

# How we think they see us? Valence and difficulty of retrieval as moderators of the effect of meta-stereotype activation on intergroup orientations

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Previous research indicates that meta-stereotypes are predominantly negative. However, the valence of the meta-stereotypes may not be the only factor accounting for the detrimental effects associated with their activation. In addition to valence, we propose that the subjective difficulty of retrieving the meta-stereotype might critically determine whether its activation deteriorates intergroup orientations. An experimental study showed that the effect of the meta-stereotype activation on the desire to interact with outgroup members was moderated by the interaction between the valence of the meta-stereotype and its difficulty of retrieval. In particular, the activation of a positive meta-stereotype deteriorated intergroup orientations when the difficulty of retrieval was high as compared with a condition in which the difficulty of retrieval was low. In sharp contrast, the activation of a negative meta-stereotype worsened intergroup orientations when the difficulty of retrieval was low as compared with a condition in which the difficulty of retrieval was high.

**Keywords:** Meta-stereotypes; Difficulty of retrieval; Intergroup bias; Intergroup contact.

People's beliefs regarding the stereotype that outgroup members hold about the ingroup (i.e., meta-stereotypes) have important implications for intergroup orientations. The research to date highlights the adverse consequences of the activation of meta-stereotypes on intergroup orientations (Finchilescu, 2010; Owuamalam, Tarrant, Farrow, & Zagefka, 2013; Vorauer, Main, & O'Connell, 1998; Yzerbyt, Muller, & Judd, 2009). Such negative effects are likely due, at least in part, to the assumption that outgroup members have a negative image of the ingroup (e.g., Kramer & Messick, 1998; Kramer & Wei, 1999). Even though previous work has identified positive traits in meta-stereotypes regarding different groups, meta-stereotypes are generally seen as predominantly negative (Vorauer et al., 1998). Still, the negative content of the meta-stereotypes may not be the only

factor accounting for the harmful consequences associated with their activation. In addition to valence, other aspects of the meta-stereotype activation can be influential, such as the subjective ease or difficulty of retrieving the meta-stereotype. In the present research, we propose that the ease or difficulty with which meta-stereotypes are brought to mind moderates their valence, resulting in possible counterintuitive effects on intergroup orientations.

The preponderance of evidence in the literature demonstrates that meta-stereotype activation has a negative impact on intergroup relations (for a review, see Frey & Tropp, 2006). Meta-stereotype activation has been associated with increased intergroup anxiety (Finchilescu, 2010), legitimization of violence and aggression towards the outgroup (Kamans, Gordijn, Oldenhuis, & Otten, 2009), negative feelings about

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intergroup interaction (Gordijn, Finchilescu, Brix, Wijnants, & Koomen, 2008; Vorauer et al., 1998) and negative attitudes and less favourable evaluations of outgroup members (Owuamalam et al., 2013). To be sure, the detrimental consequences of meta-stereotype activation reported in the literature might be exaggerated to some extent due to the preference of researchers for studying turbulent intergroup contexts. Most studies about meta-stereotypes involve groups that differ in status but also intergroup relations involving competitiveness, conflict and discrimination, such as between White and Black Americans (Judd, Park, Yzerbyt, Gordijn, & Muller, 2005), White and Indian Canadians (Vorauer et al., 1998) and Black and White South Africans (Finchilescu, 2010; Gordijn et al., 2008).

In the context of historically conflicting intergroup relations, it is hardly surprising to find that beliefs about how the outgroup sees ingroup members are mostly negative, or at least, more negative than the image that ingroup members have about themselves (e.g., Vorauer et al., 1998). However, in other intergroup contexts, where conflicts are not as severe, meta-stereotypes may embrace positive beliefs as well as negative ones (e.g., Finkelstein, Ryan, & King, 2013). Thus, relatively peaceful intergroup contexts may constitute a much more suitable testing ground if one wishes to study the way the valence of meta-stereotypes influences intergroup relations. Indeed, the valence of the meta-stereotype has been successfully manipulated in the realm of gender relations (Owuamalam & Zagefka, 2011), with undergraduates from different universities (Owuamalam et al., 2013) and among managers and assistants (Owuamalam et al., 2013). For instance, Owuamalam and Zagefka (2011) asked participants to think about and list either negative or positive impressions that men hold about women. Those women who activated negative meta-stereotypes (listed negative impressions) reported lower levels of identification with their gender group than those who activated positive meta-stereotypes.

The available research highlights the importance of the valence of meta-stereotypes in determining reactions towards outgroup members. Indeed, the valence of meta-stereotypes may be even more predictive of feelings about intergroup interactions than their specific content (Gordijn, 2002; Gordijn et al., 2008). However, the role of valence may depend on a variety of moderating factors. Schwarz (2004) has argued that the informational value in judgements and decisions is determined not only by the valence of the information but is also critically influenced by people's subjective experiences when they retrieve, access and process this information.

A significant number of studies indicate that the impact of the recalled content may be qualified by the degree of difficulty with which such content can be brought to mind (Schwarz, 2004). In general, information that is more easily retrieved is perceived as more accurate, diagnostic

and valid, whereas the credibility of information that is difficult to retrieve is more readily questioned (see Schwarz, 2004, for a review).

This phenomenon has been shown by varying the number of instances that people had to retrieve from memory. When participants are asked to describe a relatively large number of examples of a given characteristic, compared to a relatively small number (8 vs. 3 in Dijksterhuis, Macrae, & Haddock, 1999; 12 vs. 6 in Schwarz et al., 1991; 8 vs. 2 in Tormala, Petty, & Briñol, 2002; 6 vs. 2 in Weick & Guinote, 2008), the subjective difficulty is likely to be greater. As a consequence, people are less likely to see the characteristic as relevant or applicable in the context of the difficult task. For example, when asked to list a high number of instances of their unassertiveness (Schwarz et al., 1991), participants saw themselves as more assertive than when they had to list fewer instances.

These rather counterintuitive results emerged because "the difficulty experienced in recalling these examples would suggest that they cannot be frequent and typical" (Schwarz et al., 1991, p. 196). That is, individuals not only take into account the content or valence of what they recall but also use their ease or difficulty of retrieval as a relevant source of information in making judgements. The difficulty in recall seems to decrease judgements of frequencies and, as a consequence, people may conclude that they are not as assertive as the recalled behaviour or exemplars would seem to imply (Schwarz et al., 1991). Of course, the emergence of this effect depends on the perceived diagnosticity of the feeling of ease or difficulty. If people can discredit the informational value of ease of retrieval, this factor would have no impact on their judgements. For instance, in Schwarz et al. (1991) ease of retrieval did not affect judgements when participants attributed their subjective experience to an external source, rendering it non-diagnostic.

Besides this explanation based on the availability heuristic (Tversky & Kahneman, 1973), more recent work has identified additional mechanisms by which ease of retrieval effects might operate. For instance, Tormala et al. (2002) found that thought confidence mediates the effect of the ease manipulation on attitudes towards a policy. Thus, people are more confident in the validity of their thoughts when it is easy to generate them than when it is difficult. Importantly, judgements that are made on the basis of ease or difficulty of retrieval are stored in memory and, therefore, affect judgements at later points in time (Weick & Guinote, 2008).

The combination of accessible content and accessibility experience shapes people's naive theories about a broad range of phenomena (Schwarz, Sanna, Skurnik, & Yoon, 2007), and these naive theories critically affect intergroup perceptions, expectations, orientations and, ultimately, relations (Levy, Chiu, & Hong, 2006). However, few studies combine a social cognitive approach with intergroup relations (for exceptions see Dijksterhuis

et al., 1999; Weick & Guinote, 2008). To the best of our knowledge, no research has yet examined whether the difficulty with which meta-stereotypes can be brought to mind moderates their impact on intergroup orientations. We propose that the difficulty experienced in activating meta-stereotypes interacts with their valence, leading to paradoxical effects on intergroup orientations when the activation of meta-stereotypes is experienced as difficult.

We tested the novel hypothesis that people rely on their meta-cognitive experiences not only to make judgements about their personal characteristics (e.g. Schwarz et al., 1991) or attitudes (e.g. Tormala et al., 2002) but also to estimate the beliefs that others are perceived to hold about them – in this case, meta-stereotypes about what outgroup members believe about the ingroup. Specifically, we hypothesised that substantial difficulty of retrieval would lead individuals who are asked to retrieve only negative traits to conclude that the meta-stereotype is not as negative as the recalled traits would seem to denote. Similarly, those who have a hard time retrieving only positive traits may well infer that the meta-stereotype is not as positive as the recalled traits would imply. As a consequence, when meta-stereotype activation is experienced as difficult, those individuals who are asked to exclusively think of positive meta-stereotypical traits would react more negatively towards outgroup members than participants who retrieve only negative traits. In contrast, a low difficulty of retrieval would not make people question the credibility of the recalled information. Thus, when the meta-stereotype activation is experienced as an easy task, those individuals who only retrieve negative meta-stereotypical traits would react more negatively towards outgroup members than participants who think of positive traits. In sum, a positive meta-stereotype should stimulate more negative intergroup orientations when the difficulty of retrieval is high than when it is low. Conversely, a negative meta-stereotype would engender more negative intergroup orientations when the difficulty of retrieval is low than when it is high.

To test this hypothesis, we conducted an experiment in a context in which relations are perceived to be positive, the European Union. Spain was the ingroup and other European countries of lower status were the outgroup. Whereas, as we noted, previous research has mainly examined the (negative) consequences of activating meta-stereotypes in the context of historically negative intergroup relations, the present research is developed in a context wherein participants may think of both positive and negative characteristics. This intergroup context allows, therefore, to manipulate the valence of and the difficulty of retrieving meta-stereotypes in a credible way, while the difference in status remains as in most works about this topic (e.g., Gordijn et al., 2008; Kamans et al., 2009; Owuamalam et al., 2013; Vorauer et al., 1998).

To investigate whether the effect of meta-stereotype activation on intergroup orientations is a function of both

the valence of the meta-stereotype and the difficulty of retrieval, we used a 2 (Valence: positive vs. negative)  $\times$  2 (Difficulty: low vs. high) factorial design with an additional control condition. Intergroup orientations were assessed by means of two outcome variables: (a) evaluations of the outgroup (both directly and relative to evaluations of the ingroup) and (b) the desire to interact with outgroup members. The desire for intergroup contact, which is inhibited when people have more negative evaluations of the other group, is an important outcome because of the substantial evidence that positive contact subsequently reduces prejudice (see the meta-analysis of Pettigrew & Tropp, 2006) and can have cascading positive influences among members of the ingroup who become aware of such interactions (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

We expected that participants in the negative valence condition would show more negative evaluations of the outgroup and a lower desire to interact with outgroup members in the low than in the high difficulty of retrieval condition. Conversely, we anticipated that participants in the positive valence condition would display more negative evaluations of the outgroup and a lower desire to interact with outgroup members in the high than in the low difficulty of retrieval condition. No difference was expected between participants in the negative valence/high difficulty condition as compared with participants in the positive valence/low difficulty condition, and between participants in the negative valence/low difficulty condition as compared with participants in the positive valence/high difficulty condition.

We also expected that our manipulations should affect intergroup bias (outgroup evaluations in relation to ingroup evaluations) via a more negative outgroup evaluation exclusively. That is, the evaluation of ingroup members should be similar across conditions. Based on the well-established association between attitudes and behavioural intentions (Ajzen & Fishbein, 1972), we further predicted that a more negative outgroup evaluation would mediate the effect of the interaction of valence and difficulty of retrieval on the desire for contact, whereas ingroup evaluation would not mediate this effect.

## METHOD

### Participants

Two hundred and nineteen undergraduate students (180 women, mean age = 31.07, *SD* = 9.70) from UNED, a distance-learning university, completed the questionnaire online. Participants were randomly assigned to one of the four experimental conditions corresponding to the Valence  $\times$  Difficulty design or to the control condition.

## Procedure

Participants were recruited for a study about how Spaniards see other groups. All participants were presented with a list of the other 26 countries in the European Union at that time and were asked to choose the country they considered as having the lowest status as compared to Spain. Participants in the *control condition* directly proceeded to the rest of the questionnaire. We manipulated the difficulty of retrieval of meta-stereotypes using the procedure of Schwarz et al. (1991). Based on pretesting, participants in the *high difficulty condition* were asked to list seven traits that they thought the outgroup attributed to the ingroup, whereas those in the *low difficulty condition* were asked to list three traits. Representing the two levels of our valence manipulation, participants in the *positive valence condition* were asked to think about and list only positive traits, whereas those in the *negative valence condition* were asked to think about and list only negative traits.

We checked for the effectiveness of the valence manipulation right after participants listed the meta-stereotypic traits. Specifically, participants were asked to rate each trait they had listed on a 7-point scale ranging from  $-3$  (“completely negative”) to  $+3$  (“completely positive”). The overall valence was calculated as the average of the three or seven items listed by participants in the low difficulty,  $\alpha = .84$ , and high difficulty conditions,  $\alpha = .92$ , respectively. To assess whether the manipulation of difficulty had the intended effect, we asked participants to rate, on scales ranging from 0 (“a lot”) to 9 (“very little”), the difficulty of the task, the time required to complete the task and the effort invested in order to complete the task,  $\alpha = .94$ . Finally, participants proceeded to the rest of the questionnaire.

To measure *evaluations of the ingroup and the outgroup*, participants rated each group separately using three bipolar thermometers, “Negative–Positive,” “Dislike–Like” and “Cold–Hot,” adapted from Haddock, Zanna, and Esses (1993), ranging from 1 to 9  $\alpha$ 's  $> .87$ .

*Desire to interact with outgroup members* was evaluated by a 7-point scale ranging from 0 (“strongly disagree”) to 6 (“strongly agree”) on three items: “I would like to have more friends from this country,” “I would like to work/study with people from this country” and “I would like to visit that country if it means meeting people from there,”  $\alpha = .80$ .

## RESULTS

### Preliminary analyses

We conducted a 2 (Valence: positive vs. negative)  $\times$  2 (Difficulty: low vs. high) analysis of variance (ANOVA)

on the valence of the traits listed by participants. Negative valence was coded as  $-1$ , whereas positive valence was coded as 1. High difficulty was coded as  $-1$ , whereas low difficulty was coded as 1. A main effect of valence emerged,  $F(1, 160) = 144.28$ ,  $p < .001$ ,  $\eta^2 = 0.47$ , indicating that participants in the positive valence conditions perceived the traits they had listed as being more positive than participants in the negative valence condition ( $M = 1.36$ ,  $SD = 1.43$  vs.  $M = -1.21$ ,  $SD = 1.28$ , respectively). There were no main or interaction effects of the difficulty manipulation,  $p$ 's  $> .16$ .

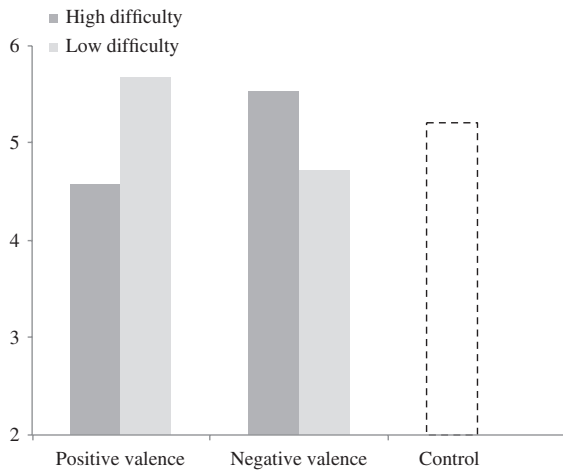
Another ANOVA on the perceived difficulty of the task revealed the presence of a main effect of difficulty,  $F(1, 160) = 10.87$ ,  $p < .001$ ,  $\eta^2_p = .06$ . Participants in the high difficulty condition perceived the task to be less easy than participants in the low difficulty condition ( $M = 4.17$ ,  $SD = 2.12$  vs.  $M = 5.28$ ,  $SD = 2.31$ ). The valence effect was also significant,  $F(1, 160) = 12.63$ ,  $p < .001$ ,  $\eta^2_p = .07$ . Participants in the negative valence condition perceived the task to be less easy than participants in the positive valence condition ( $M = 4.04$ ,  $SD = 2.27$  vs.  $M = 5.27$ ,  $SD = 2.14$ ). No other effect was significant,  $p = .20$ .

### Evaluations of the ingroup and outgroup

A 2 (Valence: positive vs. negative)  $\times$  2 (Difficulty: low vs. high)  $\times$  2 (Target group: ingroup vs. outgroup) mixed-model ANOVA using valence and difficulty of retrieval as between-subjects factors and target group as a within-subject factor was performed on participants' evaluations of the two groups. This analysis revealed the presence of a significant main effect of target group,  $F(1, 160) = 123.35$ ,  $p < .001$ ,  $\eta^2_p = .44$ , indicating that the ingroup was evaluated more positively than the outgroup ( $M = 6.74$ ,  $SD = 1.35$  vs.  $M = 5.14$ ,  $SD = 1.63$ ), reflecting intergroup bias (i.e., less favourable evaluations of the outgroup relative to the ingroup) overall. The Valence  $\times$  Difficulty interaction also proved significant,  $F(1, 160) = 11.00$ ,  $p < .002$ ,  $\eta^2_p = .06$ . These two effects were qualified by the three-way interaction effect,  $F(1, 160) = 6.18$ ,  $p = .01$ ,  $\eta^2_p = .04$ .

To decompose the three-way interaction, we conducted separate 2 (Valence: positive vs. negative)  $\times$  2 (Difficulty: low vs. high) ANOVAs on participants' ingroup and outgroup evaluations. The ANOVA on the evaluation of the ingroup yielded no significant effects,  $F$ 's  $< 1.20$ ,  $p$ 's  $> .28$ . In line with predictions, the same ANOVA on the evaluation of the outgroup yielded a significant Valence  $\times$  Difficulty interaction,  $F(1, 160) = 15.00$ ,  $p < .001$ ,  $\eta^2_p = .09$ . Follow-up analyses revealed that participants in the positive valence condition evaluated outgroup members more negatively in the high than in the low difficulty condition,  $F(1, 160) = 11.16$ ,  $p = .001$ ,  $\eta^2_p = .07$  ( $M = 4.58$ ,  $SD = 1.58$  vs.  $M = 5.67$ ,





**Figure 1.** Evaluation of outgroup members as a function of difficulty and valence.

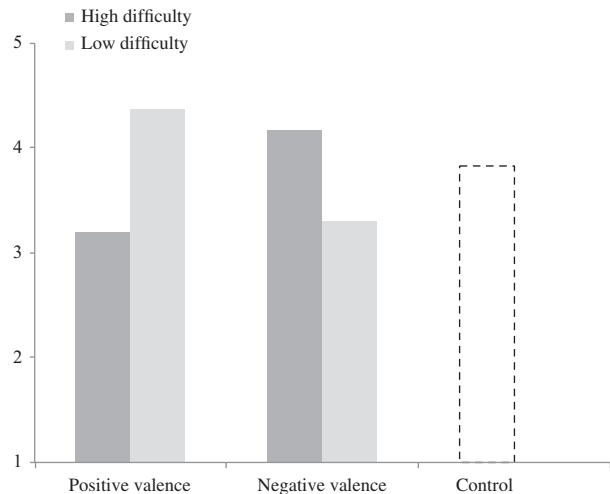
$SD = 1.43$ , respectively; see Figure 1). In sharp contrast, participants in the negative valence condition evaluated outgroup members more negatively in the low than in the high difficulty condition,  $F(1, 160) = 4.88, p < .05, \eta^2_p = .03$  ( $M = 4.72, SD = 1.69$  vs.  $M = 5.54, SD = 1.60$ , respectively). No other effect was significant,  $p$ 's  $> .56$ .

Additionally, two planned comparisons were conducted to check whether: (a) participants in the negative valence/high difficulty condition differed from participants in the positive valence/low difficulty condition regarding outgroup evaluation and (b) participants in the negative valence/low difficulty condition differed from participants in the positive valence/high difficulty condition. Neither contrast was significant,  $t$ 's  $< .40, p$ 's  $> .69$ .

We also conducted two one-way ANOVAs including the four experimental and the control conditions on ingroup and outgroup evaluation. The ANOVA on ingroup evaluation revealed that the condition effect was not significant,  $F(4, 214) = .60, p = .67, \eta^2_p = .01$ . Nevertheless, we used Dunnett's test to contrast the control versus each of the experimental conditions. There were no differences among the control condition and any of the other four conditions,  $p$ 's  $> .63$ . In contrast, the same one-way ANOVA on outgroup evaluation yielded a significant effect of condition,  $F(4, 214) = 3.95, p < .01, \eta^2_p = .07$ . To determine the statistical significance of the differences between the control and the other four experimental conditions, we conducted a Dunnett test. The difference between the control condition ( $M = 5.39, SD = 1.80$ ), and the positive valence/high difficulty condition was significant,  $p < .05$ . No other difference was significant,  $p$ 's  $> .19$ .

### Desire to interact with outgroup members

As predicted, a 2 (Valence: positive vs. negative)  $\times$  2 (Difficulty: low vs. high) ANOVA on the desire to interact



**Figure 2.** Desire to interact with outgroup members as a function of difficulty and valence.

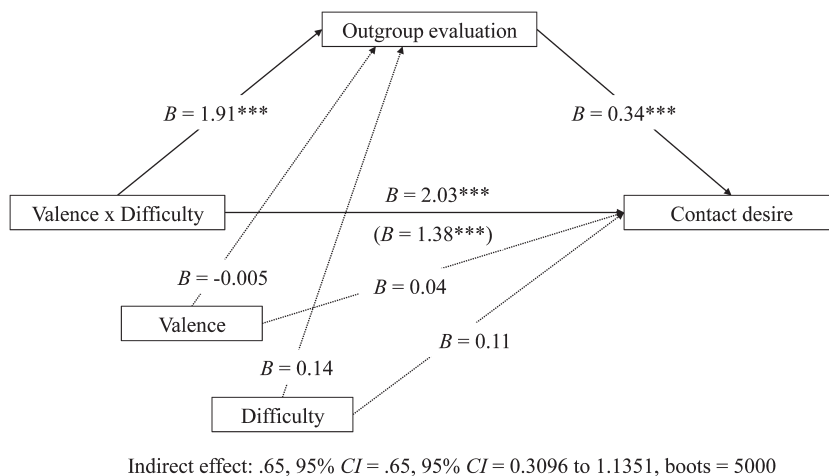
with outgroup members yielded a significant Valence  $\times$  Difficulty interaction,  $F(1, 160) = 28.31, p < .001, \eta^2_p = .15$ . Participants in the positive valence condition expressed a lower desire to interact with outgroup members in the high than in the low difficulty condition,  $F(1, 160) = 21.44, p < .001, \eta^2_p = .12$  ( $M = 3.19, SD = 1.42$  vs.  $M = 4.37, SD = .87$ , respectively; see Figure 2). By contrast, participants in the negative valence condition expressed a lower desire to interact with outgroup members in the low than in the high difficulty condition,  $F(1, 160) = 8.98, p < .01, \eta^2_p = .05$  ( $M = 3.31, SD = 1.41$  vs.  $M = 4.17, SD = 1.12$ , respectively). No other effect was significant,  $p$ 's  $> .40$ .

Two planned comparisons were conducted to check whether: (a) participants in the negative valence/high difficulty condition differed from participants in the positive valence/low difficulty condition and (b) participants in the negative valence/low difficulty condition differed from participants in the positive valence/high difficulty condition. Neither contrast was significant,  $t$ 's  $> .73, p$ 's  $> .46$ .

A one-way ANOVA that included the four experimental and the control conditions was conducted. The condition effect was significant,  $F(4, 214) = 7.27, p < .001, \eta^2_p = .12$ . According to a Dunnett test, the difference between the control condition ( $M = 3.98, SD = 1.41$ ), and the positive valence/high difficulty condition was significant,  $p < .01$ . The difference between the control condition and the negative valence/low difficulty condition was marginal,  $p < .06$ . No other difference was significant,  $p$ 's  $> .37$ .

### Mediated moderation

To test our mediated moderation hypothesis (Muller, Judd, & Yzerbyt, 2005) that the evaluation of the outgroup would mediate the interactive effect of difficulty and valence on the desire to interact with outgroup



**Figure 3.** Indirect effects of the valence by difficulty interaction on the desire to interact with outgroup members through the evaluation of the outgroup. Note: \*\*\* ( $p < .001$ ).

members, we conducted a bootstrapping test ( $n$  boots = 5,000) using Model 8 of the PROCESS SPSS macro provided by Hayes (2013). This analysis (see Figure 3) confirmed that the indirect effect of the interaction between difficulty and valence on desire for interaction through the evaluation of the outgroup members was significant, .65, 95% confidence interval (CI) = .3096–1.1351. This indirect effect remains significant when the Outgroup Evaluation  $\times$  Difficulty interaction is included in the model, .65, 95% CI = .3027–1.1184. Moreover, additional analyses testing a full model that included the effects on evaluations of the ingroup, as well, also demonstrated a significant indirect effect of the interaction between difficulty and valence on desire for interaction through the evaluation of the outgroup members, .67, 95% CI = .3021–1.1704, while the indirect effect through the evaluation of the ingroup members was not significant,  $-.03$ , 95% CI =  $-.2016$  to  $.0737$ .

## DISCUSSION

The vast majority of the investigations about meta-stereotypes have highlighted their negative consequences in the intergroup domain (Finchilescu, 2010; Frey & Tropp, 2006; Kamans et al., 2009; Vorauer et al., 1998; Yzerbyt et al., 2009). In general, people expect outgroups to hold rather negative views about their ingroup. However, these expectations are more negative than what is actually the case (Shelton & Richeson, 2005), and this paves the way for a series of misunderstandings. Indeed, research reveals a generally negative impact on the activation of meta-stereotypes on intergroup relations (Finchilescu, 2010).

Our results support, at least in part, previous findings about the negative implications of meta-stereotype activation for intergroup relations (Finchilescu, 2010;

Vorauer et al., 1998). The findings show that a simple manipulation such as asking people to think about potentially positive views that outgroup members may entertain about the ingroup exerts a significant impact on a series of important aspects likely to shape the unfolding of interactions between the two groups.

Importantly, also, the present work helps to fill the gap between social cognition approaches and intergroup relations by shedding light on the moderating influence of meta-cognitive processes – the subjective ease or difficulty of retrieving positive or negative meta-stereotypes – that further critically shapes the way meta-stereotypes influence intergroup relations. In particular, while we manipulated the valence of the meta-stereotype, we also demonstrated how the ease or difficulty of retrieving positively or negatively valenced meta-stereotypes plays a key role in whether meta-stereotype activation deteriorates the perception of and behavioural intentions towards outgroup members, such as lower desire to interact with members of the outgroup.

Our findings are clearly consistent with previous work indicating that people pay attention to the perceived ease or difficulty of retrieval and, in turn, that this subjective experience affects social judgement (Schwarz et al., 1991; Tormala et al., 2002). By manipulating the subjective ease or difficulty of retrieval, we managed to make participants equally willing to interact with outgroup members whether they had evoked positive or negative traits that they thought were ascribed to them by the outgroup. As in Schwarz et al. (1991), our results suggest that the difficulty of retrieving a series of traits “qualified the conclusions drawn from the content of recall to such a degree that the obtained judgments were, in fact, opposite to the implications of the recalled content” (p. 201). Specifically, our participants concluded that the image

that outgroup members have about ingroup members is not unfavourable when they had to generate a large number of negative traits instead of only a few ones. Clearly, their orientation towards the outgroup benefited from this inference. Conversely, participants concluded that outgroup members do not see ingroup members in such a positive light when listing positive traits was rendered difficult as opposed to easy. Consequently, they evaluated outgroup members in a much less enthusiastic manner and, in turn, expressed only a limited desire to interact with them.

In line with Schwarz et al. (1991), we obtained a crossover pattern whereby neither of the main effects reached significance. This pattern suggests that both positive and negative meta-stereotypes can improve or damage intergroup orientations to the same extent depending upon the subjective ease or difficulty of retrieval. Clearly, our findings might have important implications on interventions designed to modify intergroup orientations through meta-stereotypes. These interventions should not only consider the valence of the beliefs that are being activated but, importantly, the threshold assumed to be reached in terms of relevant evidence. Although intuitive reasoning would lead us to reduce intergroup hostility by eliciting positive meta-stereotypic beliefs, our results suggest that the adverse consequences of negative meta-stereotypes might be neutralised by increasing the demands to activate them. Since meta-stereotypes tend to be negative (Vorauer et al., 1998), the possibility to use difficulty of retrieval to counteract negative meta-stereotypes is not trivial.

Results were consistent for the outcome variables linked to the outgroup: outgroup evaluation and desire for contact with outgroup members. This consistency suggests that the interactive effect between valence and difficulty that was found is not an artefact of the particular measures employed. Moreover, and as we had hoped, our manipulations did not affect the image that ingroup members had about themselves. This is also an interesting finding because it indicates that the pattern of results observed on our critical dependent variables does not reflect a generalised reaction to the manipulations, but evidenced a specific reaction focused on the outgroup.

The present results clarify the conditions that may help prevent a negative effect of meta-stereotype activation on intergroup orientations. It should be noted, however, that we found no positive effects of meta-stereotype activation under any of the possible combinations of valence and difficulty of meta-stereotype retrieval when compared to the control condition. Still, we cannot discard the fact that meta-stereotypes may be effective to promote intergroup relations in other contexts. For instance, Shelton and Richeson (2005) suggested that individuals have different beliefs about the factors that inhibit self and outgroup

members from engaging in intergroup contact reflecting pluralistic ignorance. Individuals consider that their own inaction is due to a fear of being rejected, whereas the outgroup's inaction supposedly reveals lack of interest. To reduce intergroup pluralistic ignorance, perspective taking might be useful, as noted by Shelton and Richeson (2005). As a matter of fact, meta-stereotype activation implies taking the perspective of outgroup members, which might lead individuals to recognise that outgroup members are interested in and think about ingroup members.

Our study focused on outgroups of lower status than the ingroup. We adopted this strategy in order to allow a comparison with previous work on meta-stereotypes (e.g., Gordijn et al., 2008; Kamans et al., 2009; Owuamalam et al., 2013; Vorauer et al., 1998). Results may be different when outgroups of similar or higher status are being considered. For instance, similarity in status could generate distinctiveness threat (Jetten, Spears, & Postmes, 2004), leading to negative intergroup orientations regardless of the valence and difficulty of retrieval of the meta-stereotypes. By contrast, members of powerless groups are more inclined than members of powerful groups to activate and apply meta-stereotypes (Lammers, Gordijn, & Otten, 2008). Thus, increasing the difficulty of retrieval in members of low status ingroups may be imperative if one wishes to prevent a negative effect of meta-stereotypes. In any case, and in light of the clarity of the present findings, future studies should continue and explore whether the interactive effect between the valence of meta-stereotypes and their difficulty of retrieval found in the present work can be extended to outgroups of similar and higher status than the ingroup.

Our findings are also novel to cognitive approaches in that they suggest that people rely on their meta-cognitive experiences not only to make judgements about their personal characteristics (e.g. Schwarz et al., 1991) or attitudes (e.g. Tormala et al., 2002) but also to estimate the beliefs that others supposedly hold. In this case, those beliefs are related to the image that outgroup members have about the ingroup. Future research should determine whether the difficulty of recall affects the attribution of more general beliefs or behaviours to others. For instance, the illusory correlation between immigration and delinquency might be challenged asking individuals to recall a huge number of criminal actions committed by immigrants. To the extent that attitudes that are formed on the basis of ease of retrieval seem to be stable over time (see Weick & Guinote, 2008), future research should clarify how meta-cognitive processes can affect intergroup relations.

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