Personality and Social Psychology Bulletin

http://psp.sagepub.com/

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On behalf of:

Society for Personality and Social Psychology

The Cognitive Representation of Self-Stereotyping

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Abstract

The present work looks at the self-stereotyping process and reveals its underlying cognitive structure. When this process occurs, it is necessarily the result of an overlap between the representation of the ingroup and that of the self. Two studies measured this overlap and showed that it was higher on stereotype-relevant than on stereotype-irrelevant traits, it involved both positive and negative stereotypical traits, and it implied a deduction-to-the-self process of ingroup stereotypical dimensions. Moreover, the status of one's social group was found to be a key variable in this process, showing that self-stereotyping is limited to low-status group members. Indeed, results of Study 2 showed that the overlap between the self and the ingroup for high-status group members was the result of an induction-to-the-ingroup process of personal characteristics. Implications for research on people's self-construal are discussed.

Keywords

self-stereotyping, self–ingroup overlap, social projection, self-anchoring, ingroup identification

According to self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), the group and the individual are intrinsically connected so that one cannot study people's self-construal independently or separately from their social group. SCT introduced the process of self-stereotyping to study this link and defined it as a form of depersonalization, by which a person perceives himself or herself as an interchangeable exemplar of a social group rather than as a unique individual.

Part of the existing literature has referred to self-stereotyping in terms of self-description (Hogg & Turner, 1987), self-typicality (Simon, Hastedt, & Aufderheide, 1997), and self-evaluation (Pickett, Bonner, & Coleman, 2002), emphasizing that self-construal is highly dependent on the representation of the ingroup. So far, previous research has rarely provided consistent evidence concerning two central aspects of self-stereotyping. First, it has hardly been investigated whether the self and the ingroup are perceived as similar to one another along specific dimensions that are central to the socially shared ingroup stereotype as compared to non-stereotype-relevant dimensions. Second, to our knowledge no research has looked at the directionality of the self-stereotyping process, showing that it is indeed the result of a process in which group traits are used to describe the self compared to self-descriptive traits that are ascribed to the group.[1] The present research aims at tackling both gaps in the literature, revealing the cognitive structure of self-stereotyping.

Group-Relevant Versus Group-Irrelevant Characteristics

Self-stereotyping has often been analyzed using global measures of similarity between the self and the ingroup or general measures of self-categorization (Simon & Hamilton, 1994; Spears, Doosje, & Ellemers, 1997; Verkuyten & Nekuee, 1999). To talk about self-stereotyping and differentiate it from general measures of similarity, however, people should especially attribute ingroup stereotypes to the self, thus increasing self–ingroup similarity specifically along stereotypical traits as compared to stereotype-irrelevant traits. With few exceptions (Biernat, Vescio, & Green, 1996; Ryan & Bogart, 1997, 2001), empirical efforts that differentiated between stereotypical and irrelevant dimensions have failed to disentangle the role of evaluative and descriptive processes. In these studies, self-stereotyping and self-enhancement or ingroup favoritism often co-occurred. Indeed, one may attribute to the self or to the ingroup a given trait either because of its stereotypicality or for its valence (or both); nevertheless,

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only the former should be considered as indicative of a self-stereotyping process. Therefore, the role of stereotypicality and valence should be looked at independently, thus theoretically and methodologically distinguishing the two effects (Judd & Park, 1993; Wittenbrink, Judd, & Park, 1997). In the present set of studies, self-stereotyping is measured in terms of similarity between the self and the ingroup by comparing ingroup stereotypical dimensions with characteristics irrelevant to the ingroup stereotype. Moreover, to clearly differentiate stereotyping from self or ingroup favoritism, we calculate within-subject correlations between the ratings of the self and the ratings of the ingroup and separately along positive and negative characteristics (see also Cadinu, Latrofa, & Carnaghi, 2009; Latrofa, Vaes, Pastore, & Cadinu, 2009).

The Directionality Issue

The debate on the role of the self or of the ingroup as a basis of self-construal has been treated beyond the field of self-stereotyping. The idea that the mental representations of the self and the ingroup are inextricably linked is corroborated by several theoretical and empirical efforts. The optimal distinctiveness theory (Brewer, 1991) argues that the self-concept is characterized by those features that typically distinguish the ingroup from the outgroup. Similarly, the egocentric social categorization model (Simon, 1993) predicts that following an egocentric principle of what is mine and what is not mine, individuals are led to describe themselves mainly along unique ingroup attributes that they have that are not in common with the outgroup. Often, theories that study the similarity between the self and the ingroup presume that either the self or the ingroup stand for the starting point for judging the other level. According to SCT (Turner et al., 1987), the ingroup is used as a source to give form to the self (i.e., I am like my group). In contrast, social projection theory (for a review, see Krueger, 2007) states that the similarity between the self and the ingroup mainly derives from one's self-perception, generalizing self-characteristics to the ingroup as a whole (i.e., my group is like me). Even though this difference could appear subtle, it has recently provoked an interesting debate in the literature on social perception. Focusing on a protocentric approach, Karniol (2003) claimed that the generic representations of prototypical others lie at the origin of social perception; in contrast, the egocentric approach (Krueger, 2003; Mussweiler, 2003; Sedikides, 2003) assumes that the self is the default basis for social representation. Similarly, but focusing on ingroup favoritism in the minimal group paradigm, Cadinu and Rothbart (1996) showed that the self was used as the standard from which group judgments were derived.

Parallel to this theoretical debate, empirical studies investigating the directionality of the self–ingroup connection—even when they adopted similar research paradigms—arrived at opposing conclusions. On one hand, some empirical efforts claimed the supremacy of the ingroup as the basis on which self–ingroup overlapping representations were made (Coats, Smith, Claypool, & Banner, 2000; Smith, Coats, & Walling, 1999; Smith & Henry, 1996). On the other hand, other studies questioned the primary role of the ingroup, showing that their research was more in line with a self-anchoring strategy to explain self–ingroup overlap (Cadinu & De Amicis, 1999; Cadinu & Rothbart, 1996; Otten & Epstude, 2006).

In sharp contrast with this theoretical and empirical debate, the research on self-stereotyping has somewhat blindedly followed the assumption that the attribution of ingroup characteristics to the self, that is, a *deduction-to-the-self process* (e.g., Turner et al., 1987) was responsible for the observed overlap between the self and the ingroup. In the present study, we aim to show that both a deduction-to-the-self process and an *induction-to-the-ingroup* cognitive strategy may contribute to the self–ingroup overlap and that the prevalence of one of these processes depends on the *relative status* of the group to which one belongs.

The Differential Status Hypothesis

The prediction of relative ingroup status as a key variable in explaining the occurrence of either a deduction-to-the-self or an induction-to-the-ingroup cognitive strategy derives from previous research on self-stereotyping. Although using different measures of self-stereotyping, it has been shown that low-status group (LSG) members are more likely than high-status group (HSG) members to ascribe stereotypic characteristics to the self (Cadinu et al., 2009; Latrofa, 2008; Spears et al., 1997). Said otherwise, self-perception tends to be depersonalized mainly for LSG as compared to HSG members (Van Prooijen & van Knippenberg, 2000) when considering natural group contexts (see Simon & Hamilton, 1994, for an exception in artificial LSG and HSG groups). It has also been demonstrated that the low–high status asymmetry in terms of self-stereotyping may occur because the LSG members identify more strongly with their ingroup as compared to HSG members (Pickett et al., 2002, Study 2; Spears et al., 1997). This is also consistent with research showing that category salience (Verkuyten & Nekuee, 1999) or the meaningfulness of a category (Simon et al., 1997) are strong predictors of the occurrence of self-stereotyping.

In the present study, for the first time, we test the hypothesis that self-stereotyping within LSG members is actually a consequence of a deduction-to-the-self cognitive strategy (Study 1). Moreover, we test whether the fact that LSG members identify more with their ingroup makes them self-stereotype significantly more than HSG members (Study 2). Finally, the self–ingroup overlap for HSG members, although expected to be lower, should be the result of an induction-to-the-ingroup cognitive strategy (Study 2).

The Present Research

In the present research differences in group status were determined by using gender groups. In the past, the tendency for both women and men to homogenize the female group (Lorenzi-Cioldi, Eagly, & Stewart, 1995) has been demonstrated and interpreted in terms of men's higher status position (see also Lorenzi-Cioldi, 2006). Moreover, it has been demonstrated that females (more than males) tend to self-stereotype (Cadinu et al., 2009; Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006; Lorenzi-Cioldi, 1991) in similar ways compared to other LSG members (e.g., homosexuals, Cadinu et al., 2009; Southern Italians, Latrofa et al., 2009). Finally, recent research has emphasized that gender differences still exist in contemporary society and mark gender inequality (e.g., Barreto, Ellemers, Cihangir, & Stroebe, 2009; Brescoll & Uhlmann, 2008). In line with this work, in both Studies 1 and 2, women were introduced as the LSG.

The present set of studies aimed at demonstrating that LSG members' ascription of ingroup stereotypes to the self (i.e., self-stereotyping): (a) is marked by a larger overlap of the representation of the self and the ingroup specifically along stereotypical dimensions compared to stereotype-irrelevant dimensions, (b) occurs on both positive and negative stereotypical traits, and (c) results from a deduction-to-the-self process. Converging evidence for these hypotheses is sought in two studies that rely on different paradigms.

In addition, in Study 2 the representational overlap between the self and the ingroup of LSG and HSG members is compared directly. We test whether these groups identify differently with their ingroup and show different levels of self–ingroup overlap as a result. Moreover, it is expected that the larger self–ingroup overlap for LSG members is the result of a deduction-to-the-self process of ingroup stereotypical characteristics; by contrast, the self–ingroup overlap for HSG members is expected to be more likely due to an induction-to-the-ingroup process of self-descriptive features. As such, we investigate the processes of self-stereotyping and self-anchoring in the same experimental design comparing self–ingroup overlapping traits of LSG versus HSG members.

Study 1

In this first study we relied on a longitudinal experimental design that allowed us to determine whether LSG members' self–ingroup similarity is driven by ingroup stereotypical dimensions that become part of one's self-description, consistent with a deduction-to-the-self cognitive process. Specifically, female participants were asked to describe either the self or their gender ingroup (depending on condition) on a set of traits. One month later, the same participants were asked to judge the other target (women in general for those who judged the self at Time 1 and the self for those who

judged women at Time 1) on the same set of traits. This gave us the opportunity to test whether the overlap between self and ingroup judgments would be greater for participants' ratings of the ingroup at Time 1 as compared to participants' ratings of the self at Time 1. The amount of overlap between judgments at Times 1 and 2 is expected to depend on the extent to which the target that is judged at Time 1 gets activated when judgments of the other target are made at Time 2. If LSG members tend to use group characteristics to describe the self rather than the reverse as we expect, the overlap between both judgments should be stronger for participants who judged their ingroup at Time 1, as this judgment will be more likely activated and applied when making self-judgments. The large temporal gap between both moments of measurement allowed us to make sure the instructions of the experiment did not explicitly activate the Time 1 target when judging the alternative target at Time 2.

In addition, if the similarity between the self and the ingroup for LSG members is the result of a self-stereotyping process, this overlap should be stronger along stereotype-relevant characteristics compared to stereotype-irrelevant dimensions and occur for both positive and negative traits.

Method

Participants. Fifty-one female participants in their last year of high school took part in the study. The average age was 18 and ranged from 17 to 19 years.

Questionnaire materials. Participants were asked to judge the self or the ingroup, depending on the experimental condition, along 32 personality traits. They were to rate how typical each trait was for the target using a scale ranging from 1 (*not at all*) to 7 (*very much*). A pretest was conducted to select traits that were female stereotypical, female counterstereotypical, and irrelevant to gender stereotypes. Unlike participants in the experiment who had to give their personal opinion, participants in the pretest were asked to report what they thought society thinks of females as a group in general. The list of the selected adjectives included 16 stereotype-relevant traits, 8 of which were stereotypical of the female group (emotional, caring toward children, affectionate, sensitive to others' needs, moody, changeable, talkative, weak) and 8 of which were counterstereotypical of the female group (powerful, sports lovers, witty, vigorous, rough, authoritarian, coldhearted, insensitive), and 16 gender-irrelevant traits (e.g., punctual, serious). Within each type of trait, half of the traits were desirable to possess (e.g., emotional) and the other half were undesirable (e.g., insensitive).

Procedure. The experiment was divided into two phases, with the second phase following 1 month after the first. Both sections were completed at school during courses. At Time 1, half of the participants rated the self and the other half rated the ingroup (the female group in general) along the list of

personality traits described previously. The reverse was done at Time 2, so that the former half of participants judged the ingroup and the latter half judged the self along the same scale of traits.

Results

To investigate the level of self-stereotyping, in terms of the similarity between self and ingroup descriptions, we calculated within-subject correlations between self ratings and ingroup ratings. We collapsed stereotypical and counterstereotypical traits as stereotype relevant when calculating this index because we expected the same type of correlation between self and ingroup ratings both on stereotypical (the more to the self, the more to the ingroup) and on counterstereotypical traits (the less to the self, the less to the ingroup). As such, we obtained four indices calculating within-subject correlations between self and ingroup ratings separately for stereotype-relevant and stereotype-irrelevant traits, and for positive and negative traits. To normalize distributions, each correlation was Fisher Z transformed before the analysis (see Michela, 1990). After analysis, the Fisher Z correlations are reconverted into r for presentation in the text and in Figure 1. We conducted a 2 (trait relevance: relevant, irrelevant) × 2 (trait valence: positive, negative) × 2 (Time 1 target: self or ingroup) mixed ANOVA.

We found a main effect of trait relevance, $F(1, 49) = 56.23$, $p < .001$, $\eta_p^2 = .53$, indicating, as in previous studies (see Cadinu et al., 2009; Latrofa, 2008; Latrofa et al., 2009), that female participants described themselves as similar to their ingroup especially along stereotype-relevant traits ($M = .69$) compared to stereotype-irrelevant traits ($M = .30$). Importantly and in line with our expectations, the previous effect was qualified by a significant interaction with the target participants judged at Time 1, $F(1, 49) = 8.80$, $p < .01$, $\eta_p^2 = .15$. Consistent with the hypothesis, this interaction showed that the level of self–ingroup similarity along stereotype-relevant traits (self-stereotyping) was especially high for participants that rated the ingroup at Time 1 ($M = .76$) compared to participants that judged the self at Time 1 ($M = .60$), $F(1, 49) = 8.89$, $p < .01$, $\eta_p^2 = .15$. A similar result was not found for the irrelevant traits. For these traits, no difference was found between participants judging the ingroup at Time 1 ($M = .25$) and those judging the self at Time 1 ($M = .35$), $F(1, 49) = 1.25$, *ns* (see Figure 1).

Discussion

According to the definition stated by SCT, we found initial evidence of self-stereotyping as a process through which ingroup stereotypical characteristics become part of the self. Results showed a greater self–ingroup similarity specifically along stereotypical compared to stereotype-irrelevant dimensions. Most importantly, the implementation of an
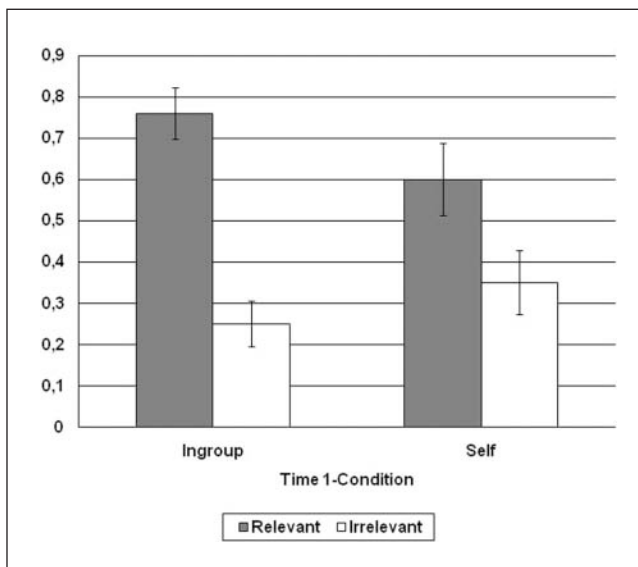

Figure 1. Within-subject correlations between ratings of the self and ratings of the ingroup on stereotype-relevant and stereotype-irrelevant traits as a function of Time 1 condition
Fisher Z correlations are reconverted into *r* for presentation in this figure.

experimental design in which the two phases of judgment were clearly separated in time allowed us to test whether it is the ingroup representation that shapes the self or the self that forms the basis from which the image of the ingroup is derived. As expected, and in line with the deduction-to-the-self hypothesis, overlap between the self and the ingroup on stereotype-relevant traits was clearly higher when ingroup judgments were made at Time 1. In addition, as expected, the absence of a three-way interaction indicated that the increased overlap between the self and the ingroup occurred on both positive and negative stereotypical traits.

These findings provide initial evidence that self-stereotyping is a result of a deduction-to-the-self process. To further investigate the *directionality issue*, we conducted a second study using a different paradigm and a full design including both LSG and HSG members.

Study 2

The goal of Study 2 was to show that LSG and HSG members not only self-stereotype to a different extent but have different cognitive representations of the overlap between the self and the ingroup on stereotype-relevant traits. To address this question comparing the perspective of LSG versus HSG members, we readopted the paradigm used by Smith and Henry (1996). With the aim of showing that the self and the ingroup have overlapping representations, they used an experimental paradigm that consisted of two phases. In the first phase, participants completed a paper-and-pencil

task in which they rated themselves, the ingroup, and the outgroup along a list of generic personality traits on Likert-type scales. In the second phase, participants judged the self again on a computer task along the same list of traits, responding with a *yes* or *no* key. Smith and Henry reasoned that reaction times on a computer task in which participants are asked to decide as fast as possible whether a trait is self-descriptive should be facilitated when these traits also describe the ingroup in a similar way (i.e., traits on which ingroup and self ratings match). Instead, traits that describe the self and ingroup in a different way (i.e., traits on which ingroup and self ratings mismatch) should decrease the ease with which people are able to make self-descriptions. Using their paradigm, Smith and Henry confirmed this hypothesis showing that reaction times to make self-descriptions decreased for matching compared to self–ingroup mismatching traits.

Importantly, Smith and Henry (1996) explained this facilitation effect of self–ingroup matching characteristics on the self-descriptiveness task in terms of a deduction-to-the-self process. Some years later, however, Cadinu and De Amicis (1999) implemented the same research paradigm and criticized Smith and Henry for their supposed evidence of the occurrence of a deduction-to-the-self mechanism. Cadinu and De Amicis slightly changed the original method, adding the ingroup as a target condition in the computer task. Their results replicated those of Smith and Henry, demonstrating that reaction times were facilitated along matching traits compared to mismatching traits. Still, from these findings alone it is impossible to infer whether ingroup characteristics become part of the self or vice versa. At the same time, Cadinu and De Amicis found that participants were generally faster in judging the self compared to the ingroup. This finding may suggest that when considering generic traits not necessarily linked with the stereotype of a certain social group, these traits will be more easily represented at the level of the self compared to that of the ingroup.

Building on the literature reviewed previously and replicating the results of Study 1, the present study aimed to show that self-stereotyping for LSG members can be defined as an overlap between the self and the ingroup especially along ingroup stereotypical dimensions, and that this overlap is the result of a deduction-to-the-self process of ingroup traits. In addition and expanding the findings of Study 1, an HSG was added. The overlap between the self and the ingroup was expected to be smaller for HSG members and should not be the result of a self-stereotyping process. Therefore, we expected that when self and ingroup descriptions match, this overlap should more likely be the result of an induction-to-the-ingroup process of self-traits.

To test these hypotheses, we used Smith and Henry's (1996) paradigm (see also Cadinu & De Amicis, 1999; Otten & Epstude, 2006), adopting the original procedure for the present purpose. First, the low- versus high-status context was introduced focusing on participants' gender: Females

constituted the LSG and males the HSG. Second, both the self and the gender group descriptions were not simply studied along personality traits in general (see Smith & Henry, 1996) but were looked at as a function of previously pretested stereotypical, counterstereotypical, or gender-irrelevant traits. Third, considering self-stereotyping in terms of the overlap between the self and the ingroup, we focused our reaction time analysis on traits that were previously rated by participants as descriptive of both the self and the ingroup in the questionnaire task (i.e., matching traits; Cadinu & De Amicis, 1999). Focusing only on matching traits, evidence for a deduction-to-the-self process is inferred if latencies are faster on the dichotomous ingroup judgments than on self judgments; conversely, evidence for an induction-to-the-ingroup process is inferred if reaction times are faster on self judgments than on ingroup judgments. Indeed, traits that are ascribed to both the self and the ingroup but that clearly show to be more easily (i.e., faster) accessed at one level than the other (self or ingroup) are more likely represented and defined at that level. As such, a matching trait that is ascribed faster to the self compared to the ingroup is more likely represented at that level and attributed to the group as a whole because of a generalization process. Instead, when faster reaction times for matching traits are observed at the group level, these traits are more likely attributed to the self through a deduction-to-the-self process. Following this reasoning that focuses on traits for which the self and the ingroup match and based on our predictions about the phenomenon of self-stereotyping, stronger evidence of the deduction-to-the-self process should be found for women, especially on stereotypical traits; in contrast, stronger evidence for an induction-to-the-ingroup process should be found for men, independently of the traits' stereotypicality.

Moreover and in line with the literature on group status and self-stereotyping, we assessed participants' level of identification with their gender group and predicted that, in comparison to males, females self-stereotype because they identify more strongly with their ingroup.

Method

Participants. Two hundred and four students recruited on the campus of the University of Padova took part in this study, 100 females and 104 males. The average age was 23, ranging from 19 to 37 years.

Procedure. Participants were tested in groups of 2 to 5 but conducted the tasks individually. They were told that the study consisted of several parts, both a paper-and-pencil and a computer task. Participants were informed that the study aimed to investigate how people form impressions about social groups.

First, participants received a questionnaire including in a fixed order: a scale of gender identification; two scales of trait ratings, one judging the typicality of the self and the other judging the typicality of the ingroup along each trait;

and some personal information (age, sexual orientation, profession). Immediately afterward, participants were asked to fill out another questionnaire including several multiple-choice questions about generic issues as a filler task. Finally, participants were asked to perform a computer task in which they were asked to judge again either the self or their gender ingroup (depending on condition). At the end of the computer task participants were fully debriefed.

Stimulus Materials

Questionnaire Task

Ingroup identification. Participants' level of ingroup identification was measured at the very beginning of the questionnaire. Participants expressed their level of agreement on a scale ranging from 1 (*not at all*) to 7 (*very much*) along 19 affirmations, some of which related to the perception of discrimination against their own gender group (e.g., "In general, our society considers women as a group of low worth" and "In general, women are respected in our society" [reverse scored]) and others that pertained to gender identification itself (e.g., "I feel part of the group of women/men" and "Being a woman/man is a central part of my self-image"). A factor analysis with an oblimin rotation resulted in a two-factor solution: One factor included four items of perception of discrimination ($\alpha = .78$) and the second factor comprised 12 items of identification ($\alpha = .91$).[2]

Self ratings. All participants rated the self first. Similar to Study 1, they were asked to describe themselves along 32 personality traits using a scale ranging from 1 (*not at all*) to 9 (*very much*). The list of adjectives slightly changed compared to that used in Study 1. A new pretest to identify traits that were feminine, masculine, and irrelevant to gender stereotypes was conducted. Stereotype-relevant traits were selected so that they were stereotypical for one gender group and at the same time counterstereotypical for the other gender group. Doing so, we selected 16 stereotype-relevant traits, 8 of which were feminine but masculine counterstereotypical (tidy, sensitive, sentimental, delicate; bitter, impressionable, fragile, fearful) and 8 that were masculine but feminine counterstereotypical (vigorous, spontaneous, self-ironical, robust; rough, reckless, mummy's boy, insensitive). The other 16 selected traits were judged as irrelevant in describing females and males (e.g., peaceful, pessimistic). Within each type of trait, half of the traits were socially desirable (e.g., sensitive) and the other half were undesirable (e.g., rough).

Ingroup ratings. Right after the self ratings, participants rated their gender ingroup along the same 32 personality traits. They were asked to assess how much each adjective described the female or male group as a whole on a scale ranging from 1 (*not at all*) to 9 (*very much*).

Filler Task

With the intent to divert participants' attention from the previous trait rating tasks, they were asked to answer 50 multiple-choice questions about general knowledge in geography, nature, history, biology, and politics.

Computer Task

Half of the participants were asked to rate the self again along the same 32 personality traits that appeared in the questionnaire, and the other half were asked to rate their gender ingroup. Each trait appeared in the middle of a computer screen and remained until participants responded. Only two answers were allowed: *yes* (the trait is descriptive) or *no* (it is not descriptive relative to the target). Participants were told to answer as quickly as possible using one of the two keys on the computer keyboard indicating *yes* (left keys) or *no* (right keys). After pressing a key, the screen remained blank for 1500 ms before a new trait appeared. The order in which traits appeared was randomized for each participant.

Results

Self–Ingroup Similarity and Ingroup Status

Gender differences in group status. Consistent with their hypothesized lower status, females reported to perceive more discrimination against the ingroup ($M = 3.94$) than males ($M = 2.73$), $t(202) = 11.25$, $p < .001$. Moreover, as expected and in line with previous research (Pickett et al., 2002, Study 2; Spears et al., 1997), female participants identified with the ingroup ($M = 5.28$) more strongly than males ($M = 4.96$), $t(202) = 2.79$, $p < .01$.

Differences in self-stereotyping. In line with Study 1, we first investigated the level of self-stereotyping, calculating within-subject correlations between self and ingroup ratings separately for stereotype-relevant and stereotype-irrelevant traits, and for both positive and negative traits. We conducted a 2 (gender: female or male) × 2 (trait relevance: relevant, irrelevant) × 2 (trait valence: positive, negative)[3] mixed ANOVA on the Fisher *Z*-transformed correlations (Michela, 1990). For ease of interpretation, the Fisher *Z* correlations are reconverted into *r* when means are presented. We found a main effect of participants' gender, $F(1, 197) = 25.37$, $p < .001$, $\eta_p^2 = .11$, indicating that female participants showed stronger correlations between self and ingroup than males. Importantly, the previous effect was qualified by a significant interaction with trait relevance, $F(1, 197) = 6.59$, $p < .05$, $\eta_p^2 = .03$. Consistent with Study 1, this interaction showed that female participants described themselves similar to their ingroup especially along stereotype-relevant traits ($M = .48$) compared to irrelevant traits ($M = .34$), $F(1, 197) = 8.59$, $p < .001$, $\eta_p^2 = .04$. On the contrary, males generally showed a lower similarity between the self and the ingroup both on relevant ($M = .18$) and irrelevant ($M = .22$) traits, which did not differ from each other, $F(1, 197) = 0.46$, *ns*. This interaction clearly replicated that self-stereotyping is a process occurring for women ($M = .48$), being in an LSG, and not for men ($M = .18$), being in an HSG, $F(1, 197) = 29.33$, $p < .001$, $\eta_p^2 = .13$ (see also Cadinu et al., 2009; Simon et al., 1997; Spears et al.,1997).

The mediating role of ingroup identification. Previous research has shown that low status leads to higher levels of ingroup identification and that this increased ingroup identification in turn is associated with a stronger tendency to ascribe stereotypical ingroup characteristics to the self (Cadinu et al., 2009; Pickett et al., 2002; Spears at al., 1997). Therefore, we test the hypothesis that ingroup identification is a mediator of the relation between group status and self-stereotyping. To test for the mediational role of identification on self-stereotyping, we conducted three multiple regressions as indicated by the joint significance test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). In the first model, an effect of group status (coded $-1 = HSG$, $1 = LSG$) on self-stereotyping was demonstrated ($\beta = .42$; $p < .001$). In the second model, an effect of group status on identification (standardized values) was found ($\beta = .19$; $p < .01$). Finally, in the third model, an effect of identification on self-stereotyping was demonstrated, after controlling for the effect of group status ($\beta = .24$; $p < .001$). Thus, the joint significance test of the last two effects supports the hypothesis that identification is a mediator of the effect of group status on self-stereotyping. This result is further supported by the Sobel test, which directly tests the significance of the indirect effect of group status on self-stereotyping through ingroup identification ($Z = 2.25$; $p = .02$).

Differential Representation of the Self–Ingroup Overlap

In line with previous work using the same experimental paradigm (e.g., Smith & Henry, 1996), we coded questionnaire ratings for the self and the ingroup as follows: responses ranging from 1 to 4 were codified as *no* and responses ranging from 5 to 9 were codified as *yes*.[4] This procedure allowed us to create four possible combinations relative to the overlap between the self and ingroup ratings: (a) *matchYY* (yes to the self and yes to the ingroup), (b) *matchNN* (no to the self and no to the ingroup), (c) *mismatchYN* (yes to the self and no to the ingroup), and (d) *mismatchNY* (no to the self and yes to the ingroup). Table 1 shows the percentage of observations obtained for each of the four combinations separately for female and male participants.

To analyze the response time data as a function of the overlap between the self and the ingroup, we eliminated responses faster than 300 ms and slower than 5,000 ms, as recommended by Ratcliff (1993). In addition, all within-subject errors were eliminated from the reaction time analysis, which were defined as the discrepancies between responses given in the questionnaire (e.g., *yes* rating, on a trait when judging the self) and those given in the computer task (e.g., *no* button, to the same trait when judging the self). The remaining reaction times were log-transformed to normalize the reaction time distribution (Fazio, 1990). For ease of interpretation, however, raw means are reported.[5]

The Basic Representation of the Self–Ingroup Overlap

To test whether the overlap between the self and the ingroup is the result of a deduction-to-the-self process or an

Table 1. Percentage of Observations for Each Kind of Self–Ingroup Overlap

Gender	Self–ingroup overlap			
	MatchYY	MatchNN	MismatchYN	MismatchNY
Female	43%	24%	12%	21%
Male	39%	21%	17%	23%

MatchYY = yes to the self and yes to the ingroup; MatchNN = no to the self and no to the ingroup; MismatchYN = yes to the self and no to the ingroup; MismatchNY = no to the self and yes to the ingroup.

induction-to-the-ingroup process, we analyzed reaction times relative to traits for which participants indicated *yes* for both their self and their ingroup description on the questionnaire (i.e., matchYY).[6] When focusing exclusively on matchYY traits, evidence for a deduction-to-the-self process was inferred if participants' latencies were faster on ingroup judgments than on self judgments; conversely, evidence for an induction-to-the-ingroup process was inferred if reaction times were faster on self judgments than on ingroup judgments.

We conducted a mixed model analysis including gender (female or male), computer target (self or ingroup), and trait stereotypicality (feminine, masculine, irrelevant), where the first two variables are between-subject variables and the last is a within-subject variable. A significant interaction emerged between gender and target, $F(1, 559) = 9.53$, $p < .005$, $d = .26$, showing that females tended to be faster judging the ingroup ($M = 1,153$ ms) than the self ($M = 1,205$ ms), $F(1, 559) = 1.95$, $p = .16$, $d = .12$; in contrast, males responded faster for the self ($M = 1,158$ ms) than for the ingroup ($M = 1,288$ ms), $F(1, 559) = 8.67$, $p < .005$, $d = .25$. Moreover, gender interacted with trait stereotypicality, $F(2, 559) = 11.36$, $p < .001$, $d = .28$, indicating that females, independent of the target they were judging, were faster in saying *yes* to feminine traits ($M = 1,045$ ms) compared to both masculine ($M = 1,330$ ms) and irrelevant ($M = 1,173$ ms) traits, $F(2, 559) = 10.27$, $p < .001$, $d = .27$. In a similar vein, males tended to show the shortest latencies for masculine traits ($M = 1,145$ ms), although this response was not significantly different from both feminine ($M = 1,299$ ms) and irrelevant ($M = 1,236$ ms) traits, $F(2, 559) = 2.68$, *ns*. Finally and as expected, a three-way interaction was found among gender, trait stereotypicality, and target,[7] $F(2, 559) = 5.67$, $p < .005$, $d = .20$. To get a better understanding of this three-way interaction, we conducted the analysis including target and trait stereotypicality separately for female and male participants. As expected, besides a main effect of trait stereotypicality, $F(2, 285) = 10.28$, $p < .001$, $d = .38$, female participants showed a significant two-way interaction between target and trait stereotypicality, $F(2, 285) = 5.60$, $p < .005$, $d = .28$ (see Figure 2).

Consistent with our hypothesis on the nature of self-stereotyping, females were significantly faster in judging stereotypical-feminine traits at the level of the ingroup
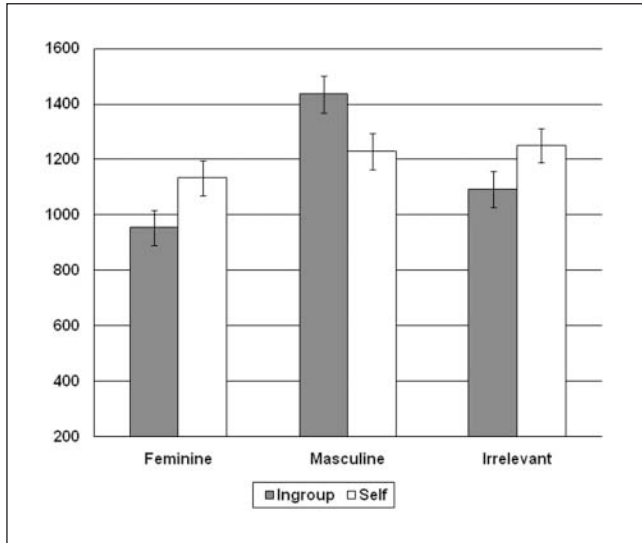
Figure 2. Female participants' reaction times for self–ingroup overlapping traits as a function of target and trait type

(M = 954 ms) as compared to the level of the self (M = 1,134 ms), $F(1, 285)$ = 6.82, p = .01, d = .31. Interestingly, females showed a similar pattern along the irrelevant traits, although this difference was only marginally significant when judging the ingroup and the self (Ms = 1,093 and 1,251 ms, respectively), $F(1, 285)$ = 3.19, p = .08, d = .21. Finally, females showed a reverse pattern along the counterstereotypical-masculine traits, on which they tended to be faster at the level of the self (M = 1,229 ms) than at the level of the ingroup (M = 1,436 ms), $F(1, 285)$ = 3.50, p = .06, d = .22.

In contrast and consistent with our expectation, the preceding interaction between target and trait stereotypicality did not emerge for male participants, $F(2, 274)$ = 1.08, *ns*. In fact, analyses of male participants' latencies showed only a main effect of target $F(1, 274)$ = 8.66, p < .005, d = .36. This effect indicates that regardless of the trait stereotypicality, men were always faster judging the self (M = 1,158 ms) than the ingroup (M = 1,289 ms). This finding suggests that the overlap between self and ingroup traits for males is the result of self-descriptive traits that are generalized to the ingroup as a whole.

Discussion

Consistent with previous work showing that self-stereotyping occurs for LSG members but not for HSG members (e.g., Cadinu et al., 2009; Van Prooijen & van Knippenberg, 2000), the present study aimed at demonstrating that this distinction is due to differences in the cognitive representations of the self and the ingroup. Building on the literature that investigated the interplay between the mental representations of the self and the ingroup (Cadinu & De Amicis, 1999; Otten & Epstude, 2006; Smith & Henry, 1996), the

present experimental paradigm allowed us to gain insight into differences between the overlap of self and ingroup representations held by women and men as a differential status group.

The data replicated that only females tended to apply gender stereotypes to describe the self. In line with results of Study 1, whereas male participants showed a slower similarity between self and ingroup on both stereotype-relevant and stereotype-irrelevant traits, females showed a higher self–ingroup similarity on stereotype-relevant than on stereotype-irrelevant characteristics. In other words, we demonstrated that self-stereotyping by LSG members can be defined as a larger overlap between the self and the ingroup especially along ingroup stereotypical dimensions; in contrast, consistent with the absence of self-stereotyping by HSG members, their self–ingroup overlap was smaller than the overlap by LSG members and undifferentiated for stereotype-relevant and stereotype-irrelevant traits. In addition, self-stereotyping occurred on both positive and negative stereotypes. This latter finding is interesting because it shows that it is indeed the stereotypicality of a trait, rather than its valence, that motivates women to attribute it to both the self and the ingroup. Finally, ingroup identification mediated the relation between status differences and self-stereotyping, suggesting that LSG members self-stereotype more than HSG members because they identify more with their ingroup.

Most importantly, in the present study we addressed the directionality issue of the self–ingroup overlap. As predicted, females showed faster reaction times judging the ingroup than the self, specifically along ingroup stereotypical traits. Faster latencies on the ingroup target indicate that stereotypical information is mainly represented at the group level rather than at the level of the self. As such, this pattern supports our hypothesis that for LSG members, the self–ingroup overlap is the result of a deduction-to-the-self process of ingroup stereotypical information. In other words, females tend to self-stereotype in the true sense of the word, that is, describe the self in terms of group stereotypes rather than vice versa. In contrast, looking at matching counterstereotypical traits, females have a tendency to make self judgments faster than ingroup judgments. This result makes sense if one thinks that these traits are anything but stereotypical of one's own group and therefore hardly represented at the ingroup level. As a consequence, when looking only at the reaction times of traits that were attributed to both the self and the ingroup, it is logical to expect that these traits are anchored at the level of the self and generalized to the group as a whole. Finally, reaction time analysis along stereotype-irrelevant traits showed that reaction times tended to be facilitated at the ingroup level rather than at the self level, a similar pattern to the one found for stereotypical traits. This tendency may be understandable knowing that these traits were pretested as irrelevant for the gender stereotype but at the same time attributed to both the self and the ingroup by participants.

As a result, these traits are likely seen as similar to stereo-types by participants and represented in a similar way.

For male participants, only a self-facilitation effect was found, independent from the trait's stereotypicality. This result suggests, as expected, that the self–ingroup overlap for majority group members is the result of an induction-to-the-ingroup process of self-descriptive traits regardless of the type of trait.

General Discussion

Altogether, the present findings allow us to infer that LSG members, consistent with the high salience of their group membership (Hogg & Turner, 1987) and their tendency to identify more with their own group, more easily engage in a process of self-stereotyping (social identity theory [SIT]; Tajfel & Turner, 1979; SCT, Turner et al., 1987) through which they build part of their self-image on the basis of the ingroup representation. In two studies, female participants showed a markedly larger overlap between the representa-tion of the self and that of the ingroup along stereotypical dimensions compared to stereotype-irrelevant characteris-tics, and this occurred on both positive and negative traits. Moreover, we found data supporting the hypothesis that self-stereotyping is the result of a deduction-to-the-self cognitive process of ingroup stereotypical attributes. Although adopt-ing different research paradigms, in both cases we found evi-dence that LSG members are likely to deduce information from the ingroup to the self on ingroup stereotypical traits.

It is important to note that defining self-stereotyping in terms of a similar attribution of both positive and negative stereotypical characteristics to the self and to the ingroup allowed us to reconceptualize the self-stereotyping process. We found evidence that LSG members self-stereotype not only by ascribing to themselves positive stereotypical fea-tures of the ingroup, but to the same extent they also inter-nalized negative stereotypical characteristics. Different from SIT (Tajfel & Turner, 1979) and SCT (Turner et al., 1987), we argue that this phenomenon occurs not only because of individuals' motivation to maintain a positive self-image. Indeed, evidence for self-stereotyping is mainly found for LSG members, such as females. These groups are often the victim of a social stigma, which is, by definition, a negative instance. Prior research has shown that disadvan-taged group members who are aware of the discrimination and engage in self-stereotyping also report feeling better and showing incremental improvements in personal well-being (Latrofa et al., 2009). Importantly, well-being increased independently of whether self-stereotyping involved positive or negative stereotypical traits. This finding, together with previous research (e.g., Mlicki & Ellemers, 1996), suggests that self-stereotyping could affirm one's social identity in all of its facets instead of just maintaining a positive self-image. Moreover, the present data propose that the process

of self-stereotyping should be differentiated from the phe-nomenon of ingroup bias.

Even though in the present studies only women consti-tuted the LSG, we interpret their reactions as the result of social status differences (e.g., Lorenzi-Cioldi, 1991, 2006) rather than of specific gender differences (e.g., Guimond et al., 2006). The assumption to look at gender differences in terms of social status differences is consistent with a theoreti-cal analysis proposed by Lorenzi-Cioldi (2006). Instead of differentiating between personal and social identity along a continuum, so that an increase of one extremity decreases the other, as pointed out by SIT (Tajfel & Turner, 1979), Lorenzi-Cioldi argued that personal identity may be dependent as much on one's group membership as on one's social identity. Whereas HSG membership tends to stress personal aspects of the self-concept, LSG membership may emphasize collective aspects of the self-image. Moreover, Lorenzi-Cioldi argues that considering gender differences in terms of status differ-ences predicts that men will be motivated to enhance their personal identity to emphasize their personal tribute to the high status of their group whereas women might enhance their social identity to defend themselves from the threat against their LSG (Rubin, Hewstone, Crisp, Voci, & Richards, 2004). Consistent with the theoretical perspective by Lorenzi-Cioldi, the present research demonstrated that male partici-pants displayed a smaller overlap between their representation of the self and that of the ingroup compared to the female participants. More interestingly, male participants showed a general tendency to project self characteristics to the ingroup, consistent with the hypothesized induction-to-the-ingroup cognitive process, so that an overlap between the self and the ingroup representations can be considered the result of an egocentric cognitive strategy for HSG members (Cadinu & Rothbart, 1996; Krueger, 2003). The overlap between the self and the ingroup for LSG members, instead, derives from a group-based cognitive strategy that deduces ingroup charac-teristics to construe one's self-image.

This finding is important because it sheds light on social status and the resulting increase in ingroup identification as a key aspect in dealing with the long-standing controversy on the causal mechanism that underlies the elaboration of infor-mation linking the self to the ingroup (self-anchoring, Cadinu & Rothbart, 1996; social projection, e.g., Krueger, 2007) or, conversely, the ingroup to the self (self-stereotyping, Turner et al., 1987). Recently, Krueger (2007), proposing social pro-jection as the default process, talked about self-stereotyping as a process that can occur if four simultaneous conditions are met: high salience of the social category, high level of members' identification with the ingroup, perceived threat at the individual level, and positive valence of the attributes considered. It seems that three of these criteria were met in our studies: The female category was highly salient, female participants reported high levels of ingroup identification, and they reported perceived discrimination against their

ingroup. In contrast, our female participants showed a self representation that matched with the ingroup representation not only on positive but also on negative stereotypical attributes. Therefore, the present study adds to the conceptualization of Krueger by suggesting that for LSGs, the ingroup identity serves to maintain an important membership beyond the valence of the traits as shown by self-enhancement and ingroup favoritism. Following this reasoning, social status appears to be central in explaining the occurrence of a more deductive or inductive cognitive strategy in making social inferences. Assuming that the status of the social group one belongs to influences the cognitive strategy used most frequently, it becomes important in future research to investigate whether this variable influences several other social inferences, as in the way people report or deduce emotional aspects (Robinson & Clore, 2002), or in the cooperative or competitive response people induce or deduce in a social dilemma (Krueger, 2007).

Although our work focused on social status groups differences, we hypothesize that the same findings can be applied to other minority groups in general. Indeed, according to social categorization theory, membership salience and increased ingroup identification emerge not only as a result of low status (Simon & Hamilton, 1994) but also as a result of other contextual factors (Haslam, Oakes, Turner, & McGarty, 1995) as numerical inferiority (Simon & Brown, 1987). This idea is consistent with a meta-analysis conducted by Mullen (1991), in which the author argued that because of the size of the minority, their membership will be highly salient, which in turn will motivate minority members to pay greater attention to the ingroup, resulting in a tendency to perceive other ingroup members and the self as highly prototypical. In contrast, the membership of the numerically larger majority will be less salient. As a consequence, majorities will pay less attention to the ingroup and, hence, will be more likely to form exemplar rather than prototype representations of other ingroup members and of the self (see also Mullen, Brown, & Smith, 1992). This analysis is consistent with a great amount of experimental evidence showing that self-stereotyping occurs across several minority contexts (Cadinu et al., 2009; Guimond et al., 2006; Hogg & Turner, 1987; Latrofa et al., 2009; Simon et al., 1997; Simon & Hamilton, 1994; Spears et al., 1997). Specifically, Cadinu et al. (2009), adopting the same self–ingroup similarity index as we did, assessed self-stereotyping across three different minority groups, regardless of whether the minority was numerical (Ladinos, ethnolinguistic minority in the north of Italy), based on social status (females), or both (homosexuals). These authors concluded more generally that self-stereotyping is a process occurring whenever a social group is characterized by a disadvantaged social condition.

All in all, the present article proposes an important step in understanding the process of self-stereotyping, defining it as an overlap between the representation of the self and that of the ingroup on both positive and negative stereotype-relevant traits. Moreover, for the first time empirical data showed that self-stereotyping is a process in which only LSG members engage because they identify more with their ingroup and because only their self–ingroup overlap is the result of a deduction-to-the-self process of ingroup stereotypical traits.

Notes

1. Recently, Otten and Epstude (2006) investigated the directionality issue of the self–ingroup overlap, focusing on ambiguous traits, so-called ill-defined characteristics. On those traits, the authors found evidence for a self-anchoring process but no evidence for self-stereotyping.

2. Three of the initial 19 items did not load on any of the two factors; therefore, they were discarded from further analyses.

3. Trait valence interacted both with participant's gender, $F(1, 197) = 4.56$, $p < .05$, $\eta_p^2 = .02$, and with trait relevance, $F(1, 197) = 5.15$, $p < .05$, $\eta_p^2 = .03$. However, as in Study 1, the three-way interaction among gender, trait relevance, and trait valence did not emerge.

4. We divided responses into *yes* and *no* considering that the midpoint 5 in the scale coincided with the median along all questionnaire ratings. Using the median split allowed us to obtain a balanced number of *yes* (59%) and *no* responses (41%; see Cadinu & De Amicis, 1999, for a similar procedure).

5. In a first step, we investigated whether our data confirmed the facilitation effect on matching traits compared to mismatching traits (e.g., Smith & Henry, 1996). As expected and in line with previous work, participants, independently of whether they were judging the self or the ingroup in the computer task, were always faster on traits for which the self and the ingroup description matched compared to traits that were attributed only to the self or to the ingroup, $F(1, 755) = 17.30$, $p < .05$, $d = .30$.

6. Even though the matchNN (no to the self and no to the ingroup) traits are included in the self-stereotyping index, they are hard to compare with the matchYY (yes to the self and yes to the ingroup) traits on a representational measure using principles of concept activation, as the one that is used in this study. Following Gilbert (1991), the rejection of an idea (as well as the negation of possessing a trait in our experiment) requires a more effortful and controlled mental process than its acceptance. Following this argument, we considered the processing of matchNN traits during the computer task as qualitatively different from that of the matchYY traits.

7. Given our specific interest in the self-stereotyping process, we focused only on matching traits that were both attributed to the self and to the ingroup (matchYY). Still, it is important to show that the other types of traits do not show a similar effect. To verify this possibility, we conducted a mixed model analysis including gender (female or male), computer target (self or ingroup), trait stereotypicality (feminine, masculine, or irrelevant), and trait overlap (matchYY, matchNN, or mismatch). The four-way interaction was marginally significant, $F(4, 1549) = 2.02$, $p = .09$, $d = .07$. Conducting separate analyses for matchYY, matchNN, and mismatch, the essential three-way interaction among gender, computer target, and trait stereotypicality did not emerge either for the matchNN's traits, $F(2, 423) = 0.45$, *ns*, or for the mismatching traits, $F(2, 567) = 0.72$, *ns*, but only for the matchYY's traits as reported in the text.

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