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How perception affects racial categorization: On the influence of initial visual exposure on labelling people as diverse individuals or racial subjects

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Abstract

In research on racial categorization, we tend to focus on socialisation, on environmental influences and on social factors. One important factor, though, is perception itself. In our experiment, we let people label persons on dimensions which they could freely use. The participants were either initially exposed to a full series of black faces or of white faces. We observed a clear effect of initial exposure on explicit verbal categorizations. When initially exposed to white faces, participants used racial labels for the subsequent black faces only. In contrast, racial labels were used for black as well as white faces after initial exposure to black faces, which indicates a shift to in-group categorization after having initially inspected black faces. In conclusion, this effect documents highly adaptive categorizations caused by visual context alone, suggesting that racial thoughts are based on relatively volatile category representations.

Keywords: face perception; categorization; naming; group bias; social cognition; racism

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"Race does not exist. But it does kill people." The statement by Guillaumin (1999, p. 46) pointedly expresses that a concept, although scientifically untenable, nevertheless affects behaviour based on mental realities. From a socio-cognitive perspective a central source of racist thoughts and actions is categorization. People categorize individuals as out-group members based on purely perceptual features such as hairstyle or skin colour. According to traditional socio-cognitive models "race" or out-group faces are explicitly represented as categories, leading to biased visual processes and the attribution of stereotypes (MacLin & Malpass, 2003), whereas in-group faces are processed at an experience-based, individual level (Sporer, 2001). These models differ in the exact mechanism of categorization and in the role of experience, but congruently do not account explicitly for situational factors.

Here we propose that initial visual exposure affects racial categorizations in subsequent episodes. Imagine the following episode: Jeffrey, a white middle-class individual, enters a barber's shop and finds white persons only. Jeffrey has no reason to categorize these persons according to their race. When a black person enters the shop, Jeffrey is likely to categorize her as black, because she differs from the facial context according to her "race." Next a white person enters the shop. Jeffrey is unlikely to categorize her as white, because initial exposure to whites corresponds to Jeffrey's default in-group category. Now imagine Jeffrey entering a barber's shop finding black persons only. He categorizes them as black, because they are in contrast to his default "race" category. Now a white person enters the room. How will Jeffrey categorize this

person? We predict that Jeffrey is likely to categorize her as white, because he adapts to the visual-social context (black people) at the shop. The following experiment simulates such situations.

Fifty-eight Central European white participants were asked to "spontaneously name in one word" 48 black and 48 white unfamiliar faces presented in a sequence of five alternating blocks. Often naming task instructions are supplemented by reminders during the experiment to meet participants' tendency to use more descriptive terms instead of one word namings (e.g. Belke, Leder, Harsányi, & Carbon, 2010). Here such additional instructions were explicitly not implemented to enhance ecological validity. Half of the participants received the "initial white" condition, in which blocks 1 and 3 comprised white faces only, blocks 2 and 5 comprised black faces only, and block 4 consisted of intermixed black and white faces. Half of the participants received the "initial black" condition, where black and white faces were presented in reverse order; again with intermixed faces in block 4 (see Figure 1). Free naming responses were independently coded into a "race" category (e.g. "dark-skinned man," "Africa," and "white man"), if at least 4 out of the 5 coders agreed upon the category membership.

[insert Figure 1 about here]

Figure 2 shows the mean numbers of naming responses related to the "race" of the face. A majority 69% of participants referred at least once to the "race" category. This alone is remarkable, because it was not prompted to use racial labels at all. A 2 (set-order: "initial white"/"initial black") × 5 (blocks of trials) mixed-design ANOVA for "race" categorizations resulted in a significant interaction of set-order × blocks, $F_{GG}(1.69, 94.82) = 5.63$, $p = .007$, $\eta_p^2 =$

.09. The main effects of blocks of trials and set-order were not significant, $F_{GG}(1.69, 94.82) = 2.44$, $p = .101$, *n.s.*; $F(1, 56) = 1.18$, $p = .282$, *n.s.*, respectively. Mauchly's test indicated a violation of sphericity, $\chi^2 (9) = 124.95$, $p < .001$, therefore *df*s were corrected using Greenhouse-Geisser estimates, $\varepsilon = .42$. Initially, participants exposed to black faces used significantly more racial labels ($M = .15$) than those who were exposed to white faces ($M = .01$), $M_{diff} = .14$, $t(28) = 2.59$, $p = .012$, $d = .49$. This is not surprising because traditional socio-cognitive models predict the use of out-group labels in consequence of processing out-group members at a categorical level rather than at an individual level. When exposed to black faces in block 2, participants who had initially named white faces made use of racial labels to a similar degree ($M = .13$) than to those who started naming black faces ($M = .13$), $M_{diff} < .01$, $t(28) = 0.03$, $p = .977$, *n.s.* Subsequently, when switched back to white faces, the frequency of racial labels decreased, $M_{diff} = .11$, $t(28) = 3.45$, $p = .011$, $d = .65$, and was close to zero again ($M = .02$). When initially exposed to in-group faces, race is not perceived as a relevant category presumably because white faces are the default category for white participants.

[insert Figure 2 about here]

Most importantly, participants who initially named black faces continued using racial labels even for white faces (e.g. "white man") throughout the experiment. A shift of categorization occurred due to initial exposure to black faces, which signals that "race" is an informative category for the entire episode. Such situational shifts of categorization are difficult to explain by mere categorization-based theories (MacLin & Malpass, 2003; Sporer, 2001). More recently, the Categorization-Individuation Model (Hugenberg, Young, Bernstein, & Sacco, 2010)

explicitly accounted for such context effects by extending the socio-cognitive perspective with situational factors, which motivate perceivers to attend either to facial information facilitating within-group individuation, or to facial information facilitating between-group categorization. Here we demonstrated a shift toward between-group categorization solely based on initial visual exposure to out-group faces, but not after exposure to in-group faces. Categorization is not based on rigid in- and out-group category representations, but is highly sensitive to specific contexts, making it likely thoughts and actions based on race are context-sensitive, too.

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References

Belke, B., Leder, H., Harsányi, G., & Carbon, C.-C. (2010). When a Picasso is a "Picasso": The entry point in the identification of visual art. *Acta Psychologica, 133*(2), 191-202.

Guillaumin, C. (1999). “I know it’s not nice, but...”: The changing face of race. In R. D. Torres, L. F. Mirón & J. X. Inda (Eds.), *Race, identity and citizenship: A reader* (pp. 39-46). Oxford: Blackwell.

Hugenberg, K., Young, S. G., Bernstein, M. J., & Sacco, D. F. (2010). The Categorization-Individuation Model: An integrative account of the other-race recognition deficit. *Psychological Review, 117*(4), 1168-1187.

MacLin, O. H., & Malpass, R. S. (2003). Last but not least: The ambiguous-race face illusion. *Perception, 32*(2), 249-252.

Sporer, S. L. (2001). Recognizing faces of other ethnic groups - An integration of theories. *Psychology Public Policy and Law, 7*(1), 36-97.

Figure 1: Illustration of the experimental design.

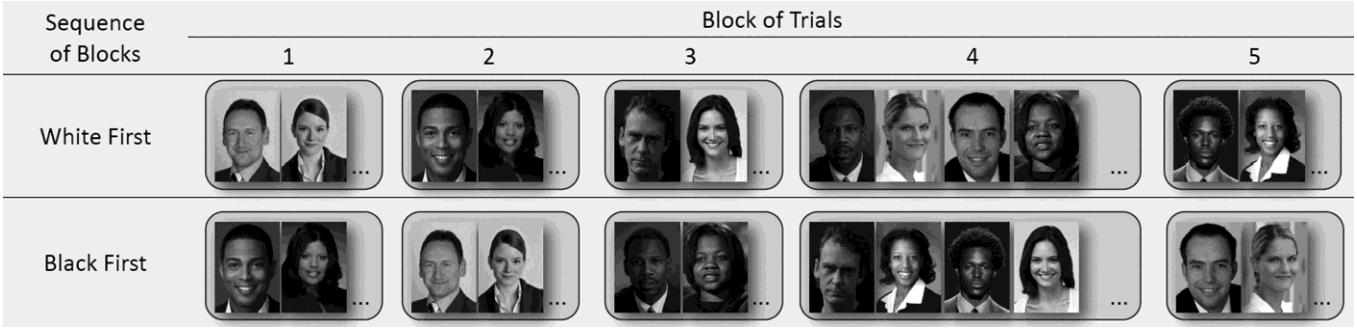

Figure 2: Probabilities of race naming responses over the course of the experiment. Squares represent set-order “initial white,” circles represent “initial black.” White and black fillings represent white or black faces, respectively. Grey fillings represent intermixed presentation of white and black faces. Error bars indicate ± 1 standard error of the mean (SEM).