showing

⁵ We decided to keep the entire sample in the reported analyses because of an important drop of participants who failed to "correctly" answer to the manipulation check as a function of their experimental condition assignment. In particular, 21 participants failed to identify beauty-based objectification as a focus on their general physical appearance in the manipulation check, which would have left only 22 participants in the beauty-based objectification condition. Among these 21 participants, 19 indicated that the other person focused on their sexual body parts and two indicated that the other person focused neither on their beauty, nor on their sexual body parts. Importantly however, results on mechanistic metadehumanization remained identical whether we drop or keep these participants: C1: $b = 0.32, t = -2.09, p = .04$, C2: $b = -0.50, t = -6.04, p < .001$. The pattern of significance remained the same for both anger and sadness. Only results on animalistic metadehumanization and guilt differed slightly when we did not take into account participants who "failed" to correctly complete the manipulation check according to their condition. In particular, for animalistic metadehumanization, C2 reached significance, C2: $b = -0.22, t = -2.21, p = .03$ whereas C1 remained non-significant. For guilt, C1 did not reach significance, $b = 0.12, t = .82, p = .41$ and C2 remained non-significant. This problem will be addressed in the general discussion.

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that the two experimental conditions (i.e., sex-based and beauty-based objectification, $M = 5.10$, $SD = 1.08$; $M = 4.57$, $SD = 1.21$, respectively) elicited higher levels of mechanistic metadehumanization compared to the control condition ($M = 3.50$, $SD = 1.45$), C2: $b = -0.44$, $t = -6.09$, $p < .001$, $\eta^2_p = .20$. As for Study 1, we conducted power analysis after data collection to find out if our sample was large enough to detect the effect of objectification experiences on mechanistic metadehumanization. After completion of the required parameters, effect size $f = .50$ and $\alpha = .05$, the analysis showed that the power to detect a medium-effect size f of .50 was .99. In addition, results revealed here that sex-based objectification ($M = 5.10$, $SD = 1.08$) led to higher levels of mechanistic metadehumanization compared to beauty-based objectification ($M = 4.57$, $SD = 1.21$), C1: $b = 0.27$, $t = 2.08$, $p = .03$, $\eta^2_p = .02$. Mean differences on mechanistic metadehumanization across conditions are represented in Figure 2.

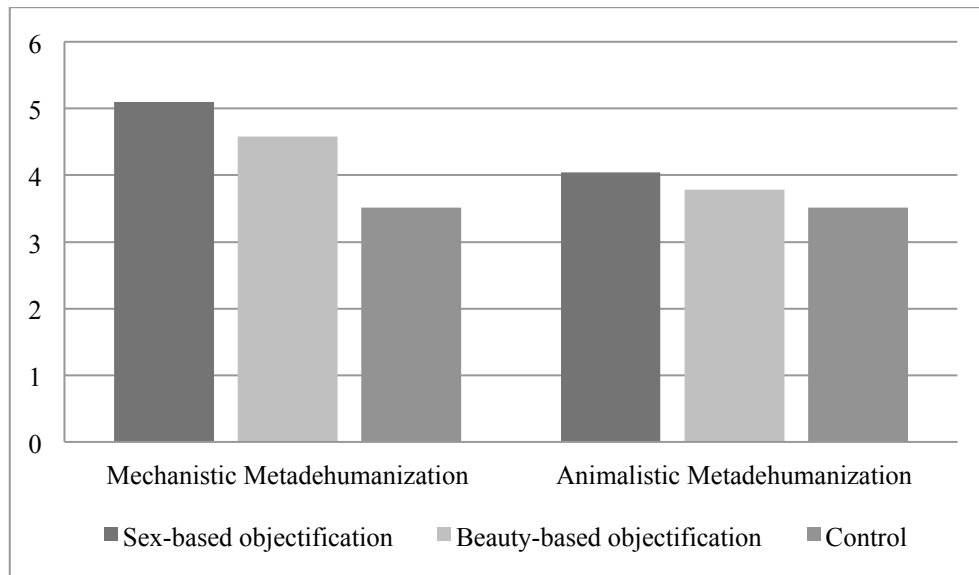


Figure 2. Means and standard errors of mechanistic and animalistic metadehumanization across conditions (Study 2)

Emotions

We regressed emotional states on C1 and C2. As in Study 1, participants reported higher levels of guilt following sex-based objectification ($M = 2.47$, $SD = 1.23$) compared to beauty-based objectification ($M = 1.89$, $SD = .99$), C1: $b = 0.29$, $t = 2.45$, $p = .01$, $\eta^2_p = .03$. However, participants did not report higher levels of guilt in the experimental conditions compared to the control one, C2: $b = 0.04$, $t = .62$, $p = .53$. Second, participants reported similar levels of anger in sex- and beauty-based objectification conditions, C1: $b = 0.02$, $t = .21$, $p = .83$. Interestingly, analyses also revealed that experimental conditions (i.e.,

sex- and beauty-based objectification, $M = 2.98$, $SD = 1.08$; $M = 2.93$, $SD = 1.04$, respectively) led participants to report higher levels of anger compared to the control condition ($M = 2.45$, $SD = 1.14$), C2: $b = -0.17$, $t = -2.66$, $p = .008$, $\eta^2_p = .04$. Third, as in Study 1, feelings of sadness did not vary across conditions, C1: $b = 0.06$, $t = .47$, $p = .63$; C2: $b = 0.02$, $t = .23$, $p = .81$.

Mediation

In line with Bastian and Haslam (2011) and the results reported above, we first tested the mediating role of mechanistic metadehumanization in the relationship between objectification experiences and anger. We tested this mediation using bootstrap analyses (Hayes, 2013; macro PROCESS, model 4; resample = 5,000 iterations)⁶. Hence, we entered C2 as a predictor (while C1 was entered as a covariate), mechanistic metadehumanization as a mediator and anger as the outcome variable. As presented in Figure 3, the effects of objectification treatments on anger are fully mediated by mechanistic metadehumanization, indirect effect = -0.23, 95% CI = [-0.33; -0.14].

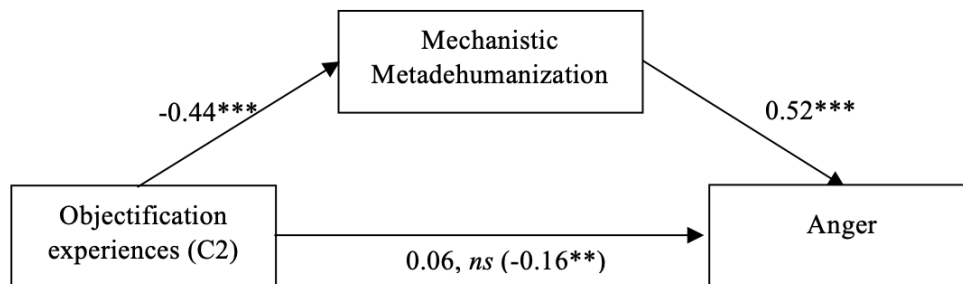


Figure 3. Mechanistic metadehumanization mediates the relationship between sex- and beauty-based objectification experiences and anger while controlling for C1.

*** $p < .001$ ** $p < .01$.

In addition, for exploratory purposes, we also regressed guilt on mechanistic metadehumanization and C1 (while controlling for C2). Indeed, despite that previous studies did not find relation between mechanistic metadehumanization and guilt, our results indicate that sex-based objectification leads to higher levels of mechanistic metadehumanization and guilt feelings compared to beauty-based objectification. Hence, we entered C1 as a predictor (while C2 was entered as a covariate), mechanistic metadehumanization as a mediator and guilt as the outcome variable. Results showed that the effects of sex-based (vs. beauty-based) objectification on guilt are fully mediated by

⁶ For further information on mediation analyses with multicategorical independent variables, you may refer to Judd, McClelland, and Ryan (2011) (see also, Hayes & Preacher, 2013).

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mechanistic metadehumanization, indirect effect = 0.08, 95% CI = [0.01; 0.17] (see Figure 4).

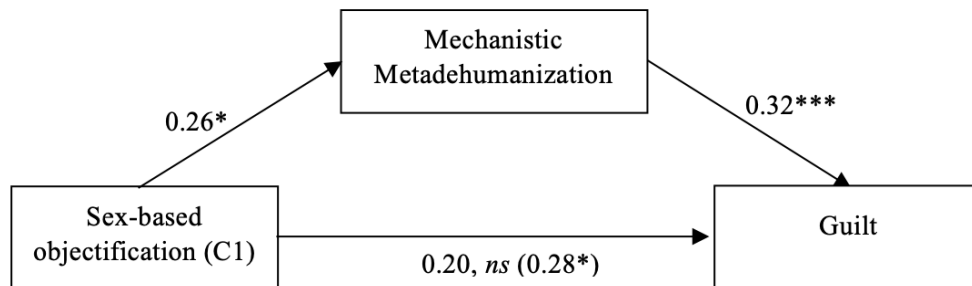


Figure 4. Mechanistic metadehumanization mediates the relationship between sex-based objectification and guilt while controlling for C2.

*** $p < .001$ * $p < .05$.

3.3 Discussion

Overall, Study 2 replicates Study 1, particularly as participants did not report different levels of animalistic metadehumanization while they reported higher levels of mechanistic metadehumanization in objectifying situations, compared to the control condition. However, here, sex-based objectification led to higher levels of mechanistic metadehumanization than beauty-based objectification.

Considering emotions, this study also replicates results highlighted in Study 1, being objectified in a sex-based way leads to report more guilt than being objectified in a beauty-based manner. This effect is fully mediated by mechanistic metadehumanization. These results contrast with previous ones (Bastian & Haslam, 2011; Zhang et al., 2017) showing that guilt is induced by increased animalistic metadehumanization. In addition, in Study 2, both forms of objectification induced anger and these effects were fully mediated by mechanistic metadehumanization. Such findings are in line with Bastian and Haslam's (2011) results, evidencing that mechanistic metadehumanization relates to increased anger.

One aim of Study 2 was to use a more appropriate, less dehumanizing, control condition. We thus eliminated references to feminine traits, asking participants to recall a situation in which they were apprehended by others through one unspecified personality trait. Although, descriptively, metadehumanization scores were reduced in Study 2 as compared to Study 1, these scores remained higher than expected. As objectification has been defined as the reduction of one's whole to some part of the self (e.g., Nussbaum, 1995), this relatively high level of metadehumanization might result from participants' feelings that even a reduction to one specific personality trait is partly dehumanizing.

In order to strengthen our results and further test our proposals, two complementary pre-registered studies addressed the two main inconsistencies highlighted between Studies 1-2, namely whether (1) sex-based objectification elicits higher levels of mechanistic metadehumanization than beauty-based objectification; (2) objectification conditions elicit higher levels of anger than control condition.

4. Studies 3a-b

The pre-registrations of Studies 3a-b are available on Open Science Framework (OSF) at: <https://osf.io/u29tr> (Study 3a) and <https://osf.io/pckuq> (Study 3b). We used the same procedure and measures as in Studies 1-2⁷.

4.1 Method

Power analyses and participants

We ran a priori power analyses based on the effect size related to the regression of mechanistic metadehumanization on C1 and C2. Considering the lowest partial eta squared found in the two previous studies (i.e., $\eta^2_p = .11$, in Study 1), G*Power recommended to recruit 108 participants to provide at least 95% of statistical power. We added 8% of participants to this initial sample size because failure in attentional check questions in Study 2 constrained us to drop 7,5% of our participants. We recruited 115 (Study 3a) and 124 (Study 3b) participants on Prolific Academic⁸. We dropped out data from participants who failed at attentional checks. Hence, the final samples were composed of 111 participants aged from 18 to 65 years old in Study 3a ($M = 35.95$; $SD = 11.61$) and 118 participants aged from 18 to 65 years old in Study 3b ($M = 35.15$; $SD = 12.35$). Participants were randomly assigned to each condition.

Procedure and materials

Manipulation procedures and scales were the same as in Study 2. Here again, despite some failures in the manipulation check, we decided to keep the entire sample of participants in both studies^{9,10}. Results of factorial analyses are available as Supplementary Material.

⁷ In Studies 3a and 3b, we also investigate the cognitive consequences of metadehumanization (i.e., aversive self-awareness and cognitive deconstruction states, Bastian & Haslam, 2011; Zhang et al., 2017). Based on Bastian and Haslam's (2011) and Zhang et al.'s (2017) results, we hypothesized that mechanistic metadehumanization would increase cognitive deconstructive states. Insofar as we did not obtain any results on these variables, we reported correlations between cognitive consequences and metadehumanization in the Supplementary Material section;

⁸ Participants who took part in Study 2 were not allowed to complete Study 3a and participants who complete Studies 2-3a were not allowed to complete Study 3b;

⁹ In Study 3a, in the sex-based objectification condition, 28 participants indicated a focus on their sexual body parts, six indicated a focus on their general physical appearance and one "neither of them", whereas in

4.2 Results

Descriptive

Means, standard deviations, Cronbach's alphas and correlations between metadehumanization and emotions are reported in the Supplementary Table 3 and 5. As in previous studies, metadehumanization forms were positively correlated. In terms of emotions, both forms correlated positively with anger, sadness, and guilt in Study 3b, but in Study 3a, mechanistic metadehumanization only related to anger while animalistic metadehumanization correlated with all three emotions.

Metadehumanization

We conducted a mixed ANOVA using a 3 [conditions (sex-based vs. beauty-based vs. control) as between-subject factor] x 2 [metadehumanization (animalistic vs. mechanistic) as within-subject factor] mixed ANOVA. For both studies, results revealed a main effect of condition (Study 3a: $F(2,108) = 7.65, p = .001, \eta_p^2 = .12$; Study 3b : $F(2,115) = 4.5, p = .013, \eta_p^2 = .07$), showing that metadehumanization varies as function of condition. We also found a main effect of metadehumanization (Study 3a: $F(1,108) = 55.03, p < .001, \eta_p^2 = .33$; Study 3b : $F(1,115) = 26.82, p < .001, \eta_p^2 = .18$), as in previous studies, participants reported more mechanistic metadehumanization compared to animalistic metadehumanization. The one-way interaction also reached significance (Study 3a: $F(2,108) = 6.54, p = .002, \eta_p^2 = .10$; Study 3b : $F(2,115) = 19.11, p < .001, \eta_p^2 = .25$).

We then conducted regression analyses with the same contrast coding as previous studies. For reasons of clarity, means of dependent variables for each condition are reported in Table 1. Animalistic metadehumanization was regressed on C1 and C2. As in previous studies, animalistic metadehumanization did not vary across conditions (Study 3a: C1: $b =$

the beauty-based objectification, 16 reported that the other person focuses on their sexual body parts, 15 reported a focus on their general physical appearance and seven ticked "neither of them". Despite this, results on mechanistic metadehumanization remain identical when dropping the participants who "failed" at the manipulation check question: C1: $b = 0.17, t = .81, p = .41$, C2: $b = -0.50, t = -4.91, p < .001$. The pattern of significance remained the same for both guilt and anger. However, when animalistic metadehumanization was regressed on C1 and C2, C2 reached significance (C2: $b = -0.25, t = -2.21, p = .03$) whereas C1 remained non-significant. Regarding sadness, C2 did not reach significance when we took into account only participants who ticked the right option according to their condition in the manipulation check question, C2: $b = 0.11, t = 1.15, p = .25$;

¹⁰ In Study 3b, in the sex-based objectification condition: 30 participants indicated a focus on their sexual body parts, four indicated a focus on their general physical appearance and six "neither of them", whereas in the beauty-based objectification, 11 reported that the other person focuses on their sexual body parts, 21 reported a focus on their general physical appearance and seven ticked "neither of them". Despite this, we still observed more mechanistic metadehumanization in the objectification conditions compared to the control condition, C2: $b = -0.41, t = -4.57, p < .001$. However, the difference between sex- and beauty-based objectification in mechanistic metadehumanization does not reach significance, C1: $b = 0.28, t = 1.61, p = .11$. The results for animalistic metadehumanization and emotions remained the same.

0.13, $t = .773$, $p = .44$ & C2: $b = -0.16$, $t = -1.70$, $p = .09$; Study 3b: C1: $b = 0.06$, $t = .43$, $p = .66$ & C2: $b = 0.04$, $t = .505$, $p = .61$).

Table 1. Descriptive statistics: Descriptive statistics in each condition in Study 3a and Study 3b

	Study 3a						Study 3b					
	Sex-based		Beauty-based		Control		Sex-based		Beauty-based		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Animalistic metadehumanization	3.97	1.33	3.71	1.22	3.35	1.65	3.85	1.22	3.73	1.26	3.92	1.30
Mechanistic metadehumanization	5.11	.96	4.89	1.13	3.63	1.62	5.09	1.05	4.52	1.23	3.57	1.27
Anger	2.85	1.09	3.17	1	2.63	1.12	3.23	1.18	2.56	1.06	2.81	1.12
Sadness	2.82	1.33	2.80	1.15	3.28	1.07	2.52	1.15	2.84	1.13	3.12	1.06
Guilt	2.28	1.36	2.29	1.13	2.27	1.01	2.05	1.23	2.19	1.10	2.33	1.17

Note. $N = 111$ (Study 3a), $N = 118$ (Study 3b)

Then, we regressed mechanistic metadehumanization on C1 and C2. Analyses revealed that mechanistic metadehumanization levels were higher in the two experimental conditions compared to the control one, Study 3a: C2: $b = -0.46$, $t = -5.34$, $p < .001$, $\eta_p^2 = .20$; Study 3b: C2: $b = -0.41$, $t = -5.31$, $p < .001$, $\eta_p^2 = .19$. Results between Studies 3a and 3b diverge on C1. In Study 3a, mechanistic metadehumanization did not vary between sex-based and beauty-based objectification, C1: $b = 0.11$, $t = .73$, $p = .46$ (see Figure 5). However, in Study 3b and in line with Study 2, participants reported higher levels of mechanistic metadehumanization in the sex-based objectification condition compared to the beauty-based one, C1: $b = 0.28$, $t = 2.10$, $p = .037$, $\eta_p^2 = .03$ (see Figure 6).

Do you feel perceived as a full human being when you are treated as a body?

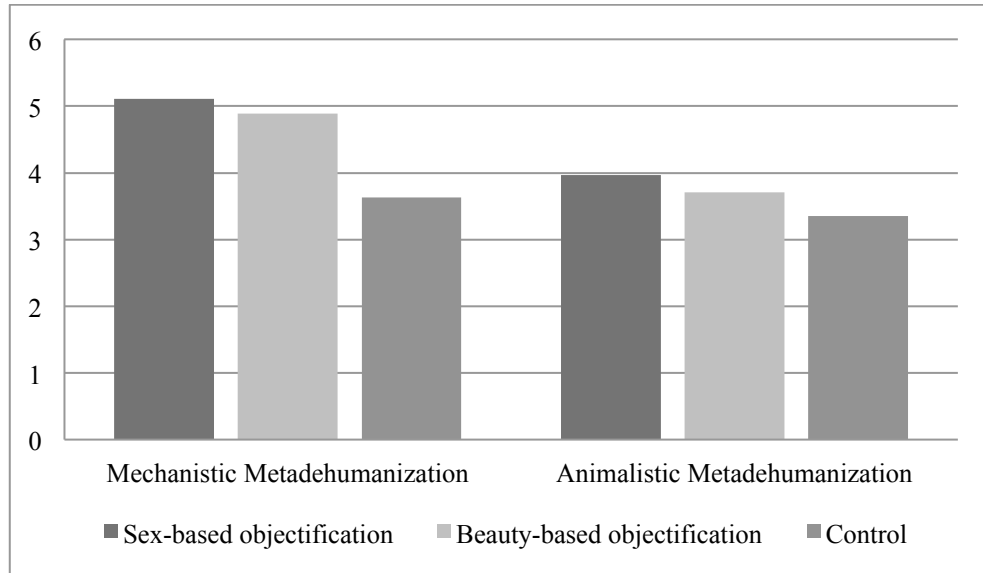


Figure 5. Means and standard errors of mechanistic and animalistic metadehumanization across conditions (Study 3a)

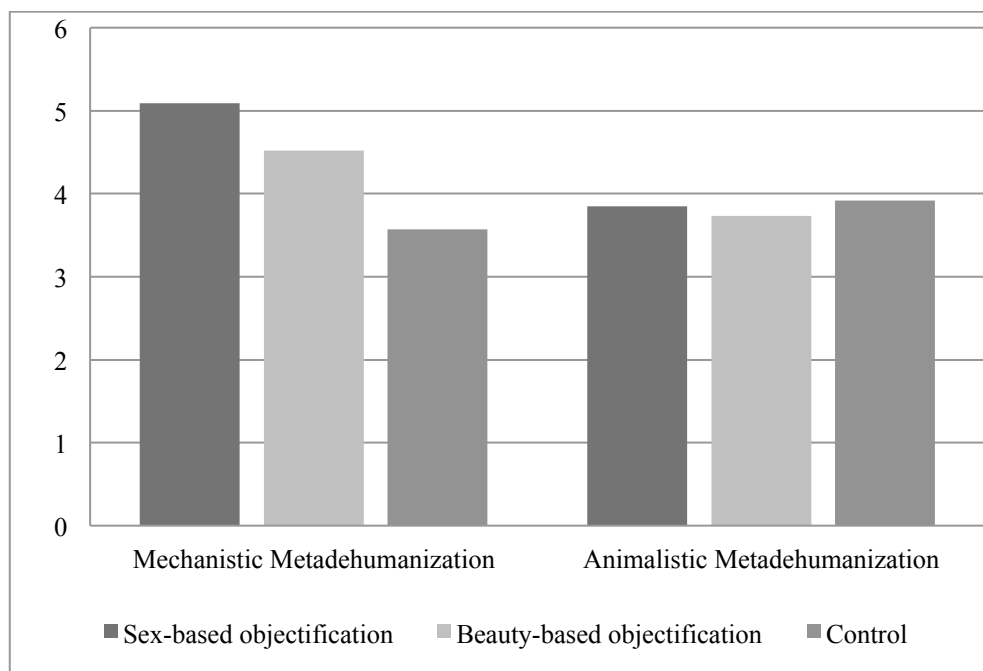


Figure 6. Means and standard errors of mechanistic and animalistic metadehumanization across conditions (Study 3b)

Emotions

Feelings of anger, sadness and guilt were regressed on C1 and C2. Contrarily to our pre-registered hypotheses, we did not observe any difference in guilt between the sex-based and beauty-based objectification conditions, neither in Study 3a, C1: $b = -0.004$, $t = -.03$, $p = .97$ nor in Study 3b, C1: $b = -0.07$, $t = -.54$, $p = .59$. Further, guilt did not differ between experimental and control conditions, Study 3a: C2: $b = -0.004$, $t = -.05$, $p = .95$; Study 3b: C2: $b = 0.07$, $t = .92$, $p = .358$.

We regressed anger on C1 and C2. In contrast to the results of Study 2, regressions analyses also indicated that anger did not differ between experimental and control conditions, C2: $b = -0.13$, $t = -1.77$, $p = .07$, $\eta^2_p = .02$ (Study 3a) and $b = -0.03$, $t = -.39$, $p = .69$ (Study 3b). We also observed a diverging result on anger levels between experimental conditions in Studies 3a-3b. In Study 3a, anger did not vary between sex-based and beauty-based objectification, C1: $b = -0.16$, $t = -1.28$, $p = .20$. However, in Study 3b, participants reported higher levels of anger in the sex-based objectification condition compared to beauty-based objectification one, C1: $b = 0.33$, $t = 2.64$, $p = .009$, $\eta^2_p = .05$.

Finally, as in Studies 1-2, sadness did not vary as a function of C1, Study 3a: $b = 0.009$, $t = .06$, $p = .95$; Study 3b: $b = -0.16$, $t = -1.25$, $p = .21$. Unexpectedly, in Studies 3a-3b, participants in the control condition reported higher levels of sadness compared to participants in the experimental conditions, C2: $b = 0.16$, $t = 1.97$, $p = .051$, $\eta^2_p = .03$ (Study 3a) and $b = 0.15$, $t = 2.01$, $p = .047$, $\eta^2_p = .03$ (Study 3b).

Mediation

As in Study 2, we tested the mediating role of mechanistic metadehumanization in the relationship between conditions and emotional consequences. Mediation was conducted using bootstrap analyses (Hayes, 2013; macro PROCESS, model 4; resample = 5,000 iterations). For Study 3b, we ran a mediation analysis in order to test if the effect of C1 (while controlling for C2) on anger was mediated by mechanistic metadehumanization. As shown in Figure 7, the results showed that the effect of sex-based objectification on anger was fully mediated by mechanistic metadehumanization, indirect effect = 0.13, 95% CI = [0.01; 0.26].

Do you feel perceived as a full human being when you are treated as a body?

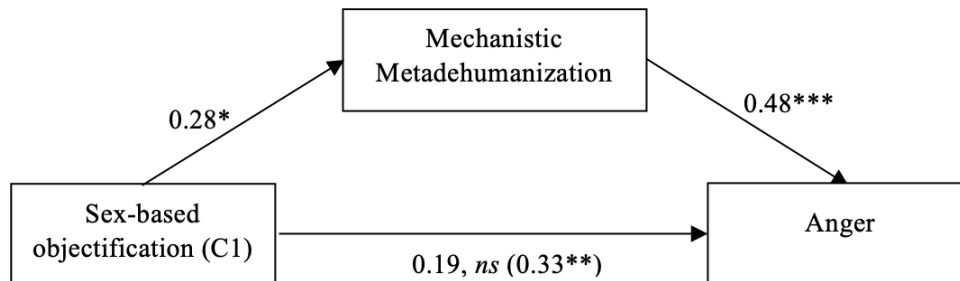


Figure 7. Mechanistic metadehumanization mediates the relationship between sex-based objectification and anger while controlling for C2.

*** $p < .001$; ** $p < .01$; * $p < .05$.

4.3 Discussion

Two main findings replicated across the four studies. First, participants did not report different levels of animalistic metadehumanization across conditions. Second, participants reported being perceived in a mechanistic way when assigned to objectification conditions.

Yet, despite rigorous similar protocols across studies, some results appeared less stable. First, mean differences in mechanistic metadehumanization between sex-based and beauty-based objectification emerged only in Studies 2-3b. Second, results involving emotions also varied. Participants in the sex-based objectification condition reported higher guilt compared to participants in the beauty-based objectification condition, but only in Studies 1-2. Similarly, in Studies 2-3a, participants reported higher levels of anger in the experimental conditions compared to the control one, while in Study 3b participants also reported higher anger in sex-based objectification as compared to beauty-based objectification. Finally, sadness feelings did not vary in Studies 1-2, while participants reported higher levels of sadness in the control condition compared to the objectifying conditions in Studies 3a-b.

5. Integrative Data Analyses

To account for the discrepant results observed in our studies and to test for the stability of observed effects, we turned to integrative data analyses (IDA; Curran & Hussong, 2009). We combined the 4 datasets into one ($N = 569$, aged from 18 to 67 years old, $M = 32.61$, $SD = 11.61$) and ran regressions analyses on this new dataset¹¹. We used the same contrast coding as previous studies for the independent variable (C1: sex-based (1), beauty-based (-

¹¹ We conducted a second IDA without taking into account participants who failed at manipulation check questions. The results of this second IDA is available on OSF through the following link: https://osf.io/9zj7a/?view_only=ccb54549483f42108ac468e7c641a3d3;

1), control (0); C2: sex-based (-1), beauty-based (-1), control (2)). Then, in order to point out possible differences between studies, a second orthogonal contrast coding was created: contrast A (CA) opposed Studies 1 and 3a (both coded -1) to Studies 2 and 3b (both coded 1); contrast B (CB) opposed Study 2 (coded 1) to Study 3b (coded -1), with the Studies 1 and 3a (coded 0); contrast C (CC) opposed Study 1 (coded -1) to Study 3a (coded 1), with Studies 2 and 3b coded 0. All these contrasts were crossed to evaluate if regressions' results vary as a function of studies and conditions.

We first regressed mechanistic metadehumanization on all contrasts. Contrasts related to studies (i.e., CA, CB and CC) and interaction contrasts (i.e., C1*CA, C1*CB etc.) did not reach significance, showing that (1) overall mechanistic metadehumanization did not vary as function of studies nor (2) that the effect of condition on metadehumanization varied across studies. However, results indicate a significant effect of C1 showing, as hypothesized, that participants reported higher levels of mechanistic metadehumanization in the sex-based objectification ($M = 5.08$, $SD = 1.15$) as compared to the beauty-based objectification ($M = 4.75$, $SD = 1.21$), C1: $b = 0.17$, $t = 2.62$, $p = .009$, $\eta^2_p = .01$.

Second, we analyzed the effect of our conditions on emotions. Regarding guilt, results indicated that the interactions between studies and conditions were again not significant, showing that the effect of condition on guilt did not vary across studies¹². Importantly, C1 turned out significant showing that, across studies, participants reported higher levels of guilt in the sex-based objectification condition ($M = 2.59$, $SD = 1.65$) compared to the beauty-based objectification one, ($M = 2.20$, $SD = 1.25$), C1: $b = 0.15$, $t = 2.07$, $p = .03$, $\eta^2_p = .007$.

Turning to anger and sadness, results showed that again the interactions between studies and conditions were not significant. Yet, C2 reached significance for both anger and sadness, showing that participants in the objectifying conditions ($M = 3.46$, $SD = 1.46$) reported significantly higher levels of anger compared to participants in the control one ($M = 3.13$, $SD = 1.46$), C2: $b = -0.10$, $t = -2.63$, $p = .009$, $\eta^2_p = .01$. In contrast, participants reported lower levels of sadness in the objectifying conditions ($M = 3.11$, $SD = 1.52$) compared to the control one ($M = 3.32$, $SD = 1.43$), C2: $b = 0.09$, $t = 1.98$, $p = .048$, $\eta^2_p = .006$.

6. General Discussion

Based on Morris et al.'s (2018) findings, we hypothesized that, from a woman's perspective, sex-based objectification would be associated with animalistic metadehumanization while beauty-based objectification would lead to mechanistic

¹² For all negative emotions (i.e., anger, sadness and guilt), the contrast CA reached significance, showing that participants reported overall higher levels negative emotions in Studies 1 and 3a as compared to Studies 2 and 3b. The contrast CC also reached significance, showing that participants reported higher levels of negative emotions in Study 1 as compared to Study 3a.

metadehumanization. Study 1's results did not confirm these hypotheses and suggested alternative effects of sex- and beauty-based objectification on metadehumanization. We conducted three more studies and showed that women reported higher levels of mechanistic metadehumanization when confronted with objectifying experiences. That is, victims of objectification uniformly experience mechanistic metadehumanization whatever the form of objectification they face. Consistently with general metaphors in the society (Bartky, 1990), objectification instances lead women to report being treated as non-human, superficial, unemotional. In addition to this general effect, women reported higher levels of mechanistic metadehumanization when apprehended as sexual object compared to situations in which the focus is on their physical appearance and beauty. These results suggest that, from a women's perspective, the two forms of objectification fall on a continuum rather than represent two independent types of treatments. On this continuum, sex-based experiences trigger higher metadehumanization feelings than beauty-based ones but both relate to object-like meta-perceptions. This interpretation is in line with the unexpected finding observed in our manipulation checks. Indeed, many of our participants in the beauty-based condition interpreted the situation they reported as sexually connoted or reported sexually connoted memories, but still reported higher mechanistic metadehumanization. Although unexpected, this result does not impair the main findings of our paper. Thus, if our first expectations had been observed in our data, then being apprehended as a sexual object would have enhanced animalistic metadehumanization rather than mechanistic metadehumanization. Yet, animalistic metadehumanization remains stable across the three conditions in all of our four studies.

We suggest that there are two main reasons why women may not report animalistic metadehumanization following sex-based objectification experiences. First, women may be reluctant to think they are denied HU characteristics because sex-based objectification might increase mortality salience due to the focus that is put on body parts that are involved in reproductive functions. Such a focus would increase awareness of one's animal nature and the threatening idea that one is fated to death (Goldenberg, Heflick, Vaes, Motyl, & Greenberg, 2009). Research findings indeed have shown that an increase in the salience of animal functions leads to heightened death-thoughts accessibility (i.e., mortality salience; Cox, Goldenberg, Pyszczynski & Weise, 2006). In the same line, research has shown that when mortality salience and biological functions (i.e., pregnancy, breastfeeding and menstruations) are made salient, women attribute less HN characteristics to the self (i.e., mechanistic self-dehumanization; Morris, Goldenberg & Heflick, 2014) and accept more readily to be perceived in a mechanistic way (Goldenberg et al., 2009). Although these previous research efforts have focused on self-dehumanization, the same kind of effects could also apply to meta-perceptions.

Second, sex-based objectification might trigger higher levels of metadehumanization than beauty-based instances because of social norms. Indeed, in Western societies, women are often praised for being beautiful, but not for presenting themselves as sexualized object (Infanger, Rudman, & Sczesny, 2016). Consequently, situations in which observers focus on their beauty are experienced as less dehumanizing than situations in which they are

treated as sexual objects, because it partly matches with social requirements. Moreover, if the tendency is to find beauty-based objectification more acceptable than sex-based objectification, one could expect that women associate sex-based objectification with a degrading experience.

Our findings also point out the specific effects of sex-based objectification on negative emotions. Indeed, women report higher guilt after being objectified in a sex-based manner, which is reminiscent of findings on sexual victimization (i.e., sexual harassments and sexual assaults). For instance, Vidal and Petrak (2007) found that up to 75% of victims report being ashamed following sexual assault. Similarly, acts of sexual victimization are largely unreported to authorities and around 98% of unwanted sexual contacts are not disclosed to the police (Rennison, 1999). Such lack of disclosure is related to victims' self-blame, shame and guilt feelings (Weiss, 2010). Thus, to the extent that sex-based objectification leads to higher guilt, one could expect it to produce more deleterious consequences for women's psychological functioning than beauty-based objectification.

Unexpectedly, IDA's results showed that both sex- and beauty-based objectifications elicit higher levels of anger and lower levels of sadness than the control condition. The three conditions thus elicit specific emotional responses, which is interesting in light of coping strategies. Anger (vs. sadness) leads participants to report active (vs. passive) coping strategies such as confronting the perpetrator (Shepherd, 2018). Both metadehumanization and negative emotions could thus mediate the relationship between objectifying experiences and coping strategies. The occurrence of guilt following sex-based objectification might inhibit active coping strategies and promote passive or avoidance responses such as self-blame (Gibson & Leitenberg, 2001; Shepherd, 2018; Street, Gibson, & Holohan, 2005). This is particularly interesting when considering the results from mediation models emphasizing the key role of mechanistic metadehumanization in the occurrence of anger and guilt feelings. Mechanistic metadehumanization had already been found as a mediator in the relationship between interpersonal maltreatments and anger (Bastian & Haslam, 2011; Zhang et al., 2017), but not as a mediator in the relationship between interpersonal maltreatments (i.e., sex-based objectification here) and guilt.

6.1 Limitations and Futures Directions

The use of autobiographical recalls to manipulate objectification, despite its ecological value, do not constitute a direct manipulation of the concepts. Beauty-based objectification is often contaminated by sex-based objectification in the reported memories, suggesting that, from a victim perspective, sex-based and beauty-based experiences might simply represent different intensity of the same experience. Future studies should thus more directly manipulate sex-based and beauty-based objectifications to test whether, for victims (but not perpetrators), sex- and beauty-based objectifications represent different intensities of a similar experience.

Moreover, even if some studies already highlight the predictive role of metadehumanization in the occurrence of negative emotions (i.e., anger, sadness and guilt)

through experimental design (Bastian & Haslam, 2011; Zhang et al., 2017), we did not experimentally manipulate metadehumanization in our studies. Consequently, our mediation analyses should be interpreted with cautious insofar as the relationship between metadehumanization (the mediator) and emotions (the dependent variables) is correlational rather than causal (Bullock, Green, & Ha, 2010; Pirlott & MacKinnon, 2016).

More generally, the consequences of metadehumanization among victims should be more intensely investigated, particularly in light of interpersonal interactions. Indeed, metadehumanization negatively influences intergroup relations (Kteily et al., 2016) and the mismatch between victims' and perpetrators' perceptions during gender objectification episodes regarding dehumanization might trigger gender misunderstandings and impact gender harmony (Shelton, Dovidio, Hebl, & Richeson, 2013). Future studies should thus investigate variables related to aggressive behaviors and intergroup misunderstandings (i.e., perceived positivity of gender interactions).

Future research could also envisage victims' understanding of and reactions to objectification in different contexts, notably in relation with variations in psychological intimacy, as participants report being less objectified when objectification comes from their partners rather than from strangers (Lameiras-Fernández, Fiske, Fernández, & Lopez, 2018). Objectification might be interpreted differently (in a sex- versus in a beauty-based way) depending on context and psychological intimacy might moderate metadehumanization.

6.2 Conclusion

Our work offers the first insights on the relationship between objectifying treatments and metadehumanization perceptions among women. Our results show important differences in perceptions between perpetrators of sex-based objectification and their victims: while the formers perceive their victims as under-evolved animals or children, we show that the latter actually feel treated as emotionless objects. Such a discrepancy is likely to increase the often-observed inter-gender misunderstandings. In addition, the guilt and self-blaming emotions that victims of sex-based objectification experienced in our studies should be further considered as a factor of impeaching voice and collective actions against women's long mistreatment.

Chapter 8

General Discussion

General Discussion

The sexual objectification and dehumanization literatures have one thing in common: further studies are needed to better apprehend the full spectrum of these two theories. First, the sexual objectification literature proposes that the exposure to such objectification might occur through either media or interpersonal and social encounters. However, to date, empirical studies have mainly understood sexual objectification experiences as situations in which women are considered as passive victims being exposed to sexually objectified women. As reported in the introduction section, research has mainly investigated the consequences of being exposed to sexual objectification through media encounters, even though such objectification frequently occurs in interpersonal and social encounters (e.g., Holland et al., 2017; Swim et al., 2001). Following the theoretical propositions of objectification theory (Fredrickson & Roberts, 1997), research has mainly examined the consequences of sexual objectification on women's perceptions of their physical appearance (e.g., self-objectification, body shame, body surveillance etc.), cognitive performance, and mental and sexual health risks. Broadly speaking, research suggests that both forms of sexual objectification (i.e., through media and interpersonal encounters) have the same effects on these outcomes. However, there is a regrettable absence of studies investigating the consequences of sexual objectification in interpersonal and social contexts on how women believe they are perceived by others when sexually objectified and the consequences of such perception for ensuing interactions.

Second, regarding the dehumanization literature, the introduction section highlights the distinction between the perpetrators' and victims' perspectives. To date, research has mainly investigated what induces dehumanizing perceptions of others and the consequences of such dehumanization from the perpetrators' perspective (i.e., that of the individuals who hold dehumanizing perceptions of others). Consequently, the victims' perspective (i.e., that of the persons targeted by dehumanizing perceptions) remains understudied, providing less knowledge on what induces dehumanizing perceptions in the eyes of victims and their consequences. Indeed, as mentioned in the introduction section, very few studies have investigated perceptions of being dehumanized, that is, metadehumanization processes, from the victims' perspective. Although the area of metadehumanization has recently been somewhat in vogue (e.g., Demoulin et al., 2020; Landry et al., 2021; Pavetich & Stathi, 2021), studies investigating its processes remain scarce. Yet, current research findings have consistently suggested that metadehumanization is triggered when people are victims of interpersonal maltreatments and is associated with various negative consequences for emotional states, self-esteem, and interpersonal relationships (Demoulin et al., 2021). In light of these initial considerations, the dehumanization literature would benefit from future research in which metadehumanization is considered as a mediating process between interpersonal maltreatments and the negative consequences mentioned above.

Broadly speaking, further studies still have to understand the consequences of interpersonal sexual objectification and dehumanization processes from the victims' perspective. The following section explains why connecting the interpersonal sexual objectification and dehumanization literatures from the victims' perspective is suitable to fill the two gaps highlighted above as well as providing more knowledge in both fields.

1. The main objectives of the present thesis

First, in order to address the first limit outlined above, the present thesis aimed at investigating the interpersonal form of sexual objectification and its consequences on women's meta-perceptions. To date, despite the pervasiveness of the phenomenon (e.g., Holland et al., 2017; Swim et al., 2001), research has largely neglected the study of the consequences of interpersonal sexual objectification (Gervais et al., 2020). Particularly, studies have neglected its effect on the way women believe they are perceived when sexually objectified by others. The studies described in the present thesis thus operationalized sexual objectification through interpersonal encounters (rather than media encounters) and explored its consequences on women's meta-perceptions. This kind of operationalization offers a more comprehensive view of sexual objectification processes when they occur in social and interpersonal situations. Quite interestingly, many research findings encourage us to examine a specific form of meta-perception, namely of being treated as less than fully human by others (i.e., metadehumanization).

The metadehumanization of women when they are targeted by sexually objectifying behaviors should be investigated for two principal reasons. First, research has shown that interpersonal maltreatment leads people to feel dehumanized by others (i.e., metadehumanization) (e.g., Bastian & Haslam, 2011; Moor et al., 2013; Renger et al., 2016). One explanation is that interpersonal maltreatment frequently implies the denial of people's fundamental human needs (i.e., for autonomy/control, competence/self-efficacy, and relatedness) (Demoulin et al., 2020). In light of previous studies, one could suggest that sexual objectification in interpersonal encounters may constitute a form of interpersonal maltreatment in which people's needs are denied by perpetrators. Indeed, interpersonal sexual objectification might be thought of as a form of interpersonal maltreatment as it refers to situations in which people are seen through the prism of their physical appearance, and other aspects are neglected.

Second, the link between sexual objectification and dehumanization has already been investigated from the perpetrators' perspective but there has been less research from the victims' perspective. Research has, for example, examined people's perceptions of sexually objectified women and, in light of the emergence of theories of dehumanization, scholars have sought to determine whether sexual objectification affects the attribution of human characteristics to sexually objectified women (e.g., Morris et al., 2018; Rudman & Mescher, 2012; Vaes et al., 2011). In fact, studies have consistently shown that sexually objectified female targets are viewed as less than fully human through the denial of human uniqueness and human nature traits. Evidence of the association of sexually objectified

women with objects/robots and animals suggests both animalistic and mechanistic dehumanization. These findings pave the way for the study of women's dehumanizing-related perceptions when they are personally targeted by sexual objectification. Moreover, and of interest considering the second limitation highlighted above, the investigation of dehumanizing-related perceptions from the victims' perspective will also generate more knowledge about dehumanization processes from this perspective.

The study of dehumanization from the victims' perspective could lead to an investigation of either metadehumanization (i.e., people's perceptions of how they are perceived by others in terms of humanity) or self-dehumanization (i.e., self-perceptions of one's own humanity). Although few in number, pioneer works have shown that these two variables could be impacted by interpersonal sexual objectification; indeed, studies have suggested that both self-dehumanization (Loughnan et al., 2017, Study 1) and metadehumanization (Moor et al., 2013) might be increased following such experiences. As stated in the introduction section, Kozee et al. (2007) distinguished two forms of interpersonal sexual objectification behaviors. The body evaluation dimension specifically refers to situations in which someone focuses on women's physical appearance through gazing, appearance-related comments, or catcalls, whereas the unwanted sexual advances dimension refers to more severe forms of sexual objectification, such as sexual harassment or unwanted touching. To date, only the unwanted sexual advances dimension is known to trigger metadehumanization among victims. Moor and colleagues (2013) showed that when participants are targeted by extreme forms of sexual objectification (i.e., rape and sexual harassment) they report higher levels of being stripped of their humanity. Their study highlighted the link between interpersonal sexual objectification and metadehumanization and thus lent weight to the importance of investigating metadehumanization following experiences of interpersonal sexual objectification. Despite this, no research has been conducted to investigate the way women believe they are perceived by the perpetrators when they are personally targeted by subtler forms of sexually objectifying behaviors in which there is a focus on their physical appearance.

Hence, in light of the above, we decided to investigate metadehumanization when women are confronted with subtle forms of sexually objectifying behaviors. This investigation helped us address the second limitation highlighted above by providing more knowledge of metadehumanization processes. First, we investigated a new potential antecedent of metadehumanization, namely subtle forms of interpersonal sexual objectification experience. Second, we examined the mediating role of metadehumanization in the relationship between interpersonal sexual objectification and the consequences of metadehumanization. We investigated both emotional consequences and interpersonal perceptions following an increase in metadehumanization. These two types of consequence are particularly important because they are known to determine the interpersonal relationships that follow (e.g., Kteily & Bruneau, 2017; Kteily et al., 2016; Landry et al., 2021; Shepherd, 2018; Shepherd & Evans, 2019).

More concretely, the present study aimed to determine whether women believe they are dehumanized when others focus on their physical appearance. To answer this question, we operationalized sexual objectification in interpersonal and social encounters through the use of experimental manipulations in which women were exposed to / had to report situations in which they are/were targeted by sexually objectifying behaviors. This allowed us to explore women's metadehumanization when their physical appearance was made salient. In light of research that has already investigated the consequences of metadehumanization, the present thesis also examined the mediating role of metadehumanization in the relationship between interpersonal sexual objectification experiences and diverse outcomes (e.g., negative emotions, reciprocal dehumanization, and interpersonal interactions). In a nutshell, this research project aimed to enlarge knowledge of both interpersonal sexual objectification and dehumanization from the victims' perspective through the investigation of the link between sexual objectification in interpersonal interactions and metadehumanization, as well as its consequences for victims.

2. Summary of the research findings

Chapter 4 reported the first three studies in which we investigated the link between sexual objectification experiences and metadehumanization from the victims' perspective. The results of these studies confirmed that when female participants were confronted with someone else focusing on their physical appearance (i.e., interpersonal sexual objectification), they thought that they were denied human characteristics by the perpetrator (i.e., metadehumanization). This first step of our research project showed that interpersonal sexual objectification experiences were an antecedent of metadehumanization. Studies 2 and 3 also investigated women's emotional states as previous studies have frequently shown that metadehumanization increases negative emotions such as anger, sadness, and guilt among victims (e.g., Bastian & Haslam, 2011; Demoulin et al., 2020; Zhang et al., 2017). The results of these two studies showed that sexual objectification experiences increased women's negative emotions, particularly anger and sadness, via metadehumanization. This chapter thus highlighted that sexual objectification was an antecedent of metadehumanization, which in turn predicted anger and sadness feelings among victims.

Chapter 5 aimed at investigating the interpersonal consequences of sexual objectification experiences and metadehumanization. Previous studies are still inconclusive concerning the way interpersonal forms of sexual objectification affect interpersonal relationships (Garcia et al., 2016; Gervais et al., 2011; Teng et al., 2015). That is, we still do not know if being sexually objectified by someone else undermines or increases desire of affiliation or motivation to interact with the perpetrator. However, taking into account the results of Chapter 4, showing that sexual objectification increased metadehumanization, and past studies showing that metadehumanization has negative consequences for interpersonal and intergroup relationships (e.g., Andrighetto et al., 2016; Kteily et al., 2016; Kteily & Bruneau, 2017; Landry et al., 2021), we hypothesized that participants would be

less motivated to interact with the perpetrator and express pro-social behaviors towards him when he focused on their physical appearance. Moreover, in line with past studies (Kteily et al., 2016; Landry et al., 2021), we proposed that both metadehumanization and perpetrator dehumanization (i.e., reciprocal dehumanization) may explain such effects. First, as evidenced in Chapter 4, we hypothesized that sexual objectification would increase metadehumanization. Second, as studies on meta-perceptions have shown that people tend to reciprocate negative meta-perceptions to their perpetrator(s) (e.g., Kteily et al., 2016; Landry et al., 2021; Owuamalam, Tarrant, Farrow, & Zagefka, 2013), we suggested that interpersonal sexual objectification would trigger dehumanization of the perpetrator in response to metadehumanization. Hence, both metadehumanization and perpetrator dehumanization were expected to successively mediate the negative effect of sexual objectification on interaction motivation (Studies 1 & 2) and pro-social behaviors (Studies 3a & 3b). Replicating Chapter 4's results, sexual objectification increased metadehumanization, but also perpetrator dehumanization. Moreover, in Studies 1 and 2, being sexually objectified by someone else decreased the motivation to interact with the perpetrator, particularly for participants who did not enjoy being sexualized by others (Study 2 only). As predicted, the negative effect of sexual objectification on interaction motivation was explained by an increase in metadehumanization and perpetrator dehumanization. In other words, interpersonal sexual objectification led participants to believe that they were dehumanized by the perpetrator (i.e., metadehumanization), which was, in turn, positively linked with dehumanization of the perpetrator (perpetrator dehumanization) and a decrease in participants' motivation to interact with him. Studies 3a and 3b investigated pro-social behaviors rather than interaction motivation. Unexpectedly, these studies did not replicate the serial mediation highlighted in Studies 1 and 2. More importantly, participants did not express lower levels of pro-social behaviors in the sexual objectification condition. The main postulate to explain this unexpected result is that we used a measure of pro-social behaviors that appealed to the perpetrator's cognitive abilities even though our participants dehumanized him, and potentially neglect his cognitive abilities.

The results of Chapter 6 suggest that social projection processes are probably at play in the attribution of human characteristics to others. Specifically, in this chapter, the relationship between self-dehumanization and women's interlocutor dehumanization varied according to conditions. In particular, we found a positive link between self-dehumanization and dehumanization in the control condition, whereas we found a negative link in the sexual objectification condition. In other words, the attributions of human characteristics to the self and to others positively correlated in positive (or at least neutral) interactions, whereas such attributions negatively correlated in negative interactions. However, this latter result did not appear in Study 1c and needs to be replicated by other studies.

Finally, Chapter 7 investigated a recently introduced distinction between two forms of sexual objectification. According to Morris and Goldenberg (2015), women may be objectified in two different ways, sex-based or beauty-based, depending on which aspect of

the person's physical appearance the perpetrator focuses on. The first kind of objectification appears when people focus on women's sexual body parts whereas the second appears when people focus on women's beauty and physical appearance as a whole. Recently, Morris et al. (2018) showed that when women are objectified through a focus on their sexual attributes (i.e., sex-based objectification), they are denied human uniqueness characteristics (i.e., animalistic dehumanization). However, when women are objectified through a focus on their beauty and physical appearance as a whole (i.e., beauty-based objectification), they are denied human nature characteristics (i.e., mechanistic dehumanization). In Chapter 7, we thus proposed that the dehumanization expressed by the perpetrator against sexually objectified women translates into metadehumanization in the eyes of the victims when they are confronted with sexual objectification. That is, women objectified through a focus on a sexual body part (i.e., sex-based objectification) would believe that they were animalistically dehumanized by the perpetrator (i.e., animalistic metadehumanization). Women objectified through a focus on their physical appearance and beauty (i.e., beauty-based objectification), on the other hand, would believe that they were mechanistically dehumanized (i.e., mechanistic metadehumanization). The results of our studies did not confirm such expectations. Indeed, after four studies using equivalent designs and methods, Integrative Data Analyses (IDA) showed that whatever kind of objectification women were exposed to, they reported higher levels of mechanistic metadehumanization compared to the control condition whereas animalistic metadehumanization remained stable across conditions. It should also be noted that women reported higher levels of mechanistic metadehumanization when they reported memories in which someone else focused on their sexual body parts compared to when they reported memories in which someone else focused on their general physical appearance. This means that, in accordance with the general perception that women are apprehended as objects when "sexually" objectified, they tend to integrate this idea, which is then translated into meta-perceptions. Finally, we investigated the emotional consequences of both forms of objectification. The results of IDA suggest that sex-based objectification led women to report higher levels of guilt than beauty-based objectification. Nevertheless, sex- and beauty-based objectification both increased levels of anger but decreased levels of sadness compared to the control condition. Here again, (mechanistic) metadehumanization mediated the relationships between objectification experiences and negative emotional outcomes.

In view of the results reported above, one could outline a strong and consistent finding across all the studies conducted: When someone else makes women's physical appearance salient, women report higher levels of metadehumanization. The feeling of being denied human characteristics by others appears regardless of how sexual objectification is expressed. Nevertheless, we found that a focus on women's physical appearance and beauty as a whole induces (mechanistic) metadehumanization to a lesser extent than a focus on their sexual body parts. This suggests that sexually objectifying behaviors fall more into a continuum, ranging from subtler to less subtle. Interpersonal sexual objectification experiences may thus be considered as an antecedent of metadehumanization.

The results of the present thesis also gave evidence of the mediating role of metadehumanization in the relationship between sexual objectification and negative emotional states. Although the relationship between metadehumanization and negative emotions is correlational in the present thesis, past studies have already given evidence of the causality between these two variables (Bastian & Haslam, 2011; Zhang et al., 2017), underpinning confidence in the sequential nature of the relationship between these variables. The present thesis also highlights another important process: when people believe they are dehumanized by others, they tend to dehumanize their perpetrators in return (i.e., reciprocal dehumanization), which then predicts a decrease in participants' motivation to interact with their perpetrators. However, here again, the relationship between metadehumanization, perpetrator dehumanization, and interaction motivation is correlational. Although previous studies have already demonstrated the causality of relationships between these variables at intergroup levels (Kteily et al., 2016; Landry et al., 2021), further studies should be conducted to confirm their causality in the context of interpersonal sexual objectification. Finally, the present thesis suggests that the attribution of human characteristics to the self and ones' interlocutor negatively correlates when participants are sexually objectified but positively correlates in neutral interaction, in which there is no focus on women's physical appearance.

3. Limitations and perspectives for future research

As stated above, the present thesis generates new knowledge on both interpersonal sexual objectification and metadehumanization. Although we consistently found that sexual objectification in interpersonal interactions increased women's metadehumanization, our studies had some limitations. The following section will discuss the main limitations of this research project, whether due to the experimental manipulation of sexual objectification, the current limitations of the dehumanization literature, or the way we measured the investigated outcomes.

3.1 Broadening perspectives on interpersonal sexual objectification

As stated above, research has mostly investigated the consequences of sexual objectification through media encounters, neglecting the consequences of interpersonal sexual objectification (Gervais et al., 2020). Nevertheless, people, and particularly women, are frequently targeted by sexual objectification in interpersonal and social encounters, receiving appearance-related comments, catcalls, and an insistent male gaze (Holland et al., 2017; Swim et al., 2001). To date, research that investigated the consequences of interpersonal sexual objectification on women has examined its consequences on outcomes that have previously been theorized in objectification theory (Fredrickson & Roberts, 1997), that is, the way women perceive their physical self, their mental and sexual health, and their cognitive performance. The present thesis aimed to give new perspectives on the effect of interpersonal sexual objectification on women's meta-perceptions. Although in

line with experiments carried out by prior researchers, our manipulations had limitations that could be interesting to address in future studies. More broadly, the three following sections explain why and how the manipulations we employed could be improved through more complex designs, more inclusivity, and a greater variety of situations used to induce sexual objectification.

3.1.1 The manipulation of interpersonal sexual objectification experiences

In the present thesis, we manipulated sexual objectification at interpersonal levels in order to examine its effects on metadehumanization. Even though various studies have already manipulated interpersonal sexual objectification, we used a new, innovative, and ecological way to induce a focus on participants' physical appearance in the manipulations reported in Chapters 4, 5, and 6. We decided to create an experimental manipulation in which participants were exposed to a new kind of online dating site, as online dating apps are increasingly used in our societies (Rosenfeld & Thomas, 2012). For instance, Smith (2016) showed that 15% of American adults use online dating apps.

More practically, we created an interface through which participants were exposed to the questions a fake user would like to ask them if they agreed to chat to him. Questions were either oriented toward participants' physical appearance or related to diverse topics (e.g., family and friends, hobbies, and professional life). Although interesting because ecological, this kind of manipulation induced neither the belief that the participant would interact with the perpetrator in the future nor a real-life interaction. Hence, it would be relevant to replicate our research findings through manipulations in which a participant is led to believe that she will interact with the person who sexually objectified her.

One way to improve the manipulation of sexual objectification described in Chapters 4, 5, and 6 is to conduct future research in laboratory settings. As in the current study, the manipulation could be presented to participants as an investigation of impression-formation processes. However, unlike online data collection, using a laboratory setting would allow participants to be confronted with the perpetrators of sexual objectification through a real-life "interaction". In fact, the perpetrators would be confederates trained to perpetuate sexual objectification behaviors directed against real participants. Different kinds of manipulation could be used to induce sexual objectification, such as gazing (e.g., Gervais et al., 2011), appearance-related comments/feedback (e.g., Fea & Brannon, 2006; Tiggemann & Boundy, 2008), or even a selection of questions about the participants' physical appearance, which was used in the present thesis. Such procedures would allow us to address the previously stated limitation that the manipulation of sexual objectification was based on a fictitious situation. This way of proceeding would also help us to induce the idea that participants are personally targeted by sexually objectifying behaviors due to their own physical characteristics. Similarly, the "perpetrator" would be more individualized in this kind of manipulation because participants could interact with him "for real".

The manipulation described in Chapter 7 is ecological because we asked participants to report a situation in which they felt sexually objectified by someone else, through a focus on either their sexual body parts or their beauty and physical appearance as a whole. Nevertheless, the recall of autobiographical memories as an experimental manipulation may be controversial, as people do not relate experiences as they were lived in the past. In particular, Bartlett (1932) introduced the notion of reconstructive memory, according to which autobiographical recalls are guided by pre-existing schemas, leading to inaccurate memory recall. Indeed, to report past experiences, people rely not only on episodic memory but also prior general knowledge (Roediger & McDermott, 1995), beliefs, expectations, and stereotypes (Chatard, Guimond, & Selimbegovic, 2007; Guimond & Roussel, 2001). The more people aim to report old memories, the more they rely on reconstructive memory biases (Willard & Gramzow, 2008). It is thus possible that participants' expectations and beliefs guided the recall of the specific situations we asked them to report, and such effects were stronger when participants reported old memories. For instance, sexually objectifying behaviors are expected to be mostly perpetrated by (unknown) men in public spaces, which might have guided the recollection and/or encouraged the reconstruction of reported memories in accordance with these pre-existing expectations. Finally, the use of autobiographical memory tasks to report specific situations and thus induce specific associated emotional states is known to have some limitations. More precisely, Autobiographical Emotional Memory Tasks (AEMT) have frequently been used to experimentally trigger specific emotional reactions among participants through the recall of specific autobiographical memories. However, research has shown that in addition to the activation of the intended emotion, incidental emotions can also be activated. For instance, Mills and D'Mello (2014) found that anger was successfully activated when participants reported angry experiences, but sadness and disgust were triggered as well. Similarly, the recall of sad experiences induces anger, fear, and disgust in addition to feelings of sadness (for a meta-analysis, see Joseph, Chan, Heintzelman, Tay, Diener, & Scotney, 2020). On the basis of such results, we can consider that the recall of specific autobiographical situations may also activate other past experiences and induce bias in the measurements subsequently used.

Beyond the limitations mentioned above, future research should broaden our perspective on sexual objectification. Indeed, although the present thesis opens innovative research avenues, we failed to investigate the full spectrum of sexual objectification and its consequences on metadehumanization processes. As stated in the introduction section, the links between subtle forms of sexual objectification and metadehumanization have never been investigated from the victims' perspective. Inasmuch as sexual objectification experiences are more frequently committed against women than against men (Swim et al., 2001), we decided to examine women's metadehumanization after a focus on their physical appearance. Particularly, as reported in the first three empirical chapters, a male perpetrator sexually objectified our female participants. Therefore, and as we also narrowed our studies to the investigation of the women's perspective when sexually objectified, our work may appear quite heteronormative and gender-stereotyped. Hence, the following sections

Do you feel perceived as a full human being when you are treated as a body?

explain how future research could enlarge our findings through the investigation of new perspectives.

3.1.2 The investigation of interpersonal sexual objectification's consequences among men

Firstly, research has shown that men are increasingly subject to sexual objectification. Consequently, scholars have called for studies on the sexual objectification of men in order to determine the full spectrum of sexual objectification (e.g., Heimerdinger-Edwards, Vogel, & Hammer, 2011; Michaels, Parent, & Moradi, 2013). Research findings indicate that, like women, men are confronted with sexual objectification through two main vectors: media encounters and social interactions. For instance, research findings suggest that men are sexually objectified in advertisements (Rohlinger, 2002). Interestingly, men report being sexually objectified through interpersonal and social interactions (Engeln-Maddox et al., 2011; Wiseman & Moradi, 2010). More specifically, sexual minority men report unwanted sexual advances through social interactions (Wiseman & Moradi, 2010), whereas both gay and heterosexual men experience body evaluation behaviors (i.e., gazing, comments, etc.) (Engeln-Maddox et al., 2011). In line with such research findings, future studies should investigate how men think they are perceived when someone else focuses on their physical appearance and bodies, in particular when they are confronted with body evaluation behaviors or unwanted sexual advances. Nevertheless, due to the difference in the body image ideals of men and women, sexual objectification applies to women and men differently in their daily lives. Specifically, the importance of muscularity is more relevant for men (Daniel & Bridges, 2010; Parent & Moradi, 2011). Hence, the manipulation of sexual objectification should be tailored to participants' gender. Yet, one could hypothesize that when male participants are sexually objectified in interpersonal and social encounters, they will report higher levels of metadehumanization than non-objectified male participants.

3.1.3 The influence of perpetrators' characteristics and participants' sexual orientation

Future research could also investigate the impact of perpetrators' gender and participants' sexual orientation in the relationship between sexual objectification and metadehumanization processes. In regard to this perspective, different research findings could be considered.

On the one hand, it is possible that the effect of sexually objectifying behaviors on metadehumanization occurs independently of perpetrators' gender. Indeed, if sexual objectification experiences trigger metadehumanization because they undermine fundamental human needs, people will report higher levels of metadehumanization independently of perpetrators' gender. This is even more likely given the research showing

that both men and women sexually objectify men and women (Strelan & Hargreaves, 2005; see also, Gurung & Chrouser, 2007).

On the other hand, other research findings suggest that the consequences of sexual objectification vary according to perpetrators' gender. For instance, studies suggest that perpetrators' gender plays a central role in sexual objectification processes. Specifically, scholars have used manipulations in which female participants were sexually objectified by male perpetrators (e.g., Calogero, 2004; Gervais et al., 2011; Saguy et al., 2010), some of which indicated the key role played by perpetrators' gender on the effects of interpersonal sexual objectification. For instance, Saguy et al. (2010) manipulated the gender of the alleged interaction partner through gendered pronouns (i.e., he or she). The authors found that when female participants believed that an interaction male partner was focused on their physical appearance, they spent less time talking. However, this effect was not found when female participants believed they were interacting with a female partner. Similarly, Calogero (2004) found that female participants who anticipated a male gaze reported higher levels of body shame and physical anxiety than female participants who anticipated a female gaze. Hence, one could suggest that women interpret the focus on physical appearance differently based on perpetrators' gender. Regarding the importance of perpetrators' gender in the studies reported above, one could hypothesize that when women are sexually objectified by other women, they will not report higher levels of metadehumanization than in situations in which they are sexually objectified by men. This could suggest that many women do not interpret being sexually objectified by another woman in the same way as being objectified in this way by men. One possible reason for this is that they do not think that women perpetrators treat them as sexual objects, denying other aspects of their selves.

However, this heteronormative view of sexually objectifying behaviors remains problematic as it fails to consider the impact of victims' sexual orientation, which could play a key role in their perceptions of sexually objectifying behaviors. Although research has found that heterosexual and lesbian women report similar frequencies of sexual objectification experiences (Hill & Fischer, 2008), some research has also suggested that lesbian women react differently to sexual objectification than heterosexual women, at least on body-related variables (e.g., Hill & Fischer, 2008; Share & Mintz, 2002; Strong, Williamson, Netemeyer, & Geer, 2000). In any case, the metadehumanization of lesbian and heterosexual women following interpersonal sexual objectification remains to be investigated. Research on men's sexual objectification experiences as a function of their sexual orientation also remains underdeveloped. However, it seems that gay men experience higher levels of sexual objectification than those experienced by heterosexual men but similar to those experienced by heterosexual women (Engeln-Maddox et al., 2011), which leads us to think that the investigation of sexual objectification and its consequences for metadehumanization among gay men is also relevant. Here again, the role of perpetrators' gender should be considered.

Finally, another variable could moderate the effect of victims' perceptions of sexually objectifying behaviors, namely psychological intimacy. Indeed, previous studies have shown that women perceived positive sexually objectifying comments as more enjoyable and less sexually objectifying when they were made by their male partners than by strangers, colleagues, and friends (Lameiras-Fernández et al., 2018). These results should encourage researchers to investigate the effects of psychological intimacy between perpetrators and victims in future studies. In particular, if women perceive certain behaviors as less sexually objectifying when committed by their male partners, we suppose that women will report lower levels of metadehumanization following a situation in which their male partners focus on their physical appearance as long as it does not have a negative tone.

3.2 Bringing more precision to the dehumanization literature

As stated before, when considering dehumanization processes, researchers have neglected the victims' point of view. Indeed, few studies have examined antecedents (e.g., Demoulin et al., 2020; Moor et al., 2013; Renger et al., 2016) and consequences (e.g., Andrighetto et al., 2016; Bastian & Haslam, 2011; Demoulin et al., 2020; Kteily & Bruneau, 2017; Kteily et al., 2016; Landry et al., 2021; Sainz et al., 2020) for victims of dehumanization. The present thesis thus aims to provide further knowledge of metadehumanization processes from the victims' perspective. Although our studies yield new perspectives for future dehumanization research, the present study does have limitations. In particular, we were confronted throughout our studies by methodological and theoretical issues that we will discuss in the following sections. A first limit relates to the fact that the relationships we identified between metadehumanization and the investigated outcomes (i.e., emotional states, reciprocal dehumanization, and interpersonal variables) were based on correlations, which prevented us from establishing causality between metadehumanization and the consequences we investigated.

3.2.1 What is the causality between metadehumanization, reciprocal dehumanization, and self-dehumanization?

The present thesis gives evidence of the causal relationship between sexual objectification and metadehumanization from the victims' perspective. To be precise, when participants were exposed to / recalled situations in which they were sexually objectified by someone else, they tended to believe that the perpetrators of such sexually objectifying behaviors perceived them as less than fully human. We then investigated diverse variables, formulating hypotheses about their relationships with sexual objectification and metadehumanization on the basis of previous research findings. Specifically, we decided to examine the consequences that have already been highlighted in metadehumanization research, that is, negative emotional consequences, reciprocal dehumanization, and interpersonal outcomes. In light of past research, we hypothesized that metadehumanization would have negative consequences for interpersonal interactions and trigger reciprocal dehumanization (i.e., perpetrator dehumanization) as well as negative emotional states.

Measuring self-dehumanization following sexual objectification experiences also appeared relevant as past studies have frequently highlighted the co-occurrence of metadehumanization and self-dehumanization following interpersonal maltreatment (e.g., Bastian & Haslam, 2010; Bastian & Haslam, 2011; Renger et al., 2016). The investigation of such variables enabled us to generate more knowledge on the relationships between metadehumanization and these variables.

Inasmuch as past research has already given evidence of the causality between metadehumanization and negative emotions, we have little doubt about the antecedence of metadehumanization on negative emotions. However, we must be more careful about the relationships between metadehumanization, perpetrator dehumanization, and interaction motivations. Indeed, previous research has only found that (ingroup) metadehumanization triggers reciprocal (outgroup) dehumanization, which then increases outgroup hostility at intergroup levels (e.g., Kteily et al., 2016; Landry et al., 2021). Indeed, rather than interaction motivation, these studies investigated the effects of metadehumanization and reciprocal dehumanization on the manifestation of negative behaviors towards outgroup members (i.e., outgroup hostility). Hence, further research is needed to give evidence of the causal relationships according to which both metadehumanization and perpetrator dehumanization sequentially mediate the relationship between sexual objectification and interaction motivation.

Concerning self-dehumanization, previous research suggests that both metadehumanization and self-dehumanization increase when participants are exposed to interpersonal maltreatment (e.g., Renger et al., 2016). For instance, as explained in the introduction section, being socially excluded increases both self-dehumanization and metadehumanization (Bastian & Haslam, 2010; Bastian & Haslam, 2011). Our results highlight another interesting finding. Chapter 6 suggested that the relationship between self-dehumanization and women's interlocutor dehumanization varies according to condition. In the control condition, particularly, self-dehumanization and dehumanization positively correlate whereas they negatively correlate in the sexual objectification condition. Although this is the first time such results have been found in studies investigating dehumanization processes, they seem to be consistent with studies on social projection. Indeed, in both interpersonal (Toma et al., 2010) and intergroup (Riketta & Sacramento, 2008) contexts, research has shown that people use social projection to infer others' characteristics to a higher extent in positive than in negative interactions. For instance, Toma et al. (2010) found that in situations of cooperation (vs. competition), participants projected more self-attributed traits on others. The results we obtained in our studies encourage us to believe that similar processes are at work in dehumanization processes; that is, people rely less on social projection to infer others' humanness characteristics when they are confronted with interpersonal maltreatment. Here again, future research is needed to replicate such findings.

Interestingly, these results would also help researchers to support the distinction between self-objectification and self-dehumanization. As a reminder, self-objectification

occurs when women perceive their physical selves from an observer's perspective, attributing higher importance to their observable body attributes than their non-observable ones. In contrast, self-dehumanization occurs when people see themselves as less than (fully) human, attributing fewer human characteristics to the self. Broadly speaking, self-objectification relates to people's perceptions of their physical self, whereas self-dehumanization relates to people's perceptions of their self-concept as a whole. In light of these definitions, the distinction between these two concepts seems clear, yet there has been some confusion in previous research. Thus, evidence that self-objectification and self-dehumanization are differently impacted by interpersonal sexual objectification experiences could help researchers to establish a clear distinction between self-objectification and self-dehumanization. This is what current research findings suggest. In particular, it has been found that self-objectification increased among women when they were targeted by interpersonal sexual objectification experiences (e.g., Fairchild & Rudman, 2008; Garcia et al., 2016), whereas our research findings showed that self-dehumanization correlated with dehumanization according to condition. More precisely, the attribution of human characteristics to the self and to ones' interlocutor negatively (vs. positively) correlated following sexually objectified interaction (vs. neutral interaction). Hence, future studies could investigate self-objectification and self-dehumanization at the same time in order to confirm their relationships with condition assignment and interlocutor dehumanization. The replication of such relationships in future studies could help researchers to establish a clear distinction between self-objectification and self-dehumanization.

In addition to the limitations related to the nature of the outlined links, other limitations are probably explained by the fact that theories of and research in dehumanization lack structure. Indeed, when scholars have investigated dehumanization processes, they have labeled the same concepts in various ways, relied on diverse theories, and used different items across studies. This has led to inconsistencies and misunderstandings regarding dimensions of dehumanization, metadehumanization processes, and the diversity of dehumanizing perceptions. These limitations are discussed in the following sections.

3.2.2 The dimensions of dehumanization

Another important limitation of the dehumanization literature is the large number of theories within it. As reported in the introduction section, dehumanization has been theorized by many scholars (Gray et al., 2007; Haslam, 2006; Leyens et al., 2003, 2007; Speering & Speering, 2021; Tipler & Ruscher, 2014). For the vast majority of theories, dehumanization is multi-dimensional, being composed of two (e.g., Gray et al., 2007; Haslam, 2006) or three (e.g., Tipler & Ruscher, 2014) dimensions. Consequently, scholars have used measures that actually assess different things to measure dehumanization-related processes. Researchers have most frequently assessed dehumanization-related processes in light of the dual model of dehumanization (Haslam, 2006); that is, they have assessed animalistic and mechanistic forms of dehumanization, whether in reference to dehumanization, metadehumanization, or self-dehumanization. Nonetheless, the literature

lacks consistency regarding the items used across studies and expected dimensions of dehumanization (i.e., one vs. two).

The present thesis also assessed dehumanization-related processes through the dual model of dehumanization (Haslam, 2006). This model has already been applied to research investigating dehumanization processes from the victims' perspective (e.g., Bastian & Haslam, 2010; Bastian & Haslam, 2011; Demoulin & et al., 2020; Renger et al., 2016, Study 2; Ruttan & Lucas, 2018; Yang et al., 2015). Hence, studies measured both metadehumanization (e.g., Bastian & Haslam, 2011; Yang et al., 2015; Sainz et al., 2020) and self-dehumanization (e.g., Bastian, Jetten, Chen, Radke, Harding, & Fasoli, 2012; Bastian & Haslam, 2010; Ruttan & Lucas, 2018) with the dual model of dehumanization. In concrete terms, when people feel dehumanized by others (i.e., report metadehumanization), they believe that they are denied human nature traits (i.e., mechanistic metadehumanization) and/or human uniqueness traits (i.e., animalistic metadehumanization) by others (i.e., groups or individuals). Similarly, when people perceive themselves as less than human (i.e., report self-dehumanization), they deny human nature traits (i.e., mechanistic self-dehumanization) and/or human uniqueness traits (i.e., animalistic self-dehumanization) to the self.

To date, findings of investigations of the victims' perspective have not established a clear and systematic distinction between animalistic and mechanistic dehumanization (for an exception, see Nguyen, Caesens, & Stinglhamber, 2021). Indeed, whether such investigations were interested in metadehumanization or self-dehumanization, the expected two-factor structure solution of the dual model of dehumanization did not systematically emerge following exploratory factorial analyses (e.g., Bastian et al., 2012; Demoulin et al, 2020; Sainz et al., 2020; Tang & Harris, 2015). First, one should note that researchers sometimes measured only the form of metadehumanization relevant to their research project (e.g., animalistic metadehumanization in the context of real-world conflicts; Kteily et al., 2016; Kteily & Bruneau, 2017; Landry et al., 2021; or mechanistic metadehumanization in organizational settings; Caesens et al., 2019; Nguyen et al., 2021; Nguyen & Stinglhamber, 2019), which prevents us from drawing any conclusion about the dimensional nature of dehumanization. More importantly, when researchers have examined the two forms of metadehumanization simultaneously, they have sometimes had to create a single index of metadehumanization to run analyses (e.g., Demoulin et al, 2020; Sainz et al., 2020) because exploratory factorial analyses favor a single-factor structure solution. In the same way, studies investigating animalistic and mechanistic self-dehumanization have often reported single-factor solutions (e.g., Bastian et al., 2012; Tang & Harris, 2015).

As might be expected from a reading of previous work, the factorial structure of metadehumanization was not consistent across the studies undertaken for the present thesis. Across the experiments, we found either one or two factors of metadehumanization. In Chapters 4 and 5, exploratory factorial analyses indicated that metadehumanization items formed a one-factor structure solution, which led us to create a single metadehumanization score. Similarly, in Chapter 6, items assessing self-dehumanization and dehumanization

loaded on a one-factor structure solution. However, we found a two-factor structure solution in Chapter 7, referring to animalistic and mechanistic forms of metadehumanization.

Given such inconsistent results, two principal explanations may be proposed. First, it is possible that from the victims' perspective the two dimensions of dehumanization (i.e., animalistic and mechanistic) make less sense. Being dehumanized is such an aversive experience that the mere fact of being dehumanized by someone else affects both dimensions at a time and prevents participants from distinguishing which precise characteristics are denied to them. This proposition requires further empirical investigation but is consistent with postulates of emotional flooding due to conflicting situations. Introduced in the case of family dysfunction, emotional flooding occurs when people face situations in which they are overwhelmed by their emotions. As a consequence, high-order cognitive processes are disrupted, which leads to people being unable to think in a cognitive, efficient, and complex way (Jones & Bodtker, 2001; Mence et al., 2014). Emotional flooding usually occurs when people perceive a threat to their identity and "feel unfairly attacked, misunderstood, wronged, or righteously indignant" (Jones & Bodtker, 2001, p.228). As part of metadehumanization processes, it has frequently been found that people report being dehumanized by others when they are victims of interpersonal maltreatment in which they are likely to feel unfairly attacked or misunderstood by perpetrators. Furthermore, one could suggest that the exposure to subtle forms of interpersonal sexual objectification behaviors might re-activate previous (and potentially less subtle) experiences of sexual objectification, which might then trigger emotional flooding. For instance, Miles-McLean et al. (2015) already demonstrated the insidious effect of sexual objectification, showing that even subtle forms of interpersonal sexual objectification (i.e., body evaluation behaviors) lead to trauma symptoms, but only for women with a history of sexual trauma.

Nevertheless, exploratory factorial analyses have sometimes given evidence of the two dimensions of dehumanization (like that reported in Chapter 7). Hence, it seems likely that the feeling of being dehumanized by others varies based on situations, as some of them clearly cause either animalistic or mechanistic forms of dehumanization, distinguishable in exploratory factorial analyses, whereas others cause a strong overlap between the two dimensions. For instance, situations in which perpetrators use metaphors referring to animals to designate the victims of dehumanization probably leave little doubt in the eyes of victims about which characteristics are being denied to them. Another possibility is that some situations induce less emotional flooding for the victims, which leaves high-order cognitive processes available to apprehend what characteristics are being denied to them. For instance, being considered as a tool to achieve organizational goals in the workplace may seem more acceptable because it is part of the employee–organization contract. Hence, in such situations, the two dimensions of dehumanization are likely to emerge.

3.2.3 The four declinations of metadehumanization

After reviewing the various forms of perception related to dehumanization processes, we wish to draw attention to the fact that metadehumanization can also be defined in different ways. As a specific form of meta-perception, metadehumanization is likely to be formed in either interpersonal or intergroup interactions/contexts. As indicated by Frey and Tropp (2006), the formation of meta-perceptions can result from “a range of factors that can affect whether people are likely to think they are viewed as individuals or as group members” (p.265). Whether people believe they are perceived as group members or individuals by others will determine the way people perceive others – that is, as individuals or group members. Thus, the perception of the self and other (as individual or group member) leads to the formation of either interpersonal or intergroup meta-perceptions. Based on social identity and self-categorization theories (Tajfel & Turner, 1979; Hogg, 2003), Frey and Tropp (2006) listed situational and individual factors that might influence whether people expect to be viewed as individuals or group members, resulting in the formation of either interpersonal or intergroup meta-perceptions. The salience of group membership, in particular, determines how people see themselves and others and whether intergroup or interpersonal meta-perceptions are formed. More precisely, when group membership is not salient, people see themselves and others as individuals, whereas when group membership is salient, people see themselves and others as group members. Among situational factors, the presence of an intergroup conflict increases the salience of group membership (e.g., Wilder, 1984). Similarly, the mere presence of an outgroup member or the fact of being in a minority among outgroup members also increases the salience of group membership (e.g., Bettencourt, Miller, & Hume, 1999; Crocker & McGraw, 1984). Moreover, contexts in which people might be stigmatized due to the characteristics of their groups are inclined to increase the salience of group membership (e.g., Crocker, Major, & Steele, 1998). Turning to individual factors, the more participants identify with, and are aware of their group membership, the more they will think of themselves and others based on their group membership (e.g., Spears, Doosje, & Ellemers, 1997).

Such theoretical propositions might be applied to the formation of metadehumanization. Specifically, the more group membership is salient, the more people are inclined to form metadehumanization at intergroup levels, viewing the self and others as group members rather than individuals. Consequently, as shown in Figure 1, metadehumanization can be defined in four different ways: 1) the perception of being personally dehumanized by a specific other (interpersonal metadehumanization); 2) the perception of being personally dehumanized by a group or society; 3) the perception that one’s own group is dehumanized by a specific other; and 4) the perception that one’s own group is dehumanized by another group or society (intergroup metadehumanization). Even if intergroup and interpersonal metadehumanization (options 1 and 4) – that is, situations in which people consistently see themselves and others either as group members or as individuals – are probably more frequent than situations in which people’s perceptions of themselves and others differ in terms of group memberships (options 2 and 3), such possibilities need to be theorized.

Do you feel perceived as a full human being when you are treated as a body?

Since the term “metadehumanization” was introduced in the literature, scholars have used it without introducing these various forms. However, due to the methodologies used in previous studies, it appears that researchers have more frequently investigated metadehumanization as defined in option 4, that is, at intergroup levels.

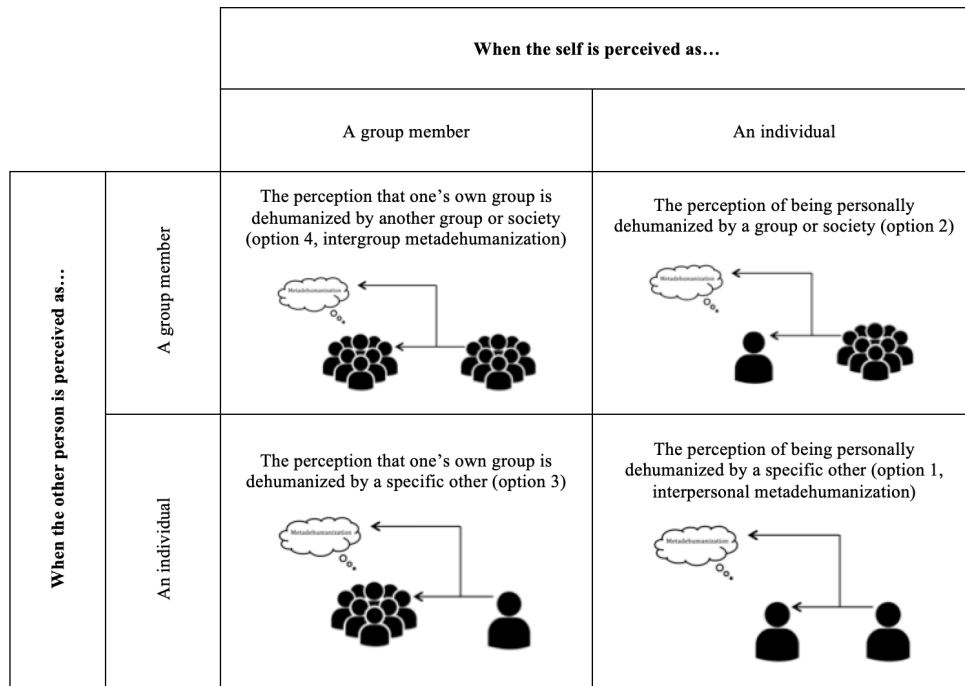


Figure 1. The four dimensions of metadehumanization

Kteily and collaborators (2016) introduced the term through an impressive series of studies in which they examined the consequences of metadehumanization in the context of real-world conflicts. For instance, the authors studied how Americans reacted when they were led to think that they were animalistically dehumanized by Muslims. In this case, the authors explored the perceptions that one's own group is dehumanized by another group or society (that is, option 4). Landry et al. (2021) investigated the same processes in the context of US–Russian relationships. Similarly, Demoulin et al. (2020) activated social identity and group membership through the introduction of items assessing metadehumanization when their participants were encouraged to think of themselves in light of their social identity (i.e., “As a woman, I think/feel that...”). In Study 1b, in particular, the authors evaluated the perceptions of their female participants, who thought they were dehumanized by society, as women. In the same vein, Sainz et al. (2020) recently published an article investigating participants' metadehumanization based on their group membership and related to their socio-economic status (SES) (i.e., low SES vs. high SES).

The authors assessed the perceptions of being dehumanized by others while asking their participants to keep in mind their SES within society. Hence, based on Frey and Tropp's (2006) propositions, these studies measured metadehumanization at intergroup levels due to the "induced" salience of group membership, which is expected to lead people to see themselves and others based on their group membership. Finally, Kteily and Bruneau (2017) turned to disadvantaged minority groups, investigating whether Latinos felt dehumanized by the Republican Party and Donald Trump (Study 2a) and whether Muslims felt dehumanized by Donald Trump and non-Muslim Americans (Study 2b). In this case, Trump's group membership of the Republican Party was probably salient due to the design itself. Indeed, in Study 2a Donald Trump was no less than the representative of the Republican Party. Hence, it is highly probable that Kteily and Bruneau (2017) also investigated metadehumanization at intergroup levels, as the mere activation of individuals' group membership is inclined to increase the propensity to form intergroup meta-perceptions.

Thus, contrary to meta-perception formation processes, which have been primarily investigated through interpersonal relationships (Frey & Tropp, 2006), metadehumanization has been primarily investigated in intergroup contexts (i.e., those in which perpetrators and victims are seen as group members) rather than interpersonal ones (i.e., in which perpetrators and victims are seen as individuals). In our studies, it is likely that the participants believed that they were sexually objectified because of their membership of the "female category" rather than because of their own / specific (physical) characteristics. The main argument was that "the perpetrator" did not receive a picture to see what the female participant looked like before asking questions about their physical appearance. In this way, the selected questions were not specifically directed to the female participant, who did not receive personalized questions (e.g., "You look nice in this shirt"). Besides, the male perpetrator was probably seen as a representative of the "male category". Indeed, in the experiments described in Chapters 4, 5 and 6, our female participants did not have any personal information about him. Thus, as in previously cited papers, we probably saw metadehumanization at intergroup levels, particularly in the research presented in Chapters 4, 5 and 6. Nevertheless, we cannot draw any conclusions regarding our last empirical chapter because the instructions left participants free to recall a real-life situation of their choice. In these studies, participants may have seen the perpetrator either as a representative of the male category (e.g., a stranger walking down the street) or a specific individual (e.g., a friend, a boyfriend, a relative etc.). Indeed, some of them reported situations in which they were sexually objectified in the street, whereas others reported situations in which their boyfriends sexually objectified them. The major change from previous empirical chapters was that the sexually objectifying behaviors were directed at them, probably due to their own physical appearance. Hence, it is possible that in the studies reported in Chapter 7, participants reported their perceptions of being personally dehumanized because they were targeted by the sexual objectification experiences they recalled.

Considering the observation that metadehumanization has mostly been investigated in intergroup contexts, it is important to disentangle the four different forms of metadehumanization in future studies, as well as their specific consequences. In particular, understanding how metadehumanization occurs in interpersonal contexts would provide new research perspectives. For instance, in light of the literature on discrimination (e.g., Postmes & Branscombe, 2002; Sellers & Shelton, 2003; Smith & Ortiz, 2002), one could suggest that being personally targeted by dehumanization (i.e., interpersonal metadehumanization) would have more deleterious consequences for individuals' self-concept and wellbeing than situations in which people are denied human characteristics due to their group membership (i.e., intergroup metadehumanization). The literature on discrimination has already distinguished personal and group discrimination, which has enabled researchers to understand the effect of the two dimensions of discrimination on self-esteem. In particular, it has been found that being personally targeted by discrimination (i.e., personal discrimination) has negative consequences for self-esteem, whereas the perception that one's group is discriminated (i.e., group discrimination) is positively linked to individuals' self-esteem (Bourguignon, Seron, Yzerbyt, & Herman, 2006). Moreover, the negative effect of personal discrimination on self-esteem becomes stronger when group identification is controlled for. This distinction in metadehumanization processes should encourage researchers to examine the effects of interpersonal and intergroup metadehumanization on participants' self-perceptions, such as self-esteem and self-dehumanization. Thus, it remains difficult to state whether people may be dehumanized by a specific other due to their own characteristics, as no research has yet been carried out on this point. Future studies could hypothesize that the perceptions of being personally targeted by dehumanization have more deleterious consequences for participants' self-esteem and participants' self-attribution of human characteristics than situations in which people perceive they are dehumanized due to their group membership.

Finally, in order to conclude with a broader theoretical discussion about the dehumanization literature, attention should be drawn to the diversity of dehumanizing perceptions as well as inconsistencies in terminology used across studies. Hence, we wish to emphasize the importance of using specific terms to refer to each form of dehumanizing-related perceptions mentioned in the present document.

3.2.4 The diversity of dehumanizing perceptions: dehumanization, metadehumanization, self-dehumanization

As stated above, research on dehumanization processes has mainly focused on the perpetrators' perspective; that is, studies have focused on the antecedents and consequences of dehumanization from such perspective (i.e., what generates dehumanization and its influence on ensuing perpetrators' behaviors). The investigation of the victims' perspective is still relatively new, and confusing terms have been employed across studies (i.e., dehumanization, metadehumanization, self-dehumanization, dehumanization experiences, perceived treatment as a human, etc.). In particular, the terms dehumanization,

metadehumanization, and self-dehumanization have sometimes been employed inappropriately or interchangeably. If dehumanization is the most popular term and has been used to refer to the perceptions someone has of others' humanity, it has also been employed in studies that actually examined metadehumanization (e.g., Bastian & Haslam, 2011; Zhang et al., 2017) or self-dehumanization (e.g., Bastian & Haslam, 2010; Bastian et al., 2012) processes, which might be confusing. Hence, a more consistent use of these terms in line with what is really being investigated in studies could clarify the dehumanization literature.

According to Haslam (2006), dehumanization occurs when people deny humanness to others. Hence, we propose that the term dehumanization should be used only for studies in which scholars examine people's dehumanizing perceptions of others (e.g., I think that the other(s) is/are mature (r)). Similarly, in accordance with the definitions proposed by Kteily et al. (2016) and Demoulin et al. (2021), metadehumanization refers to the perceptions of being perceived as less than fully human by others. Hence, it would be preferable to use the term metadehumanization when investigating people's perceptions of being dehumanized by others (e.g., I think I was perceived as an immature person). Finally, self-dehumanization refers to perceptions of one's own humanity (Bastian & Crimston, 2014) and occurs when people see themselves as less than fully human (Demoulin et al., 2021). Self-dehumanization should thus be employed when studying the incorporation of dehumanizing perceptions in people's self-concept (e.g., I think that I am mature (r)). Consistent use of such concepts would help to make the literature more understandable and facilitate the understanding of studies in the field of dehumanization.

3.3 Integrating literatures on sexual objectification and metadehumanization to investigate women's coping strategies

In addition to the study of pro-social behaviors already explored in the present thesis, women's behavioral reactions, such as coping strategies following sexual objectification experiences, and metadehumanization should be investigated. Expectations may be formulated based on studies that have already examined how victims react to sexual objectification experiences and metadehumanization. Regarding relationships between metadehumanization and coping strategies, Demoulin et al. (2020) demonstrated a positive correlation between metadehumanization and women's use of both active and avoidance coping strategies. These results suggest that women engage in both strategies that might induce a change in the status quo and in those that have no effect on it. Yet, we have shown that sexual objectification increases women's dehumanization of their perpetrator, which could induce more active than passive behavioral responses following sexual objectification. Indeed, as dehumanization is known to trigger aggressiveness and hostility towards perpetrator(s) (e.g., Andrighetto et al., 2016; Kteily et al., 2016; Landry et al., 2021), one could expect that sexually objectified women would be inclined to react with active coping strategies or even aggressiveness to the extent that they dehumanize their perpetrators. The occurrence of active coping strategies has also been highlighted in studies

on gender discrimination, showing that such experiences motivate women to engage in active coping strategies (i.e., collective action; Iyer & Ryan, 2009). Closer to our interest, Guizzo et al. (2017) showed that exposure to a critique video of sexual objectification increased women's intention to react and protest against sexual objectification (see also, Chaudoir & Quinn, 2010).

Nevertheless, research on women's reactions when personally targeted by interpersonal sexual objectification should also be taken into account to formulate hypotheses regarding the way they react and use coping strategies. First, the gender dynamic frequently at play in interpersonal sexual objectification situations should not be neglected. Gender roles have assigned women a submissive role as they have been socialized to behave in a way that encourages positive social interactions (Jack & Dill, 1992; Jack 2011). Thus, in order to maintain good relationships with others, particularly with men, women will have a higher tendency toward self-silencing, censoring their thoughts, feelings, and actions (Norris, Nurius, & Dimeff, 1996). As a consequence, research has found that women have difficulties reacting to and confronting their perpetrators when they are confronted with sexist situations, comments, and behaviors (Swim, Eysell, Murdoch, & Ferguson, 2010; Swim & Hyers, 1999). Moreover, research on women's reactions to sexual harassment has shown that women mainly use passive coping strategies when sexually harassed, such as ignorance and avoidance of perpetrators (Magley, 2002). Fear of sexual assault probably explains the way women react to such experiences (Fairchild and Rudman, 2008; Hickman & Muehlenhard, 1997; Warr, 1985; for a review, see Swim, Cohen, & Hyers, 1998). Research also indicates that sexually objectified women narrow their presence in social interactions (Sáez et al., 2020; Saguy et al., 2010). All in all, these research findings suggest that women also have a high propensity to adopt passive coping strategies when confronted with sexual objectification. This hypothesis is in line with Moor and colleagues' (2013) research showing that metadehumanization reported by victims of sexual harassment and sexual assault increases victims' behavioral inhibition during assaults.

In light of these research findings, it remains difficult to formulate hypotheses regarding the way women react to sexual objectification experiences. Nevertheless, their emotional reactions probably play a key role in such reactions. For instance, in studies conducted by Guizzo et al. (2017), women's propensity to react against sexual objectification after exposure to a critique video of sexual objectification was determined by group-based anger. Similarly, Chaudoir and Quinn (2010) found that exposure to sexually objectifying catcalls directed towards another woman increased female participants' intention to move away and move against men, but only their intention to move against men was explained by group-based anger. Similarly, when women reported being personally targeted by sexual objectification, they reported higher willingness to engage in collective action against the sexual objectification of women through group-based anger (Shepherd & Evans, 2019). More generally, Shepherd (2018) found that anger predicted active response towards perpetrators (i.e., confronting the perpetrator) whereas shame predicted self-blame following sexual objectification. Taken together, these research findings lead us to hypothesize that women's emotional reactions to sexual objectification will determine the

way they will react to it (e.g., protestation vs. resignation) as well as their reactions towards perpetrators (e.g., confrontation vs. avoidance). For instance, future studies could test the hypothesis according to which fear and shame/guilt induce avoidance coping strategies (i.e., avoidance of perpetrators and resignation with regard to sexual objectification behaviors) whereas anger induces active coping strategies (i.e., confrontation of perpetrators and protest against sexual objectification behaviors).

4. Conclusion

Women are frequently confronted with situations in which their physical appearance attracts the attention of others. Through people's gazing, comments, or questions and through sexual harassment, women's physical appearance and (sexual) body parts are made salient in social and interpersonal interactions. Past research has usually outlined the effect of such situations on women's perceptions of their physical appearance (e.g., Calogero et al., 2009; Fairchild & Rudman, 2008; Garcia et al., 2016). Nevertheless, and rather surprisingly, its effects on interpersonal perceptions and relationships have long been ignored. Similarly, research on the victims' perspective in dehumanization processes remains scarce. The antecedents and consequences of people's perceptions of being dehumanized (i.e., metadehumanization) by others has received less empirical attention than those of the perpetrators' perspective. Research linking sexual objectification and dehumanization highlights these issues: the dehumanization of sexually objectified women has received strong empirical support (Bongiorno et al., 2013; Heflick & Goldenberg, 2009; Morris et al., 2018; Vaes et al., 2011), whereas the effect of sexual objectification experiences on women's perceptions of being dehumanized by others (i.e., metadehumanization) has almost never been investigated (for a notable exception, see Moor et al., 2013).

The present thesis has therefore opened up research perspectives examining women's metadehumanization following interpersonal sexual objectification experiences. The experiments undertaken for the present thesis consistently showed that women feel dehumanized when people focus on their physical appearance and (sexual) body parts. Moreover, the occurrence of metadehumanization as a consequence of interpersonal sexual objectification leads to similar consequences as those highlighted in previous studies. More precisely, metadehumanization predicts negative emotional states, reciprocal dehumanization and undermines ensuing social interactions.

Future research should address the limitations highlighted above in order to enlarge our perception of both sexual objectification experiences and metadehumanization processes. For instance, investigating the consequences of sexual objectification among male samples and manipulating the gender of perpetrators as well as participants' sexual orientation could expand our knowledge of interpersonal sexual objectification experiences. Moreover, the formation of interpersonal and intergroup metadehumanization should be studied to determine the specific consequences of these two kinds of metadehumanization. Last but not least, the integration of current knowledge of women's reactions to sexual

Do you feel perceived as a full human being when you are treated as a body?

objectification and victims' reactions to dehumanization should encourage researchers to examine women's reactions following sexual objectification experiences and thus provide more knowledge on this topic. Beyond its limitations, the present dissertation sheds light on processes that have almost never been investigated, despite their frequency, and thus provides important knowledge for the fields of both sexual objectification and dehumanization.

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1. Supplementary Material: Chapter 7

Metadehumanization scale: items

We adapted and used the Demoulin et al. (2020)'s items across the four studies.

Items assessing animalistic metadehumanization (8):

1. The other considered me to be rather primitive
2. The other treated me as if I was under-evolved
3. The other perceived me as someone who lacks of self-restraint, like an animal
4. I was considered as an immature person
5. The other considered that I behaved in a childlike way
6. The other believed that I am someone irrational
7. The other believed that I was an unsophisticated person
8. The other did not treat me as someone cultured

Items assessing mechanistic metadehumanization (8):

1. The other treated me as if I were an object
2. The other treated me if I was mechanical and cold, like a robot
3. The other thought that I was superficial, was not concerned about who I am inside
4. The other thought that women are all the same
5. The other treated me as an emotionless person
6. The other thought that I did not have free will
7. I had the feeling of being used by others
8. The other treated me like an automaton or robot

Participants had to indicate their levels of agreement with each statements using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Principal component analysis of emotional states items (Study 1)

Principal component analysis was conducted on items assessing emotional states in order to ensure that emotional items loaded on the three expected factors. As predicted, principal components analyses revealed that the items of anger, sadness, and guilt loaded on the 3 expected factors, accounting for 68.01% of the variance. All emotional items loaded highly on their expected factor (loadings > .60) and each subscale had a good internal consistency with Cronbach's alphas higher than .70 (anger, $\alpha = .85$; sadness, $\alpha = .84$; guilt, $\alpha = .93$).

Do you feel perceived as a full human being when you are treated as a body?

Table S1. Descriptive statistics and correlations among variables (Study 1)

Table S1. Descriptive statistics and correlations among variables (Study 1)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Animalistic metadehumanization	3.92	1.42	(.87)				
2. Mechanistic metadehumanization	4.67	1.37	.614**	(.85)			
3. Anger	4.35	1.58	.444**	.586**	(.85)		
4. Sadness	3.81	1.82	.461**	.469**	.576**	(.84)	
5. Guilt	2.64	1.75	.301**	.354**	.300**	.577**	(.93)

Note. *N* = 193. Cronbach's alphas are presented on the diagonal.

** *p* < .01

Principal component analysis of metadehumanization items (Study 2)

As in Study 1, we conducted principal component analysis on the metadehumanization scale. The two factors related to animalistic and mechanistic perceptions of dehumanization emerged. These factors explained a total of 59.16% of variance and had a good internal consistency (animalistic metadehumanization, $\alpha = .90$; mechanistic metadehumanization, $\alpha = .86$).

Principal component analysis of emotional states items (Study 2)

The principal component analysis conducted on the items assessing emotional states revealed the three expected factors related to feeling of anger, sadness and guilt, explaining a total of 68.70% of variance. Cronbach's alphas indicated a good internal consistency (anger, $\alpha = .88$; sadness, $\alpha = .88$; guilt, $\alpha = .91$).

Table S2. Descriptive statistics and correlations among variables (Study 2)

Table S2. Descriptive statistics and correlations among variables (Study 2)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Animalistic metadehumanization	3.75	1.52	(.90)				
2. Mechanistic metadehumanization	4.41	1.42	.684**	(.86)			
3. Anger	2.79	1.11	.587**	.622**	(.88)		
4. Sadness	2.77	1.19	.523**	.491**	.627**	(.88)	
5. Guilt	2.25	1.17	.331**	.321**	.434**	.681**	(.91)

Note. *N* = 148. Cronbach's alphas are presented on the diagonal.

** *p* < .01

Principal component analysis of metadehumanization items (Study 3a)

As in previous studies, we conducted principal component analyses on metadehumanization scale. Here again, the two factors related to animalistic and mechanistic perceptions of dehumanization emerged, loading ranged from .922 to .549 on

their dimension. These factors explained a total of 59.34% of variance. Only one item cross-loaded between the two dimensions. However, the two-sub-scales had a good internal consistency (animalistic metadehumanization, $\alpha = .89$; mechanistic metadehumanization, $\alpha = .88$).

Principal component analysis of emotional states items (Study 3a)

Principal component analyses on the items assessing emotional states revealed the three (expected) factors solution explaining a total of 70.35% of variance. Items load between .868 and .626 on their expected dimension. The Cronbach's alphas also demonstrated a good internal consistency (anger, $\alpha = .87$; sadness, $\alpha = .90$; guilt, $\alpha = .92$).

Table S3. Descriptive statistics and correlations among variables (Study 3a)

Table S3. Descriptive statistics and correlations among variables (Study 3a)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Animalistic metadehumanization	3.67	1.43	(.89)				
2. Mechanistic metadehumanization	4.52	1.42	.596**	(.88)			
3. Anger	2.89	1.08	.558**	.584**	(.87)		
4. Sadness	2.97	1.20	.321**	.161	.482**	(.90)	
5. Guilt	2.28	1.16	.354**	.164	.384**	.705**	(.92)

Note. $N = 111$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

Table S4. Correlations between metadehumanization and cognitive consequences (Study 3a)

Table S4. Descriptive statistics and correlations among variables related to metadehumanization and cognitive consequences (Study 3a)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.
1. Animalistic metadehumanization	3.67	1.43	(.89)			
2. Mechanistic metadehumanization	4.52	1.42	.596**	(.88)		
3. Aversive self-awareness	5.64	1.24	.115	.217*	(.70)	
4. Cognitive deconstructive states	3.80	1.60	.358**	.274**	.346**	(.77)

Note. $N = 111$. Cronbach's alphas are presented on the diagonal.

* $p < .05$ ** $p < .01$

Principal component analysis of metadehumanization items (Study 3b)

We conducted a principal component analysis with metadehumanization items. The results revealed a two-factor solution, explaining 50.96% of variance. Items load between .872 and .532, only one item cross-loaded between the two dimensions. However, the two sub-scales had a good internal consistency, animalistic metadehumanization, $\alpha = .83$; mechanistic metadehumanization, $\alpha = .85$.

Do you feel perceived as a full human being when you are treated as a body?

Principal component analysis of emotional states items (Study 3b)

We conducted a principal component analyses on negative emotions items. The results revealed a three-factor solution, explaining 71.69% of variance. Items load between .939 and .502 on their own dimension. Cronbach's alphas also revealed a good internal consistency (anger, $\alpha = .89$; sadness, $\alpha = .90$; guilt, $\alpha = .92$).

Table S5. Descriptive statistics and correlations among variables (Study 3b)

Table S5. Descriptive statistics and correlations among variables (Study 3b)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Animalistic metadehumanization	3.84	1.25	(.83)				
2. Mechanistic metadehumanization	4.40	1.33	.466**	(.85)			
3. Anger	2.87	1.15	.493**	.405**	(.89)		
4. Sadness	2.82	1.13	.278**	.419**	.564**	(.90)	
5. Guilt	2.19	1.16	.346**	.388**	.492**	.712**	(.92)

Note. $N = 117$. Cronbach's alphas are presented on the diagonal.

** $p < .01$

Table S6: Correlations between metadehumanization and cognitive consequences (Study 3b)

Table S6. Descriptive statistics and correlations among variables related to metadehumanization and cognitive consequences (Study 3b)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.
1. Animalistic metadehumanization	3.84	1.25	(.83)	.466**	.253**	.412**
2. Mechanistic metadehumanization	4.40	1.33	.466**	(.85)	.192*	.349**
3. Aversive self-awareness	5.51	1.36	.253**	.192*	(.73)	.464**
4. Cognitive deconstructive states	3.37	1.65	.412**	.349**	.464**	(.78)

Note. $N = 117$. Cronbach's alphas are presented on the diagonal.

* $p < .05$ ** $p < .01$