

# On the (Mis)Categorization of Unattractive Brides and Attractive Prostitutes

## Extending Evaluative Congruency Effects to Social Category Activation

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**Abstract.** Numerous studies have shown that social categorization is a flexible process that partly depends on contextual variables. However, little is known about the role of affect in people's access to categorical dimensions. We investigated the hypothesis that social category activation is facilitated on evaluatively congruent dimensions. Two studies provide support for this evaluative-matching hypothesis, in which social categorization was found to be faster and more accurate for evaluatively congruent categories (i.e., unattractive foreigners, unattractive prostitutes, attractive fellow-citizens and attractive brides) than for evaluatively incongruent categories (i.e., attractive foreigners, attractive prostitutes, unattractive fellow-citizens and unattractive brides). We discuss the theoretical and practical implications of these findings.

**Keywords:** automatic evaluation, categorization, stereotypes, attractiveness

The automatic activation of valence has been a central topic of investigation for twenty years (for a review, see Fazio, 2001). This research was traditionally concerned with automatic evaluation and its implications for the implicit measurement of attitudes. For instance, research on affective priming showed that evaluative responses are speeded on targets that are evaluatively congruent with a prime, and this effect was used to measure the valence acquired by primes unobtrusively (for a review, see Klauer, 1998). This affective priming process may also prove useful for advancing our understanding of a psychological phenomenon that is in itself unrelated to attitude measurement: *social category activation*. Social categories often have strong associated evaluations. In the present research, we investigated the hypothesis that automatic evaluations induced by the individual features of a stimulus may facilitate access to evaluatively congruent category dimensions of this stimulus. To illustrate, assuming people value the category "smoker" negatively, access to the latter category may be facilitated upon encountering a smoker who displays a negative individual feature (i.e., an unattractive smoker) rather than a positive individual feature (i.e., an attractive smoker).

Consistent with the evaluative-matching hypothesis, Niedenthal and Cantor (1986) showed that people estimate that social categories are more applicable to a given

person when these categories match in valence the individual features of this person. For instance, participants in this study judged it more likely that an individual belonged to the category "recreational sportsman" (a positive category) than to the category "scheming politician" (a negative category) when displaying dilated pupils (a positive feature) than constricted ones (a negative feature). The question remains, however, whether similar effects can be obtained at the category *activation* (instead of category application) stage, that is under conditions where people have presumably little control over their responses (Devine, 1989). Furthermore, the question also remains whether evaluative-congruency effects may impact on the categorization of individuals whose category membership is not ambiguous. This latter effect may be obtained, with early access to social categories facilitated on categorical dimensions matching individual features in valence, even for targets who unambiguously display the social category of concern.

Recent work by Hugenberg (2005) provides preliminary support for the hypothesis that evaluative congruency effects may impact on social category activation. In this research the race of the target moderated the response latency advantage for happy faces (for a review on the response latency advantage for happy faces see Leppänen, Tenhunen, & Hietanen, 2003). Thus, participants categorized

faster the emotion displayed by happy relative to angry (or sad) White faces, whereas the opposite pattern of findings was obtained for black faces. In discussing these findings, Hugenberg (2005) alluded to the possibility that an evaluative priming mechanism could underlie these effects, with the race of the face offering an evaluative context against which the valence of the emotion is accessed. This account may be relevant, yet broader than previously envisioned. Evaluative congruency effects may not only apply to the categorization of facial affect, but may also influence the accessibility of any sufficiently valenced dimension in the social categorization process.

Consistent with this hypothesis also is the work by Hugenberg and Bodenhausen (2004a). These authors had participants scoring low or high in prejudice categorize racially ambiguous faces displaying a happy or angry expression as black or White. Results showed that racial prejudice was associated with a tendency to categorize angry rather than happy faces as black. The authors proposed that the stereotypical belief of blacks being aggressive might have caused this effect. They assumed that because angry facial expressions are seen as hostile, and because hostility is part of the stereotype of African-Americans, this stereotyping process led high-prejudice participants to be more inclined to categorize racially ambiguous angry faces as African American.

However an additional, and more direct (as it is not mediated by activation of stereotypical traits), mechanism may have contributed to these findings. In keeping with Niedenthal and Cantor (1986), especially the racially prejudiced participants may have estimated the black category to be more applicable to a person with an angry facial expression, because anger matched this category in valence. If this intuition is correct, this process should affect the social categorization of both ambiguous and unambiguous targets on either racial or nonracial, less basic dimensions. It should also apply irrespective of specific stereotypes that relate races to emotions.

In sum, the present research investigated the hypothesis that evaluative congruency may influence (1) category *activation* over and above category application, that it may (2) affect the categorization of *unambiguous* targets, and that it may (3) impact the social categorization of individuals on racial *and* nonracial dimensions. This general hypothesis was examined in two studies wherein we independently varied the valence of the faces and the valence of the social categories to which the faces pertained. We manipulated the valence of the faces by varying their attractiveness. Very attractive faces (automatically) produce positive evaluations and very unattractive faces produce negative evaluations (Dion, Berscheid, & Walster, 1973; Van Leeuwen & Macrae, 2004). In Study 1, Dutch participants were asked to categorize as “Dutch” (a positive cat-

egory) or “foreign” (a negative category) faces that looked typically foreign or Dutch and that either were attractive (a positive feature) or unattractive (a negative feature). We predicted that responses would be faster and more accurate in categorizing attractive Dutch and unattractive foreign faces than unattractive Dutch and attractive foreign faces.

In Study 2, we extended these findings to different social categories, namely, “brides” (a positive category) and “prostitutes” (a negative category)<sup>1</sup>, which varied in attractiveness. We predicted faster and more accurate responses in categorizing attractive brides and unattractive prostitutes than unattractive brides and attractive prostitutes. Note that in the latter case group membership was not involved, as our student sample was unlikely to predominantly involve brides and/or prostitutes. We thought it would be important to control for this possibility as some may argue that Study 1 as well as the work by Hugenberg and Bodenhausen (2004a) merely tackled an automatic ingroup overexclusion effect (Leyens & Yzerbyt, 1992), with participants motivated to associate their ingroup with positive facial affect and the outgroup with negative facial affect.

## Study 1

### Method

#### Participants

A total of 67 participants (51 women and 16 men) took part, all undergraduate students at the University of Amsterdam, The Netherlands. Participants received extra course credit.

#### Stimuli and Procedures

We selected 120 photographs of males and females, consisting of 40 attractive faces, 40 unattractive faces, and 40 neutral faces that served as fillers. Half the faces of each group appeared typical Dutch (i.e., white skin, light-colored hair), whereas the other half appeared to be typical foreigners in the Netherlands (i.e., dark skin, black hair). The height of photographs was 15.01 cm and width was unrestricted. We investigated in a pretest whether the attractive and unattractive faces indeed differed in attractiveness. Eighty participants rated the attractiveness of each face on a 7-point scale ranging from 1 (*unattractive*) to 7 (*attractive*). The pretest showed that participants rated the attractive faces as more attractive than the unattractive faces, both for the Dutch,  $t(80) = 30.69$ ,  $p < .001$ ,  $M_{att} = 4.88$ ,  $SD_{att} = .80$ ,  $M_{unatt} = 1.71$ ,  $SD_{unatt} = .59$ , and the foreign faces,  $t(80) = 29.17$ ,  $p < .001$ ,  $M_{att} = 4.65$ ,  $SD_{att} = .76$ ,  $M_{unatt} = 2.01$ ,  $SD_{unatt} = .62$ .

<sup>1</sup> We chose these rather odd categories, because it was difficult to come up with other social categories that jointly fulfilled all of our criteria: (1) One group being clearly negative and the other clearly positive; (2) Both being outgroups; (3) Realistically, both can be attractive or unattractive; (4) Being immediately recognizable (e.g., because of outfit).

In the lab, participants were seated in front of a computer (Pentium 4, 2.60 GHz) and received instructions provided by the computer. The instructions explained that participants would be exposed to photographs of faces originating from different ethnic groups. The task was to indicate as fast as possible whether the face appeared Dutch or foreign. It was explained that typical Dutch faces have light-colored skin and eyes, whereas typical foreign faces have dark-colored skin and eyes.

The categorization task started with 8 practice trials, followed by the 120 selected faces presented in a random sequence. In each trial, we presented a face for 1 s, followed by a black screen for 3 s, followed by the next trial. Participants could respond as soon as a face appeared on the screen. They responded by pressing a yellow button for Dutch and a blue button for foreign. The locations of the yellow and blue buttons (i.e., left side or right side of the keyboard) were counterbalanced between participants. We measured categorization latencies and inaccurate categorizations. After the categorization task, participants were asked to report the ethnic origins of their parents.

## Results and Discussion

The responses of 53 participants were included in the analyses to investigate our hypothesis. We omitted the responses of three participants because they failed to follow the instructions of the categorization task. We omitted eleven participants because one of their parents (4) or both parents (7) were born outside of the Netherlands<sup>2</sup>.

### Categorization Latencies

Response times were analyzed for correct responses only (86%). We discarded RTs that deviated by more than 3 standard deviations from the mean RT per trial (.04%). We then performed a repeated measures ANOVA on the mean categorization latencies, with Attractiveness and Ethnicity as repeated factors. This revealed an Ethnicity effect,  $F(1, 52) = 39.87, p < .001$ , partial  $\eta^2 = .43$ , showing faster categorization of foreign ( $M = 619, SD = 67$ ) than Dutch ( $M = 663, SD = 86$ ) faces. More central to our hypothesis, the analysis revealed the predicted interaction between Attractiveness and Ethnicity,  $F(1, 52) = 9.42, p < .003$ , partial  $\eta^2 = .15$ , showing faster categorizations for evaluatively-congruent (i.e., attractive Dutch:  $M = 657, SD = 89$ ; unattractive foreigners:  $M = 610, SD = 74$ ) than for evaluatively-incongruent (i.e., unattractive

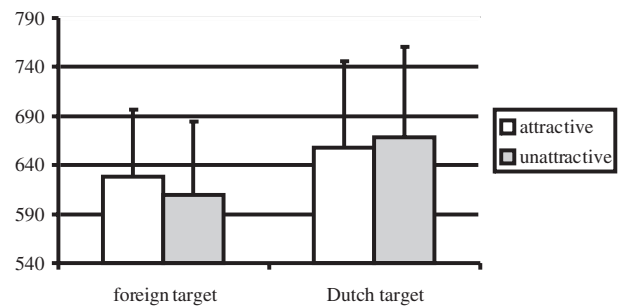


Figure 1a. Categorization latencies (+ SD) in ms as a function of attractiveness and ethnicity of the target.

Dutch:  $M = 669, SD = 91$ ; attractive foreigners:  $M = 628, SD = 69$ ) stimuli (Figure 1a)<sup>3</sup>.

### Inaccurate Categorizations

Inaccurate categorizations consisted of trials with wrong responses and trials wherein no response was registered (14%). We performed a repeated measures ANOVA on the number of inaccurate categorizations, with Attractiveness and Ethnicity as repeated factors. The predicted interaction between Attractiveness and Ethnicity was significant,  $F(1, 52) = 12.38, p < .001$ , partial  $\eta^2 = .19$ , showing fewer incorrect categorizations for evaluatively-congruent stimuli, i.e., attractive Dutch:  $M = 2.17, SD = 2.40$ ; unattractive foreigners:  $M = 2.49, SD = 1.67$ , than for evaluatively-incongruent stimuli, i.e., unattractive Dutch:  $M = 3.02, SD = 2.52$ ; attractive foreigners:  $M = 3.30, SD = 1.96$  (Figure 1b).

These findings confirm that people are both faster and more accurate in categorizing individuals on evaluatively congruent than evaluatively incongruent dimensions. This

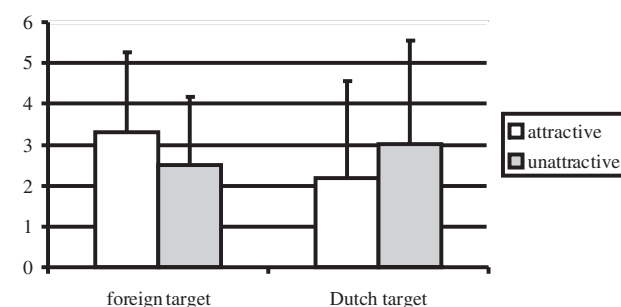


Figure 1b. Inaccurate categorizations (+ SD) as a function of attractiveness and ethnicity of the target.

<sup>2</sup> All effects (including interactive) reported below remained significant after including participants with parents born outside of the Netherlands in the analyses.

<sup>3</sup> Complementary analyses ran on the categorization latencies and incorrect categorizations in Study 1 and 2 did not consistently provide significant results when testing for the simple effects. This should not be considered problematic however, since our general hypothesis is that evaluatively congruent stimuli would be categorized faster and more accurately than evaluatively incongruent stimuli, which is supported by our interactions. We also remind the reader that testing for simple effects is highly misleading when a main effect is obtained in addition to an interaction, which was the case in most of the present analyses (see Rosnow & Rosenthal, 1995).

effect, which occurred on stimuli whose category membership was made unambiguous, is fully consistent with our hypothesis that category accessibility is facilitated for evaluatively congruent dimensions. However, one could argue that our results demonstrate an automatic ingroup overexclusion effect (Leyens & Yzerbyt, 1992). This account would suggest that identity concerns might have motivated participants to exclude unattractive ingroup members from the ingroup and to include attractive outgroup members into the ingroup. Assuming this motivational process is automatized and can occur in a few 100 ms, it might have contributed to our findings.

## Study 2

Study 2 was aimed at replicating and extending our findings on other social dimensions. It also sought to control for the overexclusion account, by disentangling the valence of the social categories and the category membership of the participants. To this end, we asked female participants to categorize pictures of attractive and unattractive brides (i.e., a positively-valenced social category) and prostitutes (i.e., a negatively-valenced social category) into these two social categories. We again expected categorization to be facilitated for evaluatively congruent (i.e., attractive brides, unattractive prostitutes) relative to evaluatively incongruent (i.e., unattractive brides, attractive prostitutes) stimuli.

## Method

### Participants

A total of 52 female participants took part, all undergraduate students at the Université catholique de Louvain, Belgium. Participants received extra course credit.

### Stimuli and Procedures

We selected 32 photographs, consisting of 16 attractive people and 16 unattractive people. Half of the people of each group appeared to be typical brides (i.e., they were wearing a brides dress), whereas the other half appeared to be typical prostitutes (i.e., they were wearing sexy lingerie). The height of photographs was 12 cm and width was unrestricted. We investigated in a pretest whether the attractive and unattractive people indeed differed in attractiveness. Thirteen female participants rated the attractiveness of the brides whereas sixteen female participants rated the attractiveness of the prostitutes, on 7-point scales ranging from 1 (*unattractive*) to 7 (*attractive*). The pretest showed that participants rated the attractive people as more attractive than the unattractive people, both for the brides,  $t(12) = 14.28, p < .001; M_{att} = 5.68, SD_{att} = .63; M_{unatt} = 1.74,$

$SD_{unatt} = .67,$  and the prostitutes,  $t(15) = 15.46, p < .001; M_{att} = 4.97, SD_{att} = 1.01; M_{unatt} = 1.27, SD_{unatt} = .25.$

In the lab, participants were seated in front of a computer (Pentium 3, 589 MHz) and received instructions provided by the computer. The instructions explained that participants would be exposed to photographs of people from different social groups. The task for the participants was to indicate as fast as possible whether the person appeared to be a bride or a prostitute. The categorization task started with 10 practice trials, followed by the 32 selected faces presented in a random sequence. In each trial, the photograph was presented until the participant's response. Participants responded by pressing "1" on the numeric keypad for bride and "3" on the numeric keypad for prostitute. We measured categorization latencies and inaccurate categorizations.

## Results

### Categorization Latencies

Response times were analyzed for correct responses only (96%). We discarded RTs that deviated by more than 3 standard deviations from the mean RT per trial (.02%). Then, we performed a repeated measures ANOVA on the mean categorization latencies, with Attractiveness and Social category as repeated factors. This analysis revealed a Social category effect,  $F(1, 51) = 62.23, p < .001,$  partial  $\eta^2 = .55,$  showing faster categorization of brides ( $M = 589, SD = 89$ ) than prostitutes ( $M = 725, SD = 180$ ). It also showed an Attractiveness effect,  $F(1, 51) = 8.21, p < .006,$  partial  $\eta^2 = .14,$  showing faster categorization of attractive ( $M = 643, SD = 118$ ) than unattractive ( $M = 671, SD = 145$ ) faces. These main effects were qualified by the predicted interaction between Attractiveness and Social-category,  $F(1, 51) = 20.85, p < .001,$  partial  $\eta^2 = .29,$  showing faster responses for evaluatively-congruent stimuli, i.e., attractive brides:  $M = 556, SD = 81;$  unattractive prostitutes:  $M = 721, SD = 207,$  than for evaluatively-incongruent stimuli, i.e., unattractive brides:  $M = 622, SD = 103;$  attractive prostitutes:  $M = 729, SD = 169$  (Figure 2a)<sup>3</sup>.

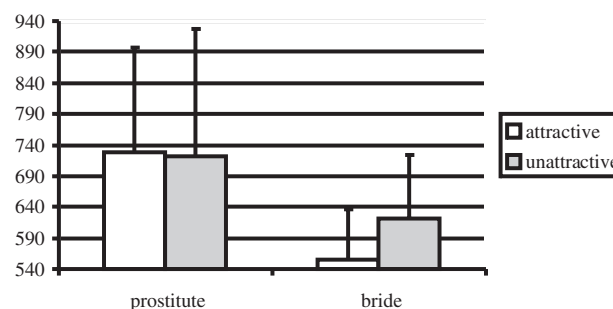


Figure 2a. Categorization latencies (+ SD) in ms as a function of attractiveness and social category of the target.

## Incorrect Categorizations

We performed a repeated measures ANOVA on the number of incorrect categorizations (3.8%), with Attractiveness and Social-Category as repeated factors. This revealed a Social-category effect,  $F(1, 51) = 10.89, p < .002$ , partial  $\eta^2 = .18$ , showing more incorrect categorizations for prostitutes ( $M = .46, SD = .66$ ) than brides ( $M = .14, SD = .25$ ). The analysis also revealed an Attractiveness effect,  $F(1, 51) = 10.63, p < .002$ , partial  $\eta^2 = .17$ , showing more incorrect categorizations for attractive stimuli ( $M = .41, SD = .53$ ) than unattractive stimuli ( $M = .19, SD = .30$ ). More central to our hypothesis, the predicted interaction of Attractiveness and Social category was significant,  $F(1, 51) = 23.33, p < .001$ , partial  $\eta^2 = .31$ , showing fewer incorrect categorizations for evaluatively-congruent stimuli, i.e., attractive brides:  $M = .06, SD = .24$ ; unattractive prostitutes:  $M = .15, SD = .46$ , than for evaluatively-incongruent stimuli, i.e., unattractive brides:  $M = .23, SD = .43$ ; attractive prostitutes:  $M = .77, SD = 1.06$  (Figure 2b).

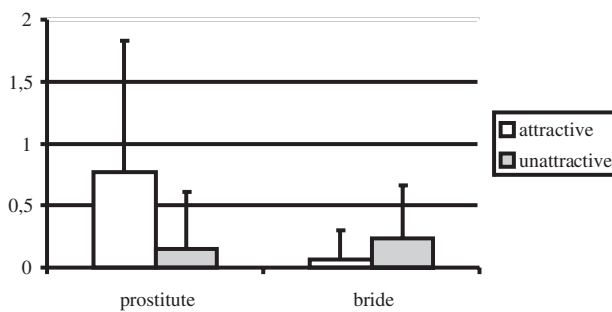


Figure 2b. Inaccurate categorizations (+ SD) as a function of attractiveness and social category of the target.

## General Discussion

Previous work has demonstrated that evaluative congruency may impact on (1) social category application (Niedenthal & Cantor, 1986) (2) race category application (Hugenberg & Bodenhausen, 2004a) and (3) facial affect category activation (Hugenberg, 2005). The present two studies extend this work by showing that evaluative congruency may also impact on social category activation. Results from the present two studies provide strong support for the hypothesis that access is facilitated for evaluatively congruent categorical dimensions. In the present research this effect was demonstrated on both categorization accuracy and categorization latencies. In addition, our studies show that this effect was obtained for categories that possibly involved (Study 1) or not (Study 2) a group membership component. We also observed this effect in categorizing stimuli on racial or nonracial dimensions. Finally, in contrast to previous work, we demonstrated an evaluative congruency effect in social category activation for stimuli whose category membership was made unambiguous. We expected these

findings on the basis of evaluative priming processes. We reasoned that the individual features of a face would act as affective primes, facilitating access to a social dimension of the face matching these features in valence. Our findings may thus be considered as a theoretical and empirical extension of prior affective priming work.

In the present studies, however, (1) evaluative responses were not involved (2) prime and targets were presented simultaneously (3) affective primes were attractive or unattractive facial features and (4) response competition was unlikely to operate; it would for instance make little sense to suggest that attractiveness induces in and of itself response tendencies that are related to marriage or prostitution. The present set of findings thus suggests that the scope of evaluative priming effects is much broader than previously envisioned. They should contribute to enhance our understanding of how affect impacts on basic categorization and social categorization processes.

A possible alternative explanation for the results of Study 2 could be that people were faster to categorize evaluatively congruent targets on the basis of stereotypic features. Thus, participants' faster responding to attractive brides than to unattractive brides might be interpreted as resulting from a match between stereotypical features and social category, instead of resulting from evaluative congruence. Admittedly, one may consider "looking well-groomed" as a stereotypic feature for brides and "looking trashy" as a stereotypic feature for prostitutes. However, in our view these two stereotypical features (e.g., looking well-groomed and looking trashy) mostly refer to clothes and makeup, and do not necessarily refer to inherent physical beauty (the variable of interest in our study). We also believe there is little empirical ground for assuming that prostitutes are stereotypically unattractive. On the contrary, one may reasonably assume that their activities involve some degree of attractiveness as their trade basically entails trading physical advantages for monetary rewards. Finally, our hypothesis is that automatic evaluations induced by the individual features of a stimulus may facilitate access to evaluatively congruent category dimensions of this stimulus. This does not mean that we regard evaluative reactions are entirely dissociated from meaning. For example, we explain our pretest finding that the photographs of the prostitutes were on average rated as less attractive than the photographs of the brides, by the fact that it might be difficult to judge a person's attractiveness without considering the person's social category. Thus, an attractive prostitute might be *explicitly* judged as less attractive, simply because she belongs to a negative social category. In line with this explanation, the pretest of Study 1 shows that the attractive foreign people were considered as slightly less attractive than the attractive Dutch people. Taking these points into account, we believe that an evaluative congruency account seems the most likely explanation for our results.

It also seems worth discussing the present findings in terms of typicality effects. A classic finding in category verification studies is that the categorization of typical cat-

egory members is facilitated relative to atypical exemplars (e.g., Rosch, Simpson, & Miller, 1976). People are for instance faster at categorizing an apple as fruit (a typical category member) than at categorizing a tomato as fruit (an atypical category member). One possibility is that evaluatively congruent stimuli are more typical of their category than evaluatively incongruent ones. To the best of our knowledge, no prior empirical (nor even theoretical work) made this suggestion for a positive relation between affective congruency and typicality. In contrast, ample evidence exists that typicality is mainly associated with positive evaluations (for a recent review, see Halberstadt, 2006). This is especially true in the context of face processing, with typical faces inducing more positive affects than atypical ones (e.g., Corneille, Monin & Pleyers, 2005) and attractive faces lying closer to face-space origins than unattractive ones (Potter, Corneille, Ruys, & Rhodes, 2007). As a matter of fact, part of the stimuli considered in Study 1 were also involved in the context of a multidimensional scaling study by Potter and colleagues (2007) investigating the variability of attractive and unattractive faces in a multidimensional face space based on similarity ratings. Complementary analyses conducted for the purpose of the present contribution demonstrated that face attractiveness was positively associated with typicality within *both* the same-race *and* other-race face clusters<sup>4</sup>. Therefore, we deem this typicality account of our findings both theoretically unsubstantiated and empirically weak.

Beyond their theoretical implications for the role of affect in categorization, the present findings also notably suggest that the role of affective processes in stereotyping and person perception may be much broader than generally thought. Individuals can be categorized in multiple ways, and research demonstrated that both individual and contextual factors influence category selection, most likely through a category accessibility process. For instance, Fazio and Dunton (1997) showed that prejudiced individuals may have a chronic access to the concept “black,” and so may rely more systematically on this concept upon encountering an African American who could be categorized along a variety of other dimensions (e.g., female, doctor). This early categorization process can have crucial implications for social judgments and behaviors (for a review, see Kunda & Spencer, 2003). Surprisingly enough, however, little is known about how affective processes may influence this early categorization process. Evaluative congruency effects in category accessibility may have profound implications for the category *selection* process, leading for instance people to categorize as “black” *versus* as “doctor” an African-American doctor depending on whether this individual is unattractive and angry-looking *versus* attractive and happy-looking. As a matter of fact, little is known as

well regarding how this category selection process operates (see also, Hugenberg & Bodenhausen, 2004b). Given the practical consequences of social categorization (e.g., Kunda & Spencer, 2003), we hope that future research will examine the implications of the present evaluative-congruency hypothesis for people’s social judgments and behaviors.

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<sup>4</sup> Only male faces were considered in Potter et al. (2007)’s MDS research. Complementary analyses conducted on MDS outputs confirmed that the correlation between face attractiveness ratings and the Euclidean distance of the faces to the centroid of their race cluster was negative, and highly significantly so, in both cases,  $r = -.596$ ,  $p < .006$ , for the foreign faces, and  $r = -.795$ ,  $p < .001$ , for the fellow-citizen faces.

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