INTERNATIONAL REVIEW OF SOCIAL PSYCHOLOGY

Bernard, P., et al. (2019). The Face of Sexualization: Faces Wearing Makeup are Processed Less Configurally than Faces Without Makeup. *International Review of Social Psychology*, 32(1): 16, 1–8. DOI: https://doi.org/10.5334/irsp.211

RESEARCH ARTICLE

The Face of Sexualization: Faces Wearing Makeup are Processed Less Configurally than Faces Without Makeup

Philippe Bernard, Philippine Geelhand and Lara Servais

Human bodies are sometimes cognitively objectified, i.e., processed less configurally and more analytically, in a way that resembles how most objects are perceived. Whereas how people process images of sexualized bodies appearing in the mass media has been well documented; whether subtler manifestations of sexualization, such as wearing makeup, might elicit cognitive objectification of ordinary women's faces, remains unclear. The present paper aims at filling this gap. We hypothesized that faces wearing makeup would be processed less configurally than faces wearing no makeup. Sixty participants took part in a face recognition task, in which faces wearing or not wearing makeup were presented. In regards to faces with no makeup, people recognized face parts better in the context of whole faces than in isolation, which served as evidence of configural processing. In regards to faces wearing makeup, face parts were recognized equally well when presented in isolation vs. in the context of whole faces; evidence of a lower configural processing. That pattern of results was driven by eye makeup (vs. lipstick). Implications for research on objectification and sexualization are discussed.

Keywords: sexualization; makeup; cognitive objectification; configural and analytic processing; whole/parts paradigm; face perception

Objectification Theory (Fredrickson & Roberts, 1997) suggests that women are reduced to their bodies and physical appearance in Western cultures, as illustrated by the pervasive use of sexualization in the media. Sexualization is a set of features that emphasize sexiness through a focus on body parts (e.g., women wearing revealing clothing) and face parts (e.g., flashy lipstick and "smoky eyes": Smolak, Murnen, & Myers, 2014). Content analyses of advertisements revealed that women's bodies and faces are frequently portrayed in a sexualized manner in visual media (Stankiewicz & Roselli, 2008). As a result, American women spend billions of dollars on cosmetics each year to meet these sexualized standards of beauty (Kumar, 2005), enhancing their perceived beauty and attractiveness (Graham & Jouhar, 1981). Cosmetics may also modulate impressions regarding women's personality, although research has found mixed results: Women wearing makeup are evaluated sometimes more positively (e.g., warmer), and often more negatively (e.g., less moral) (for a review, see Richetin, Huguet & Croizet, 2007).

Beyond impression formation, very little is known regarding how makeup shapes the way people visually process women's faces. Indeed, most sexualization and objectification studies have focused on how people visually process and attribute mind to sexualized bodies appearing in mass media (for reviews, see Bernard, Gervais, & Klein, 2018; Ward, 2016). The present paper examines whether face sexualization –or the emphasis of sexiness through facial cues– changes the way people see ordinary women's faces. We suggest that face sexualization, akin to body sexualization, may trigger cognitive objectification. That is, that faces with makeup may be processed less configurally than faces without makeup.

Cognitive Objectification: When People Are Cognitively Reduced to Their Parts

Consistent with the tenets of Objectification Theory (Fredrickson & Roberts, 1997), research has shown that sexualized female bodies are rated as lacking in mind and moral status (e.g., Loughnan et al., 2010) and as possessing less agency (Gray, Knobe, Sheskin, Bloom, Barrett, 2011), less uniquely human traits (Vaes, Paladino, & Puvia, 2011), less competence, less warmth and less morality (Bernard & Wollast, 2019) than nonsexualized women. Departing from this line of research that envisioned objectification through a content-focused approach (i.e., diminished attributions of human-like traits to a person), a recent body of research has started to examine the cognitive processes underpinning objectification.

A vast literature in psychology and neuroscience demonstrates that people process a stimulus either as a global physical entity (i.e., configural processing), *as if the focus was on the forest*, or as a set of parts (i.e., analytic processing), *as if the focus was on the trees* (Maurer, Le Grand, & Maurer,

Université Libre de Bruxelles, BE

Corresponding author: Philippe Bernard (pbernard@ulb.ac.be)

2002). Configural processing depends on the spatial relationships among the stimulus' parts, which are recognized when presented in the context of the overall stimulus, whereas analytic processing depends solely on the stimulus' parts, regardless of their configuration. Whereas bodies and faces are typically processed configurally, objects are typically processed analytically, or at least less configurally than bodies and faces (for a review see Maurer et al., 2002). This phenomenon has been observed at an early stage of visual processing, based on electroencephalography (EEG), a method that records millisecond-by-millisecond neural activations evoked by stimuli (for a review see de Gelder et al., 2010). Such studies have mostly examined the extent to which disrupting configural processing affects the amplitude of the N170, a negative component triggered by visual stimuli following a 170 ms onset. While the N170 amplitude for upside-down and upright objects does not differ, indicating analytic processing, inverted faces and bodies trigger larger N170s than upright ones (e.g., Stekelenburg & de Gelder, 2004), indicating that more cognitive resources are needed to process them, because inversion impairs the ability to rely on configural information.

Relevant here, a growing body of research has shown that sexualized bodies may be cognitively objectified (i.e., no longer processed as a global physical entity, but instead cognitively reduced to their constituent parts, similarly to how most objects are perceived; Bernard, Gervais et al., 2018). For example, Bernard, Rizzo et al. (2018) found larger N170s for inverted than for upright nonsexualized bodies whereas N170 amplitudes did not differ between inverted and upright exemplars for sexualized bodies and for objects. This suggests that sexualized bodies were processed differently and less configurally than nonsexualized ones (for an examination of the respective role of nudity and posture suggestiveness on cognitive objectification, see Bernard et al., 2019). Furthermore, in line with the idea that configural processing requires more cognitive resources when stimuli are presented in a part-based manner (Soria Bauser & Suchan, 2018), Bernard and colleagues found that scrambled nonsexualized bodies triggered larger N170s than whole nonsexualized bodies (Bernard, Content, Deltenre, & Colin, 2018). In contrast, N170 amplitudes were similar for scrambled and whole sexualized bodies, and a similar pattern emerged for objects, providing evidence that sexualized bodies, akin to objects, are visually processed in a part-based manner at a neural level.

At a behavioral level, several studies using the body inversion paradigm found similar evidence that sexualized female bodies were processed less configurally, with inverted and upright sexualized bodies equally well recognized (Bernard, Gervais, Allen, Campomizzi, & Klein, 2012; Bernard, Gervais, Allen, Delmée, & Klein, 2015; Civile & Obhi, 2016; Cogoni et al., 2018). At a behavioral level, another relevant paradigm to assess whether a stimulus is processed configurally versus analytically is the 'whole vs. parts' paradigm, during which participants view images of stimuli parts presented either in isolation or in the context of the whole stimuli. Configural processing can be evidenced when the recognition of stimuli parts is improved when presented in the context of whole stimuli vs. in isolation (Seitz, 2002; Tanaka & Farah, 1993), suggesting that recognition relies on configural stimulus information. In contrast, when parts recognition does not improve in the presence of the whole stimulus, this evidences analytic processing, or at least diminished configural processing. Such enhanced recognition of parts in the presence of the whole stimulus (vs. in isolation) is typically observed for human faces and bodies, not for objects (for a review, see Maurer et al., 2002).

Using this paradigm, Gervais, Vescio, Maass, Förster and Suitner (2012) presented images of fully clothed bodies and found that male sexual body parts were better recognized in the context of the whole body rather than in isolation. In contrast, the recognition of sexual female body parts improved when body parts were presented in isolation (vs. in the context of whole bodies). Female bodies were thus processed less configurally and more analytically than male bodies. Likewise, using the same task but with sexualized bodies, Bernard, Gervais, Allen, Campomizzi and Klein (2015) found that female body parts were better recognized in isolation than in the context of whole bodies whereas male body parts were equally well recognized in isolation vs. in the context of whole bodies.

Why Would Women's Faces Wearing Makeup Be Cognitively Objectified?

Cognitive objectification studies have been informative regarding how people visually process images of sexualized bodies that appear in the visual media, but they have remained silent regarding whether subtler manifestations of sexualization, such as the use of heavy makeup, might affect the way people see women. Sexualization may be communicated through bodily cues (Hatton & Trautner, 2011), but also through facial ones (e.g., puckering lips: Messineo, 2008). Research on sexualization mostly focused on *body* sexualization (e.g., Bernard et al., 2019) and it thus remains unclear whether face sexualization might affect the way people visually process women's faces.

The present study hypothesized that face sexualization might diminish configural face processing. In line with this hypothesis, Tanaka (2016) found that faces with lipstick were associated with larger N170s than faces without makeup (but eye shadow did not modulate the N170s), suggesting that cosmetics induce subtle alterations in face processing. However, this study relied only on faces for which configural face information remained intact (i.e., not altered through e.g., inversion or scrambling). Whether faces with makeup are processed less configurally than faces without makeup remains therefore an open question. We hypothesized that faces with makeup would be processed less configurally than faces with no makeup. We relied on a whole/parts paradigm in which face parts were presented either in isolation or in a whole face context. Concerning faces without makeup, we expected that recognition performance would be improved when face parts are presented in a whole face context vs. in isolation, evidencing configural processing. Concerning faces wearing makeup, we predicted that face parts would be recognized equally well when presented in isolation vs. in a whole face context, evidencing lower face configural processing. We also examined whether the effect of face sexualization on face processing was moderated by the location of makeup (eyes vs. mouth).

Finally, we also explored and reported the reaction times associated with recognition performance. Reaction times are indeed important to consider for two reasons. Reaction times are informative regarding whether participants properly followed instructions i.e., performing the recognition task as fast as possible. Moreover, reaction times also enable us to test whether a speed-accuracy bias is at play, i.e., whether the interaction between target face sexualization and the recognition task might be driven by more time spent at looking at face parts vs. whole faces wearing makeup vs. no makeup.

Method

We reported manipulations and exclusions in the preregistration of the experiment (http://aspredicted.org/blind.php?x=cbyc6k). Based on the effect size of the interaction between recognition task and target sex found by Bernard, Gervais, Allen, Campomizzi et al. (2015) who used a whole/body parts paradigm including images of sexualized bodies (i.e., $d = 0.46$), G*Power indicated that a sample size of 52 participants was necessary to detect such an effect size, with $p < 0.05$ and a power of 0.90. Sixty college students took part in the experiment. Prior to analysis, we performed a median absolute deviation (MAD) outlier analysis (Leys, Ley, Klein, Bernard, & Licata, 2013) with a conservative criterion (±3 MAD) on both recognition scores and reaction times. This analysis revealed that there was no outlier when considering recognition scores. However, the reaction times of two participants were extremely slow (+3 MAD). These participants were thus excluded from the sample given that the instructions stressed the importance of responding as quickly as possible. The final sample included 58 participants (54 women; M_{age} = 19.90, SD = 2.53; 72% of the sample was either Belgian or French), who were college students taking part in the present experiment in exchange for course credit.

Participants took part in a whole face and face parts recognition task (Seitz, 2002; Tanaka & Farah, 1993) and then filled out a questionnaire including socio-demographic and manipulation check questions ('This woman wears a lot of makeup' and 'This woman is depicted in a sexualized way' on 7-point scales ranging from with 1 = *I fully disagree* to 7 = *I fully agree*). The recognition task included images of six women wearing no makeup and the same six women wearing makeup. We selected pictures of three real women's faces, and three pictures of other women's faces from the internet. Faces were associated with neutral facial expressions and were wearing no makeup. All women were looking at the camera. We used a virtual makeover technology (ModiFace) to create six faces with makeup (**Figure 1** for examples).

The whole/parts recognition task (Tanaka & Farah, 1993) included two types of trials. For *whole face* trials, participants first saw an image of a whole face (picture size = 6.30 × 8.66 inches) for four seconds, followed by a blank screen for one second, and were then asked during a decision phase to select the original picture among two pictures of whole faces. One was the original and the other was a modified version of that original picture. The eyes or the mouth were slightly enlarged or constricted via an image editing software (for a given face part, we clicked twice with the "enlargement" or "constriction" tool after selecting that face part). We opted for modifying face parts instead of using different exemplars of face parts as distractors because the latter strategy would have rendered modifications too salient and easy to detect, resulting in a ceiling effect. For *face parts* trials, the stimuli were identical except that the original vs. modified face parts were presented in isolation (i.e., not in the context of the whole face) in the decision phase (picture size = 6.30 × 1.50 inches). The recognition task included 96 trials and lasted approximately 10 minutes. Recognition scores were computed as the percentage of correctly identified pictures for a given stimulus category. We agree to share on request anonymized data files from this research with other qualified professionals in order to confirm the conclusions of the research.

Figure 1: Examples of Face Stimuli Without and With Makeup.

Results

Manipulation Check

Participants rated women's faces wearing makeup as more sexualized (M = 3.39, SE = 0.24) than the same faces without makeup (M = 1.41, SE = 0.08), $F(1, 57) = 81.32$, $p < 0.001$, 95% CI = [1.54, 2.41], $\eta_p^2 = 0.59$. Moreover, faces with makeup were evaluated as wearing more makeup (M = 4.95, SE = 0.19) than the same faces without makeup (M = 1.27, SE = 0.07), $F(1, 57) = 373.08$, $p < 0.001$, 95%

CI = [3.30, 4.06], η_p^2 = 0.87. Sexualization and makeup ratings were highly correlated, $r(56) = 0.58$, $p < 0.001$.

Recognition Performance

We submitted recognition scores to a 2 (face sexualization: no makeup, makeup) × 2 (recognition task: whole; isolated parts) × 2 (face parts: eyes; mouth) repeated measures ANOVA. The main effect of face sexualization was not significant, $F(1, 57) = 0.95$, $p = 0.334$, 95% CI = [–0.010, 0.030], $\eta_p^2 = 0.02$. The ANOVA yielded a main effect of recognition task, $F(1, 57) = 5.12$, $p = 0.028$, 95% CI = [0.003, 0.043], $\eta_p^2 = 0.08$, with face parts better recognized in the context of whole faces ($M = 0.67$, $SE = 0.013$) than in isolation ($M = 0.65$, $SE = 0.013$).

Contrary to our hypothesis, the interaction between face sexualization and recognition task was not significant, $F(1, 57) = 1.72$, $p = 0.195$, $\eta_p^2 = 0.03$. However, a significant interaction between face sexualization, recognition task and face parts (i.e., eyes vs. mouths) emerged, $F(1, 57) = 6.52$, $p = 0.013$, $\eta_p^2 = 0.10$. We thus examined whether the interaction between recognition task and face sexualization was moderated by face parts. As expected, for faces wearing no makeup (see **Figure 2**), we found a main effect of recognition task, $F(1, 57) = 4.87$, $p = 0.031$, 95% CI = [0.004, 0.073], $\eta_p^2 = 0.08$, with face parts better recognized in the context of whole faces ($M = 0.68$, $SE = 0.016$) than when presented in isolation ($M = 0.64$, $SE = 0.016$) and this pattern was not moderated by face parts, $F(1, 57) = 3.27$, $p = 0.076$, $\eta_p^2 = 0.05$. Importantly, and supporting our hypothesis, the main effect of recognition task was not significant for faces wearing makeup, $F(1, 57) = 0.29$, $p = 0.594$, 95% CI = [–0.020, 0.034], $\eta_p^2 = 0.005$, with face parts recognized equally well in the context of whole faces ($M = 0.657$, $SE = 0.014$) than in isolation ($M = 0.650$, $SE = 0.013$). This pattern was qualified by a significant interaction between recognition task and face parts, $F(1, 57) = 5.41$, $p = 0.024$, $\eta_p^2 = 0.09$: Eyes with makeup were equally well recognized regardless whether eyes were presented in the context of the whole faces ($M = 0.66$, $SE = 0.021$) vs. in isolation ($M = 0.69$, $SE = 0.019$), $F(1, 57) = 2.82$, $p = 0.099$, 95% CI = [–0.079, 0.007], $\eta_p^2 = 0.047$. Although this difference did not reach significance, it is worth noting that eyes with makeup were better recognized in isolation than in the context of whole faces at a descriptive level. In contrast, we found the opposite pattern for mouths with lipstick, with mouths better recognized in the context of whole faces ($M = 0.66$, $SE = 0.021$) than in isolation ($M = 0.61$, $SE = 0.019$), $F(1, 57) = 4.30$, $p = 0.043$, 95% CI = [0.002, 0.099], $\eta_p^2 = 0.07$ (for additional secondary results, see Supplementary Materials). Finally, given that we used three pictures we took ourselves as well as three pictures we took from the internet, we also explored whether the results were moderated by the type of stimuli. Adding this factor in the model does not change the pattern of results we have reported above.

In sum, our results suggest that faces with no makeup were recognized configurally with a better recognition of face parts when presented in the context of whole faces than when presented in isolation. In contrast, for faces with makeup, faces parts were recognized equally well regardless of whether they were presented in the context of whole faces or in isolation, evidencing lower configural processing, and this pattern was driven by eye makeup specifically.

Reaction Times

A separate 2 (face sexualization: no makeup, makeup) × 2 (recognition task: whole faces; isolated face parts) × 2 (face parts: eyes; mouth) repeated measures ANOVA revealed a main effect of recognition task, $F(1, 57) = 86.53$, $p < 0.001$, 95% CI = [616, 955], $\eta_p^2 = 0.60$: Face parts presented in the context of whole faces were associated with slower responses ($M = 3470$ ms, $SE = 149$) than when presented in isolation ($M = 2685$ ms, $SE = 96$). The main effect of face sexualization, $F(1, 57) = 0.80$, $p = 0.38$, 95% CI = [–145, 55], $\eta_p^2 = 0.01$, the interaction between face sexualization and recognition task, $F(1, 57) = 0.63$, $p = 0.43$, $\eta_p^2 = 0.01$, as well as the interaction between face sexualization, recognition task and face parts, $F(1, 57) = 0.11$, $p = 0.74$, $\eta_p^2 = 0.002$, were not significant (for additional secondary results, see Supplementary Materials).

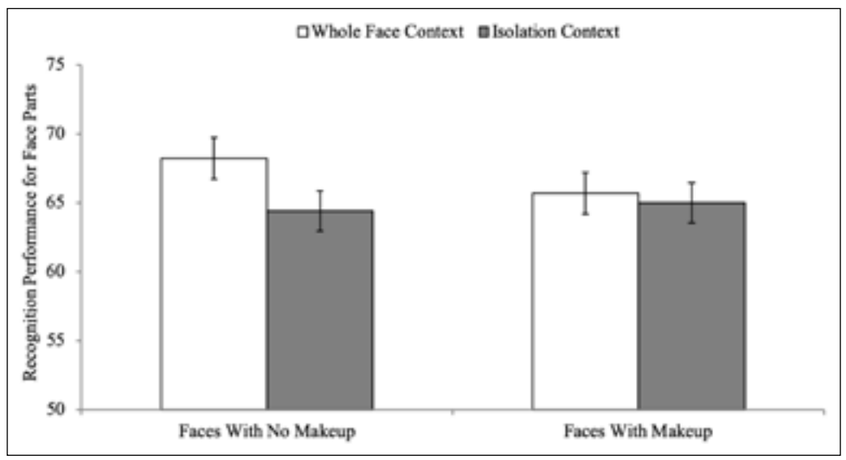

Figure 2: Recognition Performance for Face Parts as a Function of Recognition Task and Face Sexualization.

In sum, participants spent more time looking at pictures of whole faces than at face parts during the recognition phase. Importantly, the absence of interaction between face sexualization and recognition task suggests that the lower configural processing of faces with makeup is not driven by more time spent at looking at these stimuli.

Discussion

Most research on objectification and sexualization has documented how body sexualization triggers cognitive objectification and related dehumanization (for reviews, see Bernard, Gervais et al., 2018; Ward, 2016), showing that sexualized bodies are less likely to be processed as wholes and more likely to be processed in an analytic, part-based manner, in a way that resembles how most objects are typically processed. In line with the tenets of Objectification Theory (Fredrickson & Roberts, 1997), this recent line of research provided converging evidence that people tend to cognitively reduce sexualized bodies to their body parts (e.g., Bernard, Rizzo et al., 2018; Bernard et al., 2019). However, very little was known about whether subtler manifestations of sexualization, such as the use of makeup, might affect the way we see 'ordinary' women. To fill this gap, we examined whether sexualized faces with makeup, akin to sexualized bodies, were reduced to their parts.

Consistent with the notion that sexualization can be conveyed through facial cues (Messineo, 2008; Smolak et al., 2014), we found that faces with makeup were perceived as being more sexualized than faces without makeup. However, it is worth noting that faces with makeup were rated as moderately sexualized, which indicates that perceived sexualization based on facial cues is subtler than perceived sexualization associated with posture suggestiveness and nudity (e.g., Bernard et al., 2019).

Contrary to our hypothesis, the interaction between face sexualization and recognition task was not significant. However, our results revealed an interaction between face sexualization, recognition task and face parts. The examination of simple effects revealed that faces with makeup were processed less configurally than faces without makeup and this pattern was specifically driven by eye makeup, not by lipstick. Mouths with lipstick were better recognized in the context of whole faces. In contrast, we found that eyes with makeup were equally well recognized in isolation than in the context of whole faces, indicating that eye makeup caused a specific analytic processing of these face parts. The absence of interaction between recognition task and makeup when considering reaction times suggests that the differences found in the recognition performance for faces with makeup vs. without makeup were not driven by a speed-accuracy bias (e.g., longer reaction times associated with the recognition of face parts for faces with makeup vs. no makeup).

Whereas previous research showed that focusing on people's faces might temper the effects of appearance-focus and sexualization on cognitive objectification (Bernard, Gervais, Holland, & Dodd, 2018; Gervais, Holland, & Dodd, 2013; Nummenmaa, Hietanen, Santtila & Hyönä, 2012) and related dehumanization (Gray et al., 2011; Loughan et al., 2010), our results suggest that such intervention may not be efficient when faces are sexualized, especially through the use of eye makeup (e.g., mascara).

Limitations and Future Directions

It is worth noting that the effect of makeup on diminished configural processing was driven by eye makeup, not by lipstick. These results seem meaningful in light of neuroscience studies that found that the eye region plays a critical role in configural face processing. For instance, it has been proposed that the larger N170 typically found for inverted (vs. upright) faces might be due to the activation of eye-selective neurons whereas eye-selective areas are inhibited when eyes are presented in the context of a face for which configural information is not altered, i.e., in the context of upright faces (Itier, Alain, Sedore, & McIntosh, 2007). Future research should rely on such EEG paradigms to test the role of eye makeup versus lipstick on diminished configural face processing. Relatedly, it would be valuable to examine the attentional mechanisms involved in the perception of faces with makeup while using eye-tracking devices. It is possible that mascara creates a greater facial contrast (Russell, 2003) than lipstick, which may attract attention from participants. If this explanation is true, then one may expect that people would focus more rapidly and for more time on the eyes than on the mouth when looking at faces with makeup.

On another note, one may wonder whether our results might simply reflect that women are 'ordinary' experts in facial makeup because they frequently use it. Research in neuroscience has provided results that are inconsistent with this possibility. Indeed, it has been shown that, after two weeks of expertise training with novel objects (initially perceived analytically), people appraise them configurally (Rossion, Gauthier, Goffaux, Tarr, & Crommelinck, 2002). In other words, applied to our research, familiarity/expertise with makeup would have translated into configural processing of faces with cosmetics, not the opposite. However, whether people with *high* expertise in cosmetics (e.g., estheticians, cosmetic surgeons) process faces with makeup configurally remains an open question.

We created faces wearing moderate makeup (cf. makeup ratings in the manipulation check section) versus no makeup. This being said, our method does not able to determine whether lighter levels of makeup would be associated with lower configural face processing. It might be that the objectification of sexualized faces varies linearly as a function of the amount of makeup. It might then be interesting for future research to use different intensity of makeup (e.g., Etcoff, Stock, Haley, Vickery, & House, 2011). In addition, it could be valuable to assess whether other potential sexualizing facial cues such as seductive/flirty facial expressions could cause objectification of faces. This would also enable researchers to test whether the effect of face sexualization on face perception is target-gender specific or not. Moreover, given that our sample mostly included female

participants, we were not able to test the moderating role of participant gender. As mentioned in the pre-registration, we had no *a priori* hypothesis about this. This possibility seemed indeed unlikely given that all cognitive objectification studies found no evidence in favor of such moderation (for a review, see Bernard, Gervais et al., 2018). Nonetheless, it would be ideal for future research to replicate this experiment to test whether the effect of cosmetics on face processing are generalizable to male perceivers.

Our research focused on the cognitive processes involved in the perception of sexualized faces. Future research should uncover the social implications of face sexualization. It might be that sexualized faces with makeup, akin to sexualized bodies, might be seen as possessing less humanness and mind than faces without makeup. This possibility seems plausible in the light of research showing that faces with heavy makeup are perceived as being e.g., less moral, more frivol and more superficial than women's faces without makeup (for a review, see Richetin et al., 2007). It might be that faces wearing makeup are processed less configurally because they are perceived as possessing less mind and humanness, which is consistent with recent investigations that showed that sexualized bodies (e.g., Bernard, Content et al., 2018; Bernard, Rizzo et al., 2018) as well as dehumanized people (e.g., norm violators: Fincher & Tetlock, 2016) are processed less configurally. Relatedly, an important avenue for future research is to examine the relationships between configural processing of faces with makeup and impression formation to determine whether cognitive objectification and related dehumanization are related or independent phenomena. For instance, altering configural face information (i.e., by presenting faces in an inverted position) impairs the ability to categorize faces as human and as possessing human-like traits (Hugenberg et al., 2016). Testing whether cognitive objectification of face causes dehumanization would enable to uncover the potential negative consequences of face objectification and related dehumanization (e.g., victim blaming: Loughnan et al., 2013; tolerance toward sexual harassment: Bernard, Legrand, & Klein, 2018).

This paper introduced the notion that sexualization can be communicated through facial cues such as makeup. We have demonstrated that makeup contributes to processing women's faces less configurally and more analytically in a way that resembles the way most objects are processed. We hope this research will invite researchers to further explore how and why face sexualization affects the way people see ordinary women as well as the behavioral consequences of this phenomenon.

Additional File

The additional file for this article can be found as follows:

- **Supplementary Materials.** Secondary results. DOI: https://doi.org/10.5334/irsp.211.s1

Funding Information

This research was supported by the National Fund for Scientific Research (FRS-FNRS, Belgium).

Competing Interests

The authors have no competing interests to declare.

Author Information

Philippe Bernard and Lara Servais, Center for Social and Cultural Psychology, Université Libre de Bruxelles, Philippine Geelhand, ACTE at LaDisco and ULB Neuroscience Institute, Université Libre de Bruxelles.

References

Bernard, P., Content, J., Deltenre, P., & **Colin, C.** (2018). When the body becomes no more than the sum of its parts: The neural correlates of scrambled vs. intact sexualized bodies. *Neuroreport*, *29*, 48–53. DOI: https://doi.org/10.1097/WNR.0000000000000926

Bernard, P., Gervais, S. J., Allen, J., Campomizzi, S., & **Klein, O.** (2012). Integrating sexual objectification with object versus person recognition: The sexualized body-inversion hypothesis. *Psychological Science*, *23*, 469–471. DOI: https://doi.org/10.1177/0956797611434748

Bernard, P., Gervais, S. J., Allen, J., Campomizzi, S., & **Klein, O.** (2015). Body parts reduction and self-objectification in the objectification of sexualized bodies. *International Review of Social Psychology*, *28*, 39–61. Retrieved from https://www.cairn.info/load_pdf.php?ID_ARTICLERIPSO_281_0039

Bernard, P., Gervais, S. J., Allen, J., Delmée, A., & **Klein, O.** (2015). From sex objects to human beings: Masked sexual body parts and humanization as moderators to women's objectification. *Psychology of Women Quarterly*, *39*, 432–446. DOI: https://doi.org/10.1177/0361684315580125

Bernard, P., Gervais, S. J., Holland, A. M., & **Dodd, M. D.** (2018). When do people "check out" male bodies? Appearance-focus increases the objectifying gaze toward men. *Psychology of Men and Masculinity*, *19*, 484–489. DOI: https://doi.org/10.1037/men0000122

Bernard, P., Gervais, S. J., & **Klein, O.** (2018). Objectifying objectification: When and why people are cognitively reduced to their parts akin to objects. *European Review of Social Psychology*, *29*, 82–121. DOI: https://doi.org/10.1080/10463283.2018.1471949

Bernard, P., Hanoteau, F., Gervais, S., Servais, L., Bertolone, I., Deltenre, P., & **Colin, C.** (2019). Revealing clothing does not make the object: ERP evidences that cognitive objectification is driven by posture suggestiveness, not by revealing clothing. *Personality and Social Psychology Bulletin*, *45*, 16–36. DOI: https://doi.org/10.1177/0146167218775690

Bernard, P., Legrand, S., & **Klein, O.** (2018). From bodies to blame: Exposure to sexually objectifying media increases tolerance toward sexual harassment. *Psychology of Popular Media Culture*, *7*, 99–112. DOI: https://doi.org/10.1037/ppm0000114

Bernard, P., Rizzo, T., Hoonhorst, I., Deliens, G., Gervais, S., Eberlen, J., Klein, O., et al. (2018). The neural correlates of cognitive objectification: an ERP study on the body-inversion effect associated with sexualized bodies. *Social and Psychological Personality Science*, *9*, 550–559. DOI: https://doi.org/10.1177/1948550617714582

Bernard, P., & **Wollast, R.** (2019). Why is sexualization dehumanizing? The effects of posture suggestiveness and revealing clothing on dehumanization. *SAGE Open*, *9*. DOI: https://doi.org/10.1177/2158244019828230

Civile, C., & **Obhi, S. S.** (2016). Power, objectification, and recognition of sexualized women and men. *Psychology of Women Quarterly*, *40*, 199–212. DOI: https://doi.org/10.1177/0361684315604820

Cogoni, C., Carnaghi, A., Mitrovic, A., Leder, H., Fantoni, C., & **Silani, G.** (2018). Understanding the mechanisms behind the sexualized-body inversion hypothesis: The role of asymmetry and attention biases. *PloS one*, *13*, e0193944. DOI: https://doi.org/10.1371/journal.pone.0193944

de Gelder, B., Van den Stock, J., Meeren, H. K. M., Sinke, C. B. A., Kret, M. E., & **Tamietto, M.** (2010). Standing up for the body. Recent progress in uncovering the networks involved in processing bodies and bodily expressions. *Neuroscience and Biobehavioral Reviews*, *34*, 513–527. DOI: https://doi.org/10.1016/j.neubiorev.2009.10.008

Etcoff, N. L., Stock, S., Haley, L. E., Vickery, S. A., & **House, D. M.** (2011). Cosmetics as a feature of the extended human phenotype: Modulation of the perception of biologically important facial signals. *PloS one*, *6*. DOI: https://doi.org/10.1371/journal.pone.0025656

Fincher, K. M., & **Tetlock, P. E.** (2016). Perceptual dehumanisation of faces is activated by norm violations and facilitates norm enforcement. *Journal of Experimental Psychology: General*, *145*, 131–146. DOI: https://doi.org/10.1037/xge0000132

Fredrickson, B. L., & **Roberts, T. A.** (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*, 173–206. DOI: https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

Gervais, S. J., Holland, A. M., & **Dodd, M. D.** (2013). My eyes are up here: The nature of the objectifying gaze toward women. *Sex Roles*, *69*, 557–570. DOI: https://doi.org/10.1007/s11199-013-0316-x

Gervais, S. J., Vescio, T. K., Förster, J., Maass, A., & **Suitner, C.** (2012). Seeing women as objects: The sexual body part recognition bias. *European Journal of Social Psychology*, *42*, 743–753. DOI: https://doi.org/10.1002/ejsp.1890

Graham, J. A., & **Jouhar, A. J.** (1981). The effects of cosmetics on person perception. *International of Cosmetic Science*, *3*, 199–210. DOI: https://doi.org/10.1111/j.1467-2494.1981.tb00283.x

Gray, K., Knobe, J., Sheskin, M., Bloom, P., & **Barrett, L.** (2011). More than a body: Mind perception and the nature of objectification. *Journal of Personality and Social Psychology*, *101*, 1207–1220. DOI: https://doi.org/10.1037/a0025883

Hatton, E., & **Trautner, M. N.** (2011). Equal opportunity objectification? The sexualization of men and women on the cover of Rolling Stone. *Sexuality & Culture*, *15*, 256–278. DOI: https://doi.org/10.1007/s12119-011-9093-2

Hugenberg, K., Young, S., Rydell, R. J., Almaraz, S., Stanko, K. A., See, P. E., & **Wilson, J. P.** (2016). The face of humanity: Configural face processing influences ascriptions of humanness. *Social Psychological and Personality Science*, *7*, 167–175. DOI: https://doi.org/10.1177/1948550615609734

Itier, R. J., Alain, C., Sedore, K., & **McIntosh, A. R.** (2007). Early face processing specificity: It's in the eyes! *Journal of Cognitive Neuroscience*, *19*, 1815–1826. DOI: https://doi.org/10.1162/jocn.2007.19.11.1815

Kumar, S. (2005). Exploratory analysis of global cosmetic industry: Major players, technology and market trends. *Technovation*, *25*, 1263–1272. DOI: https://doi.org/10.1016/j.technovation.2004.07.003

Leys, C., Ley, C., Klein, O., Bernard, P., & **Licata, L.** (2013). Detecting outliers: Do not use the standard deviation around the mean, use absolute deviation around the median. *Journal of Experimental Social Psychology*, *49*, 764–766. DOI: https://doi.org/10.1016/j.jesp.2013.03.013

Loughnan, S., Haslam, N., Murnane, T., Vaes, J., Reynolds, C., & **Suitner, C.** (2010). Objectification leads to depersonalization: The denial of mind and moral concern to objectified others. *European Journal of Social Psychology*, *40*, 709–717. DOI: https://doi.org/10.1002/ejsp.755

Loughnan, S., Pina, A., Vasquez, E. A., & **Puvia, E.** (2013). Sexual objectification increases rape victim blame and decreases perceived suffering. *Psychology of Women Quarterly*, *37*, 455–461. DOI: https://doi.org/10.1177/0361684313485718

Maurer, D., Le Grand, R., & **Mondloch, C. J.** (2002). The many faces of configural processing. *Trends in Cognitive Sciences*, *6*, 255–260. DOI: https://doi.org/10.1016/S1364-6613(02)01903-4

Messineo, M. J. (2008). Does advertising on Black entertainment television portray more positive gender representations compared to broadcast networks? *Sex Roles*, *59*, 752–764. DOI: https://doi.org/10.1007/s11199-008-9470-y

Nummenmaa, L., Hietanen, J. K., Santtila, P., & **Hyönä, J.** (2012). Gender and visibility of sexual cues influence eye movements while viewing faces and bodies. *Archives of Sexual Behavior*, *41*, 1439–1451. DOI: https://doi.org/10.1007/s10508-012-9911-0

Richetin, J., Huguet, P., & **Croizet, J. C.** (2007). Le rôle des cosmétiques dans les premières impressions: Le cas particulier du maquillage. *L'Année Psychologique*, *107*, 65–86. Retrieved from http://www.persee.fr/doc/psy_0003-5033_2007_num_107_1_30937. DOI: https://doi.org/10.4074/S0003503307001042

Rossion, B., Gauthier, I., Goffaux, V., Tarr, M. J., & **Crommelinck, M.** (2002). Expertise training with novel objects leads to left-lateralized facelike electrophysiological responses. *Psychological Science*, *13*, 250–257. DOI: https://doi.org/10.1111/1467-9280.00446

Russell, R. (2003). Sex, beauty, and the relative luminance of facial features. *Perception*, *32*, 1093–1107. DOI: https://doi.org/10.1068/p5101

Seitz, K. (2002). Parts and wholes in person recognition: Developmental trends. *Journal of Experimental Child Psychology*, *82*, 367–381. DOI: https://doi.org/10.1016/S0022-0965(02)00106-6

Smolak, L., Murnen, S. K., & **Myers, T. A.** (2014). Sexualizing the self: What college women and men think about and do to be "sexy". *Psychology of Women Quarterly*, *38*, 379–397. DOI: https://doi.org/10.1177/0361684314524168

Soria Bauser, D., & **Suchan, B.** (2018). The role of the head in configural body processing: Behavioural and electrophysiological evidence from the inversion and scrambling effect. *British Journal of Psychology*, *109*, 564–582. DOI: https://doi.org/10.1111/bjop.12287

Stankiewicz, J. M., & **Rosselli, F.** (2008). Women as sex objects and victims in print advertisements. *Sex Roles*, *58*, 579–589. DOI: https://doi.org/10.1007/s11199-007-9359-1

Stekelenburg, J. J., & **de Gelder, B.** (2004). The neural correlates of perceiving human bodies: An ERP study on the body-inversion effect. *Neuroreport*, *15*, 777–780. DOI: https://doi.org/10.1097/00001756-200404090-00007

Tanaka, H. (2016). Facial cosmetics exert a greater influence on processing of the mouth relative to the eyes: Evidence from the N170 event-related potential component. *Frontiers in Psychology*, *7*, 1359. DOI: https://doi.org/10.3389/fpsyg.2016.01359

Tanaka, J. W., & **Farah, M. J.** (1993). Parts and wholes in face recognition. *The Quarterly Journal of Experimental Psychology*, *46*, 225–245. DOI: https://doi.org/10.1080/14640749308401045

Vaes, J., Paladino, M. P., & **Puvia, E.** (2011). Are sexualized women complete human beings? Why men and women dehumanize sexually objectified women. *European Journal of Social Psychology*, *41*, 774–785. DOI: https://doi.org/10.1002/ejsp.824

Ward, L. M. (2016). Media and sexualization: State of empirical research, 1995–2015. *The Journal of Sex Research*, *53*, 560–577. DOI: https://doi.org/10.1080/00224499.2016.1142496

How to cite this article: Bernard, P., Geelhand, P., & Servais, L. (2019). The Face of Sexualization: Faces Wearing Makeup are Processed Less Configurally than Faces Without Makeup. *International Review of Social Psychology*, 32(1): 16, 1–8. DOI: https://doi.org/10.5334/irsp.211

Submitted: 03 September 2018 **Accepted**: 18 September 2019 **Published:** 23 October 2019