Sexual objectification: advancements and avenues for future research

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Starting from the formulation of Objectification Theory, research has widely investigated the causes and consequences of sexual objectification. In the current article, we discuss three issues that we think are central in the current literature and point to new research directions. First, we highlight the need to further investigate differences and similarities with dehumanization; second, we suggest future interventions to target men and promote different values from those imposed by hegemonic masculinity; third, we suggest going beyond the gender binary perspective adopted so far to include the experience of gender nonconforming individuals. Overall, despite the impressive amount of work done, more research is needed to better understand this process with the aim of finding ways to overcome its consequences.

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Introduction

Objectification occurs when individuals are seen and treated as things rather than people. Nussbaum (1995) [1] theorized that objectification entails several characteristics, arguably the most crucial one being *instrumentality*, where people are reduced to things serving others' ends. Treating workers as interchangeable functional tools to reach companies' goals or using women's sexualized body parts in the media to please the observer, for example, are forms of objectification, the former representing a specific type of working objectification (see Ref. [2], for a review) whereas the latter a manifestation of sexual objectification (SO).

In the current paper, we will focus on SO and discuss three timely issues that are relevant in the current literature and will likely be central in future research. First, even though a lot of work has been done in defining SO and its link with processes of dehumanization, more empirical work is needed to test the relationship and differences between both concepts. Second, the role of masculinity norms in eliciting SO should be clarified with the aim to propose interventions and promote new behaviors and values that might help to overcome some of its devastating consequences. Third, we suggest extending the targets of SO by including the experience of gender nonconforming individuals. These three issues will be discussed in greater detail below indicating potentially interesting avenues for future research.

Sexual objectification

When it comes to SO, individuals' bodies, appearance, or sexual functions are separated from their person for the use and consumption of others, as if their bodies (or sexual body parts) could represent their entire person [3]. According to Objectification Theory [4], expressions of SO comprise both extreme (e.g. sexual harassment and violence) and more subtle acts (e.g. gazes and body evaluations) that are found to be part of women's daily experiences [5]. Indeed, although emerging research demonstrates that men can be sexually objectified (see Ref. [6], for a review), SO can be seen as a means to reinforce the existing gender hierarchies of men's domination over women [7**]: it is strongly tied to the experience and symbolic meaning of the female body in Western societies where men (and women that reproduce the male gaze) are the main perpetrators.

Research has examined SO in different ways, for example, exposing subjects to sexualized images of women (versus clothed women) [8], or promoting a focus upon women's physical appearance rather than their personalities [9]. Furthermore, over the years several measures

Table 1

Overview of the main self-report measures for SO.

Title	Authors	Scale	Sample	Example of items/Instructions
Measurement and Evaluation of SO	Aslinger (2019) [59]	Sexual objectification of Others Inventory	Women and men (nonclinical)	I like to look at naked people who I don't know (e.g. in the sauna)
Development of a New Measure of Men's Objectification of Women: Factor Structure Test Retest Validity	Curran (2004) [60]	Men's Objectification of Women Scale	Men (nonclinical)	The first thing I notice about a woman is her body
The development and psychometric properties of the Interpersonal Sexual Objectification Scale – Perpetration version	Gervais et al. (2018) [61]	Interpersonal Sexual Objectification Scale – Perpetrators version (ISOS-P)	Women and men (nonclinical)	How often have you whistled at a woman/man while she/he was walking down the street?
Body Gaze as a Marker of SO: A New Scale for Pervasive Gaze and Gaze Provocation Behaviors in Heterosexual Women and Men	Hollett et al. (2021) [62]	Pervasive Body Gaze Scale	Women and men (nonclinical)	No matter where I am, I typically find myself looking at the bodies of men/women
The sexual objectification scale: Continued development and psychometric evaluation	Morse (2007) [63]	Sexual Objectification Scale Revised	Men (nonclinical)	I get irritated when foreplay does not lead to my orgasm
The development and psychometric evaluation of the Objectification Perpetration Scale	Riemer et al. (2022) [64]	Objectification perpetration Scale	Men (nonclinical)	For me, it is hard not to gaze at women's breasts, waist, butt, or legs
Women Who objectify Other Women: The Vicious Circle of Objectification?	Strelan and Hargreaves (2005) [65]	Other-Objectification Questionnaire	Women and men (nonclinical)	Ranking of the importance of body appearance (5 attributes) over body competence (5 attributes) when looking at other people (either women or men)

of SO have been developed to capture a wide range of facets of the phenomenon. A comprehensive overview of the main self-report measures of SO is provided in Table 1.

Sexual objectification and dehumanization
SO and dehumanization — perceiving humans as less fully human or less human than others [10] — are closely related concepts. In both these processes, people are perceived in ways that are basically inaccurate. However, although SO may co-occur with dehumanization (see Ref. [11], for a review), we argue that these constructs can be treated as independent, at least from a theoretical point of view. Nussbaum (1995) [1] argued that, in romantic relationships, SO may be undertaken in a context of mutual respect and, therefore, be benign, while it becomes problematic when the partner's humanity is reduced or denied, hence, theoretically positing a distinction between the two concepts. Indeed, although SO is generally linked to negative outcomes (e.g. sexual harassment and violence) [12,13], if temporary and limited to specific contexts such as romantic/sexual relationships, it may be harmless or even positively perceived by the receiver (e.g. linked with higher self-esteem) ([14,15], see Ref. [16**] for a review and explanation). Similar to SO, dehumanization might also have positive effects for perpetrators, for example, protecting healthcare professionals from burnout ([17,18]; but see Refs. [19,20]); however, unlike SO and regardless of the context, experiencing dehumanization is linked with general negative emotions and poorer well-being [21–23] adding to the idea that dehumanization is generally always appraised negatively. In addition, Riemer and colleagues (2020) [24] investigated the effects of SO in a sample of heterosexual couples. Focusing on the female partners' appearance, a form of SO, did not lead the male partners to dehumanize them more, supporting the idea that SO may not always lead to dehumanization and the two concepts can be distinguished.

Furthermore, while dehumanization leads perpetrators to keep a distance from the dehumanized ([11**]; see also Ref. [25]), SO is associated with the desire to approach the objectified target because of their instrumentality (e.g. [16]). In fact, the definition of SO by Fredrickson and Roberts (1997) [4] highlights the importance of instrumentality, that is, women are reduced to their bodies and sexual body parts for the use of others. In line with this reasoning, men have shown approach tendencies when they dehumanize sexually objectified women [26], while women tended to avoid the same targets, the more they dehumanized them [26–28]. Therefore, more research is needed to unravel the underlying motives of men and women to dehumanize and instrumentalize sexually objectified women

and clarify the differences and boundary conditions for both processes to occur simultaneously.

On the other hand, SO of women often leads to a decreased attribution of humanity, as testified by an ever-growing literature. Briefly, research demonstrated that when female targets are presented in a sexualized manner, or a narrow focus on their appearance is activated, they are perceived as lacking mind, competence, warmth, morality, moral patiency, and agency ([29**], for a review). Moreover, some scholars theorized that, depending on its conceptualization, SO is associated with different forms of dehumanization. Indeed, focusing on women's sexual body parts and functions leads to the perception of women as more similar to animals while focusing on women's physical appearance and beauty is associated with higher mechanistic dehumanization likening them more closely to objects (see Ref. [29**], for a review). However, results on which dimensions are denied to sexually objectified targets are not always consistent (see Ref. [30], for a review) as their humanity has shown to be denied quite literally by perceiving them as if they were objects ([31], for a review) and more similar to real objects compared to sexually objectified men and nonobjectified male and female targets [32,33].

From the victim, mostly female, perspective, the primary consequence of experiencing SO in everyday life is adopting an objectified sense of the self, a process called self-objectification [4]. Women who self-objectify internalize the observer's perspective and learn to see and prize themselves based on how others evaluate their appearance and body. In the context of SO, self-objectification has been typically operationalized as the difference between the perceived importance of body appearance over body competence or the manifestation of body surveillance, that is, the tendency to monitor one's own physical appearance. Self-objectification, and body surveillance specifically, has been tied to many adverse outcomes, including body shame, eating disorders, decreased personal and relational satisfaction, and impaired cognitive and physical performances (see Ref. [34], for a review).

A recent line of research has started investigating whether women perceive to be dehumanized when subjected to SO, a process termed meta-dehumanization [35]. For example, Chevallereau and colleagues (2021) [36] found that both appearance- and sex-based objectification are associated with increased mechanistic, but not animalistic dehumanization. In other words, women perceive to be reduced to objects in both sex-based and beauty-based objectifying situations.

In addition, women under sexually objectifying circumstances may not only self-objectify and recognize they are being dehumanized, but might also interiorize the observer's global dehumanizing perspective, ending up perceiving themselves as possessing fewer fundamental social qualities and lower humanity (i.e. self-dehumanization). In line with this idea, Loughnan et al. (2017) [37] asked female participants to remember an actual situation in which they had been sexually objectified and found that compared to baseline measurements, they perceived themselves as lacking in humanity, competence, and warmth, but unexpectedly self-attributed more morality (see also Refs. [38,39], for similar results; see Ref. [40], for overall null effects).

Altogether, there is evidence supporting the idea that sexually objectifying interpersonal encounters may lead women, not only to self-objectify (e.g. via higher body monitoring), but also to endorse meta-dehumanization (i.e. the perception of being viewed as less than fully human by others), and self-dehumanization (e.g. less self-attribution of human qualities). However, up to now, no investigation is available on the relationship between self-objectification, meta-dehumanization, and self-dehumanization. As for SO and dehumanization, it seems reasonable that these processes may not always occur simultaneously. In other words, under some specific sexually objectifying circumstances, women may increase their body monitoring and place greater importance on their appearance but may not recognize to be dehumanized or may not come to perceive themselves as less than fully human. Supporting this reasoning, measures of self-dehumanization operationalized as increased invisibility and lack of autonomy do not correlate with body surveillance [41]. Given that self-dehumanization may be linked to the most severe consequences for women (e.g. acceptance of sexual harassment) [12], we think that more research should be conducted to understand the relation between these processes better and to directly inform potential intervention strategies.

Objectification and masculinity

Given the pervasiveness and consequences of SO, there is an urgent need for interventions to contrast this phenomenon. We believe that future interventions should be aimed at men given the fact that SO may be conceived as a product of heteronormative cultures and is perpetrated through the male gaze mainly toward women. We argue that the reason for such a gender difference lies in socialization processes. Indeed, gender roles and sexual scripts lead men to follow masculinity norms [42] by, for example, adopting a play-boy character desiring casual and promiscuous sexual activity, exposing themselves to risky situations, engaging in violent behaviors, and controlling the expression of their emotions [43]. Importantly, masculinity also requires men to display dominance and power over women. Crucially, men conforming to these masculine norms are more likely to sexually objectify women [42,44] and SO of women is an attempt of men to reinforce a

gendered and heterosexual identity [45]. Furthermore, Bareket and Shnabel (2020) [7**] demonstrated that SO could serve men to revalidate their dominance over women in response to threats.

Although research established the role of masculinity in the perpetration of SO, implications of these results remain unapplied. Indeed, most strategies developed so far to counteract SO focused on the victims ([46], in this issue), while very few interventions are aimed at men [47]. As masculinity represents a crucial variable in predicting SO, interventions may promote attitudes and behaviors not included in masculinity norms, such as developing positive attitudes toward gender equality and gender balance within interpersonal relationships.

Notably, compared to the female status, masculinity can be easily lost and needs to be demonstrated over and over (i.e. precarious manhood) [48]. Thus, SO may be one of the means through which men seek to affirm their (threatened) identity and maintain their dominant role. However, although high in status and power, adhesion to masculine prescriptions harms men as well, as they are linked to poorer health and well-being (e.g. [49, 50, 51]). Thus, promoting a less rigid and healthier definition of masculinity may benefit both women and men.

Beyond gender binarism

Most of the research on SO relies on a binary gender model, with male perpetrators and female victims of sexually objectifying experiences. According to Martin and Mason (2022) [52], gender is a critical feature of social interactions, being more central to perceptions of humanity than other social categories such as race, age, sexual orientation, religion, or disability. Within social interactions, individuals quickly and automatically assign their interactant to one of the two gender categories. However, an increasing number of individuals feel it difficult to fit within a binary gender model or do not identify with any gender at all. We think that calling into question gender binarism opens new and interesting directions for the research on SO.

Consequences on the social perception of individuals whose gender characteristics are nonconforming (e.g. transgender and nonbinary (TGNB) individuals) may be particularly relevant within the SO framework. In fact, when gender is nonconforming, individuals must actively seek information to disambiguate, for example, by focusing on their sexual body parts. Since gazing at sexual body parts represents a manifestation of SO [4], there is reason to believe that TGNB individuals are at greater risk of encountering SO. Importantly, researchers identified unique manifestations of sexually objectifying experiences encountered by TGNB individuals. In fact, along with body evaluations, sexual harassment, and assault [53] that are also faced by heterosexual women,

TGNB individuals experience being fetishized (i.e. considered as sexual performers because of their gender identity) and treated as a spectacle. Furthermore, TGNB individuals report frequent experiences of being hypersexualized or reduced to their sexual identity category [54].

It should also be noted that SO can be experienced as a pleasurable and self-esteem-enhancing experience by some transgender women, in line with the idea that SO may not be perceived as negative *per se* [55]. For example, SO may represent a validation of their femininity or passing that occurs when someone is identified with a gender or sex other than the gender they were assigned at birth [56]. However, as outlined above in the paper, general consequences for all victims of SO are far from harmless. So far, research on TGNB individuals has demonstrated that sexually objectifying experiences are related to enhanced self-objectification and decreased well-being. For example, Moradi and Tebbe (2022) [57] showed that sexually objectifying experiences among sexual minority women (including TGNB individuals) correlated with body self-surveillance and negatively affected individuals' well-being and health. This may lead to harmful practices such as altering the image through eating disorders or silicone injections [58] and risky body modification practices like starting a hormone treatment without follow-up or medical prescription. Further research is needed on the processes of SO in TGNB individuals to investigate its causes and consequences and identify strategies to address these issues effectively.

Conclusions

More than 20 years have passed since the original formulation of Objectification Theory [4]. Using this framework, an impressive body of research investigated the causes and consequences of SO, integrating and expanding the original claims of the theory. In the present paper, we discussed three timely issues that are central to the current literature and will likely help to advance our understanding of SO in the near future.

First, we emphasized that more research is needed to clarify the differences and similarities between SO and dehumanization. More experimental and longitudinal work is required to define causal relationships between these two processes, along with boundary conditions and individual differences that might moderate their relation. This would help the theoretical advancement of the phenomenon and support the development of more effective interventions to overcome some of its devastating consequences.

Second, most of the strategies counteracting SO focus on women as they are the prime victims of this process. However, given that more and more research underlines

the importance of the socialization of male gender norms in causing sexually objectifying behaviors against women, interventions should more consistently target men. Specifically, future strategies could focus on promoting new values, attitudes, and behaviors among both men and women that go beyond the hegemonic masculinity norms.

Finally, we suggest scholars to go beyond the gender binary perspective adopted so far. The questioning of gender binarism requires researchers dealing with SO to include the experiences of TGNB individuals who experience sexually objectifying behaviors because of their gender nonconformity.

Apart from deepening our understanding of the process of SO, research should focus on ways to overcome its consequences. SO is a pervasive phenomenon that potentially targets and damages more than half of the world's population. Therefore, knowing how to counter it is crucial to overcome one of the most persistent gender biases that we know today.

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References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

•• of outstanding interest

1. Nussbaum MC: **Objectification**. *Philos Public Aff* 1995, **24**:249-291.

2. Baldissarri C, Andrighetto L, Volpato C: **The longstanding view of workers as objects: antecedents and consequences of working objectification**. *Eur Rev Soc Psychol* 2022, **33**:81-130, https://doi.org/10.1080/10463283.2021.1956778

3. Bartky SL: **Femininity and Domination: Studies in the Phenomenology of Oppression**. Routledge; 1990.

4. Fredrickson BL, Roberts T-A: **Objectification theory**. *Psychol Women Q* 1997, **21**:173-206, https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

5. Holland E, Koval P, Stratemeyer M, Thomson F, Haslam N: **Sexual objectification in women's daily lives: a smartphone ecological momentary assessment study**. *Br J Soc Psychol* 2017, **56**:314-333, https://doi.org/10.1111/bjso.12152

6. Bernard P, Cogoni C, Carnaghi A: **The sexualization–objectification link: sexualization affects the way people see and feel toward others**. *Curr Dir Psychol Sci* 2020, **29**:134-139, https://doi.org/10.1177/0963721419898187

7. Bareket O, Shnabel N: **Domination and objectification: men's motivation for dominance over women affects their tendency to sexually objectify women**. *Psychol Women Q* 2020, **44**:28-49, https://doi.org/10.1177/0361684319871913.
••

Across three studies the authors examined motivations underlying women's sexual objectification. Results displayed a correlation between men's social dominance orientation (SDO) and their tendency to sexually objectify women (Study 1). Furthermore, threatening men's dominance over women led to increased sexual objectification of women among high SDO participants (Studies 2 and 3). Overall, this is an important paper demonstrating that sexual objectification may represent a mean to (re)affirm men's dominance over women.

8. Ruzzante D, Monachesi B, Orabona N, Vaes J: **The Sexual OBjectification and EMotion database: A free stimulus set and norming data of sexually objectified and non-objectified female targets expressing multiple emotions**. *Behav Res Methods* 2022, **54**:541-555, https://doi.org/10.3758/s13428-021-01640-3

9. Riemer AR, Sáez G, Brock R, Gervais SJ: **Self-fulfilling objectification in relationships: the effects of men's objectifying expectations on women's self-objectification during conflict in romantic relationships**. *Self Identity* 2021, **20**:854-860, https://doi.org/10.1080/15298868.2020.1778518

10. Vaes J, Paladino MP, Haslam N: **Seven clarifications on the psychology of dehumanization**. *Perspect Psychol Sci* 2021, **16**:28-32, https://doi.org/10.1177/1745691620953767

11. Haslam N: **Dehumanization and the lack of social connection**. *Curr Opin Psychol* 2022, **43**:312-316, https://doi.org/10.1016/J.COPSYC.2021.08.013.
••

This article examines the relation between the tendency to see the self as more human than others and experiences of social exclusion and disconnection. The author also explores intraindividual and interpersonal reactions to social exclusion and dehumanizing perceptions, while identifying positive social contact as a mean to reduce dehumanization.

12. Galdi S, Guizzo F: **Media-induced sexual harassment: the routes from sexually objectifying media to sexual harassment**. *Sex Roles* 2021, **84**:645-669, https://doi.org/10.1007/s11199-020-01196-0

13. Moss L, Ward LM, Overstreet NM: **Do objectification, gender beliefs, or racial stereotypes mediate associations between Black adults' media use and acceptance of intimate partner violence?** *Psychol Violence* 2022, **12**:63, https://doi.org/10.1037/vio0000412

14. Meltzer AL: **Women can benefit from sexual and physical valuation in the context of a romantic relationship**. *Personal Soc Psychol Bull* 2020, **46**:243-257, https://doi.org/10.1177/0146167219854443

15. Pecini C, Di Bernardo GA, Crapolicchio E, Stathi S, Vezzali L, Andrighetto L: **Stop looking at me! associations between men's partner-objectification and women's self-objectification, body shame and life satisfaction in romantic relationships**. *J Community Appl Soc Psychol* 2022, **32**:1047-1060, https://doi.org/10.1002/casp.2627

16. Gervais SJ, Sáez G, Riemer AR, Klein O: **The Social Interaction Model of Objectification: a process model of goal-based objectifying exchanges between men and women**. *Br J Soc Psychol* 2020, **59**:248-283, https://doi.org/10.1111/bjso.12339.
••

In this paper, the authors present the Social Interaction model of Objectification which articulate the goal-based interaction process between men and women underlying sexual objectification exchanges. This paper represents an important theoretical advancement in the sexual objectification field, and it may help explain how women may sometimes appraise sexual objectification (or even instances of sexual harassment) in a positive way.

17. Cameron CD, Harris LT, Payne BK: **The emotional cost of humanity: anticipated exhaustion motivates dehumanization of stigmatized targets**. *Soc Psychol Personal Sci* 2016, **7**:105-112, https://doi.org/10.1177/1948550615604453

18. Vaes J, Muratore M: **Defensive dehumanization in the medical practice: a cross-sectional study from a health care worker's perspective**. *Br J Soc Psychol* 2013, **52**:180-190, https://doi.org/10.1111/bjso.12008

19. Delgado N, Bonache H, Betancort M, Morera Y, Harris LT: **Understanding the links between inferring mental states, empathy, and burnout in medical contexts**. *Healthcare* 2021, **9**:158, https://doi.org/10.3390/healthcare9020158

20. Testoni I, Sicari G, Ronconi L, Biancalani G, Franco C, Cottone P, Crupi R: **Dehumanization and burden of care among caregivers of terminally ill patients**. *Health Psychol Res* 2021, **9**:1-8, https://doi.org/10.52965/001c.29052

21. Bastian B, Haslam N: **Experiencing dehumanization: cognitive and emotional effects of everyday dehumanization**. *Basic Appl Soc Psychol* 2011, **33**:295-303, https://doi.org/10.1080/01973533.2011.614132

22. Fontesse S, Demoulin S, Stinglhamber F, Maurage P: **Dehumanization of psychiatric patients: experimental and clinical implications in severe alcohol-use disorders**. *Addict Behav* 2019, **89**:216-223, https://doi.org/10.1016/j.addbeh.2018.08.041

23. Fontesse S, Rimez X, Maurage P: **Stigmatization and dehumanization perceptions towards psychiatric patients among nurses: a path-analysis approach**. *Arch Psychiatr Nurs* 2021, **35**:153-161, https://doi.org/10.1016/j.apnu.2020.12.005

24. Riemer AR, Sáez G, Brock R, Gervais SJ: **Self-fulfilling objectification in relationships: the effects of men's objectifying expectations on women's self-objectification during conflict in romantic relationships**. *Self Identity* 2021, **20**:854-860, https://doi.org/10.1080/15298868.2020.1778518

25. Morera MD, Quiles MN, Gonzalez-Mendez R: **Integrating dehumanization and attachment in the prediction of teen dating violence perpetration**. *J Interpers Violence* 2022, **37**:NP1939-NP1962, https://doi.org/10.1177/0886260520933042

26. Vaes J, Paladino P, Puvia E: **Are sexualized women complete human beings? Why men and women dehumanize sexually objectified women**. *Eur J Soc Psychol* 2011, **41**:774-785, https://doi.org/10.1002/ejsp.824

27. Puvia E, Vaes J: **Being a body: women's appearance related self-views and their dehumanization of sexually objectified female targets**. *Sex Roles* 2013, **68**:484-495, https://doi.org/10.1007/s11199-012-0255-y

28. Puvia E, Vaes J: **Promoters versus victims of objectification: why women dehumanize sexually objectified female targets**. *Rev Int Psychol Soc* 2015, **28**:63-93.

29. Karsay K: **Objectification**. The International Encyclopedia of Media
•• Psychology. Wiley; 2020:1-9, https://doi.org/10.1002/9781119011071.iemp0141.
This article offers a comprehensive review of the objectification and sexual objectification literature. It focuses on the consequences of this process, as well as on its relationship with dehumanization. The author also reviews the literature on objectification in mass media and its consequences for media users.

30. Vaes J, Loughnan S, Puvia E: **The inhuman body: when sexual objectification becomes dehumanizing**. Humanness and Dehumanization. Psychology Press; 2013:194-212.

31. Bernard P, De Laet M, Gervais SJ: **Is body inversion effect a valid measure of women's objectification? Yes, it is!**. *Personal Individ Differ* 2021, **175**:110708, https://doi.org/10.1016/j.paid.2021.110708

32. Vaes J, Cristoforetti G, Ruzzante D, Cogoni C, Mazza V: **Assessing neural responses towards objectified human targets and objects to identify processes of sexual objectification that go beyond the metaphor**. *Sci Rep* 2019, **9**:1-10, https://doi.org/10.1038/s41598-019-42928-x

33. Vaes J, Cogoni C, Calcagnì A: **Resolving the human–object divide in sexual objectification: how we settle when categorizing objectified and nonobjectified human targets**. *Soc Psychol Personal Sci* 2020, **11**:560-569, https://doi.org/10.1177/1948550619875142

34. Roberts T-A, Calogero RM, Gervais SJ: **Objectification theory: continuing contributions to feminist psychology**. In *APA Handbook of the Psychology of Women: History, Theory, and Battlegrounds*. Edited by Travis CB, White JW, Rutherford A, Williams WS, Cook SL, Wyche KF. American Psychological Association; 2018:249-271, , https://doi.org/10.1037/0000059-013

35. Demoulin S, Maurage P, Stinglhamber F: **Exploring metadehumanization and self-dehumanization from a target perspective**. In *The Routledge Handbook of Dehumanization*. Edited by Kronfeldner M. Routledge; 2020:260-274.

36. Chevallereau T, Maurage P, Stinglhamber F, Demoulin S: **Sex-based and beauty-based objectification: metadehumanization and emotional consequences among victims**. *Br J Soc Psychol* 2021, **60**:1218-1240, https://doi.org/10.1111/bjso.12446

37. Loughnan S, Baldissarri C, Spaccatini F, Elder L: **Internalizing objectification: objectified individuals see themselves as less warm, competent, moral, and human**. *Br J Soc Psychol* 2017, **56**:217-232, https://doi.org/10.1111/BJSO.12188

38. Baldissarri C, Andrighetto L, Gabbiadini A, Valtorta RR, Sacino A, Volpato C: **Do self-objectified women believe themselves to be free? Sexual objectification and belief in personal free will**. *Front Psychol* 2019, **10**:1867, https://doi.org/10.3389/fpsyg.2019.01867

39. Chen Z, Teng F, Zhang H: **Sinful flesh: sexual objectification threatens women's moral self**. *J Exp Soc Psychol* 2013, **49**:1042-1048, https://doi.org/10.1016/J.JESP.2013.07.008

40. Guizzo F, Cadinu M: **Effects of objectifying gaze on female cognitive performance: the role of flow experience and internalization of beauty ideals**. *Br J Soc Psychol* 2017, **56**:281-292, https://doi.org/10.1111/BJSO.12170

41. Talmon A, Ginzburg K: **The nullifying experience of self-objectification: the development and psychometric evaluation of the Self-Objectification Scale**. *Child Abus Negl* 2016, **60**:46-57, https://doi.org/10.1016/J.CHIABU.2016.09.007

42. Seabrook RC, Ward LM, Giaccardi S: **Why is fraternity membership associated with sexual assault? Exploring the roles of conformity to masculine norms, pressure to uphold masculinity, and objectification of women**. *Psychol Men Masc* 2018, **19**:3-13, https://doi.org/10.1037/men0000076

43. Levant RF, McDermott R, Parent MC, Alshabani N, Mahalik JR, Hammer JH: **Development and evaluation of a new short form of the Conformity to Masculine Norms Inventory (CMNI-30)**. *J Couns Psychol* 2020, **67**:622-636, https://doi.org/10.1037/cou0000414

44. Mikorski R, Szymanski DM: **Masculine norms, peer group, pornography, Facebook, and men's sexual objectification of women**. *Psychol Men Masc* 2017, **18**:257-267, https://doi.org/10.1037/MEN0000058

45. Rodriguez NS, Hernandez T: **Dibs on that sexy piece of ass: hegemonic masculinity on TFM girls instagram account**. *Soc Media + Soc* 2018, **4**:1-12, https://doi.org/10.1177/2056305118760809

46. F.Prati, E. Crapolicchio, A. Dvorakova, G.A. Di Bernardo and D. Ruzzante, Effective ways for reducing dehumanization: intergroup and interpersonal strategies, *Current Opinion in Behavioural Sciences,* under review.

47. Guizzo F, Cadinu M: **Women, not objects: testing a sensitizing web campaign against female sexual objectification to temper sexual harassment and hostile sexism**. *Media Psychol* 2021, **24**:509-537, https://doi.org/10.1080/15213269.2020.1756338

48. Bosson JK, Jurek P, Vandello JA, Kosakowska-Berezecka N, Olech M, Besta T, Van Laar C: **Psychometric properties and correlates of precarious manhood beliefs in 62 nations**. *J Cross-Cult Psychol* 2021, **52**:231-258, https://doi.org/10.1177/0022022121997997

49. Grunewald W, Kinkel-Ram SS, Smith AR: **Conformity to masculine norms, masculine discrepancy stress, and changes in muscle dysmorphia symptoms**. *Body Image* 2022, **40**:237-248, https://doi.org/10.1016/J.BODYIM.2022.01.001

50. Mesler RMD, Leary RB, Montford WJ: **The relationships between masculine gender role discrepancy, discrepancy stress and men's health-related behavior**. *Personal Individ Differ* 2022, **184**:111205, https://doi.org/10.1016/J.PAID.2021.111205

51. Rudman LA, Glick P: **The Social Psychology of Gender: How Power and Intimacy Shape Gender Relations**. Guilford Publications; 2021.

52. Martin AE, Mason MF: **What does it mean to be (Seen as) human? The importance of gender in humanization**. *J Personal Soc Psychol* 2022, **123**:292-315, https://doi.org/10.1037/PSPA0000293

53. Gamarel KE, Jadwin-Cakmak L, King WM, Lacombe-Duncan A, Trammell R, Reyes LA, Harper GW: **Stigma experienced by transgender women of color in their dating and romantic relationships: implications for gender-based violence prevention programs**. *J Interpers Violence* 2022, **37**:NP8161-NP8189, https://doi.org/10.1177/0886260520976186

54. Tebbe EA, Moradi B, Wilson E, Bell HL, Connelly K, Lenzen A: **Development and psychometric evaluation of the Sexual Minority Women's Sexual Objectification Experiences Scale**. *J Couns Psychol* 2021, **68**:501-514, https://doi.org/10.1037/cou0000547

55. Anzani A, Lindley L, Tognasso G, Galupo MP, Prunas A: **"Being talked to like I was a sex toy, like being transgender was simply for the enjoyment of someone else": fetishization and sexualization of transgender and nonbinary individuals**. *Arch Sex Behav* 2021, **50**:897-911, https://doi.org/10.1007/s10508-021-01935-8

56. Sevelius JM: **Gender affirmation: a framework for conceptualizing risk behavior among transgender women of color**. *Sex Roles* 2013, **68**:675-689, https://doi.org/10.1007/S11199-012-0216-5/FIGURES/1

57. Moradi B, Tebbe E: **A test of Objectification Theory with sexual minority women**. *Psychol Women Q* 2022, **46**:226-240, https://doi.org/10.1177/03616843211052525

58. Comiskey A, Parent MC, Tebbe EA: **An inhospitable world: exploring a model of objectification theory with trans women**. *Psychol Women Q* 2019, **44**:105-116, https://doi.org/10.1177/0361684319889595

59. Anslinger J: **Measurement and Evaluation of Sexual Objectification**; 2019.

60. Curran P: **Development of a New Measure of Men's Objectification of Women: Factor Structure Test Retest Validity**. Honors Projects; 2004:13 ⟨https://digitalcommons.iwu.edu/psych_honproj/13⟩.

61. Gervais SJ, Davidson MM, Styck K, Canivez G, DiLillo D: **The development and psychometric properties of the Interpersonal Sexual Objectification Scale — Perpetration Version**. *Psychol Violence* 2018, **8**:546, https://doi.org/10.1037/vio0000148

62. Hollett RC, Rogers SL, Florido P, Mosdell B: **Body Gaze as a Marker of Sexual Objectification: A New Scale for Pervasive Gaze and Gaze Provocation Behaviors in Heterosexual Women and Men**. *Arch Sex Behav* 2021, **51**:2759-2780, https://doi.org/10.1007/s10508-022-02290-y

63. Morse T: **The Sexual Objectification Scale: Continued Development and Psychometric Evaluation**. Southern Illinois University at Carbondale; 2007.

64. Riemer AR, Sáez G, Brock RL, Gervais SJ: **The development and psychometric evaluation of the Objectification Perpetration Scale**. *J Couns Psychol* 2022, **69**:541, https://doi.org/10.1037/cou0000607

65. Strelan P, Hargreaves D: **Women who objectify other women: the vicious circle of objectification?** *Sex Roles* 2005, **52** https://doi.org/10.1007/s11199-005-3737-3