

Attitudes toward hiring people with disabilities: A meta-cognitive approach to persuasion

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Funding information

Proyecto I+D+i 2017 (Spanish Government), Grant/Award Number: PSI2017-83303-C2-1-P

Abstract

Attitudes toward hiring people with disabilities are becoming critical for promoting diversity and egalitarianism within organizations. The few interventions designed to promote positive attitudes toward people with disabilities have relied on changing either the direction and/or the amount of thoughts people generate with regard to this discriminated, understudied group. In the present research, we examine the impact of a different psychological process of attitude change based on meta-cognition, or thinking about thinking. We used a meta-cognitive approach to changing prejudiced attitudes because thoughtful processes are often overlooked or denied with regard to this particular group. Specifically, we explored the impact of thought confidence on attitude change across two studies designed to change attitudes toward the incorporation of people with disabilities in companies. In each study, participants first generated either positive or negative thoughts about the proposal (thought valence manipulation). Then, the confidence in those thoughts was measured (Study 1) or manipulated (Study 2). In concert with the self-validation hypothesis, results showed that when thought confidence was relatively high (vs. low), thought valence had a greater impact on attitudes. Thus, thought valence was more predictive of attitudes when participants were confident in their thoughts. Specifically, confidence in thoughts enhanced persuasion for positive thoughts but reduced persuasion for negative thoughts. These findings provide insights into assessing effects of interventions aiming at improving attitudes toward the inclusion of minority groups in organizations.

1 | INTRODUCTION

People with disabilities still face considerable social and structural obstacles that can impede their access to a job and their performance in the workplace. According to the Disability Statistics Annual Report (Kraus, 2017), within the United States in 2015, the employment rate of working-age people (18–64) was 41.1% lower for people with disabilities than for people without disabilities. In the European Union in 2014, the employment rate of people with disabilities was 23.8% lower than people without disabilities (Grammenos, 2017).

Beyond the obvious economic consequences associated with being unemployed, people with disabilities also face a variety of

social problems. For example, because people with disabilities often experience social isolation, unemployment further compounds this problem. Thus, employment provides an important opportunity to reduce this isolation (Isaac, Dharma Raja, & Ramanan, 2010). Furthermore, because work provides an opportunity to meet several basic human needs (i.e., a sense of control, collective purpose, social interaction, activity, and status, see Paul & Batinic, 2010), this can reduce the potential damage to one's mental health from lack of employment.

Unfortunately, the problems encountered by people with disabilities do not end when they finally obtain a job. For example, after obtaining a job, people with disabilities often indicate they

struggle to gain the social acceptance of their coworkers. This is one reason why people with disabilities experience difficulties holding a job with the same organization for an extended period of time (Vornholt, Uitdewilligen, & Nijhuis, 2013). Thus, an important societal goal is to promote favorable attitudes toward the inclusion and acceptance of people with disabilities in order to facilitate their incorporation and professional development in the organization.

Inclusive initiatives are sometimes implemented to promote the inclusion of members of underrepresented groups in organizational and educational contexts. For example, within organizations, these initiatives mandate increased employment opportunities for members of underrepresented groups, and allocate resources to prevent discrimination from occurring in the workplace (Crosby, Iyer, & Sincharoen, 2006; Leslie, Mayer, & Kravitz, 2014). Despite the beneficial goals of inclusive programs, a wealth of evidence indicates that the impact of these interventions vary greatly and are not always satisfactory regarding evaluative reactions (for a meta-analysis, see Harrison, Kravitz, Mayer, Leslie, & Lev-Arey, 2006).

2 | DISPARATE EFFECTS OF INCLUSIVE INITIATIVES

Prior research has shown diverse effects of inclusive programs on attitude change. First, some studies have found that these initiatives produce positive evaluative reactions (Hideg, Michela, & Ferris, 2011; Siperstein, Romano, Mohler, & Parker, 2006). However, in some cases the implementation of these initiatives has produced adverse effects increasing negative attitudes toward them (Konrad & Linnehan, 1995; Shteynberg, Leslie, Knight, & Mayer, 2011). Finally, other research has concluded that sometimes these interventions are ineffective, producing virtually no changes in attitude outcomes (Crosby, 2004; Kluegel & Smith, 1986; Son Hing, Bobocel, & Zanna, 2002).

Given these conflicting results, it is difficult to predict *whether*, *when*, and for *whom* these interventions will be successful, unsuccessful or even detrimental for promoting the corresponding positive attitudes. Understanding when these interventions are likely to lead to positive evaluative outcomes may depend in part on the consideration of the psychological processes through which attitudes change. Therefore, the present work sought to introduce one recently discovered mechanism of attitude change that is capable of explaining why and when the evaluation of a proposal to facilitate the incorporation of people with disabilities in an organization will produce positive, null or negative evaluative outcomes.

3 | ATTITUDE CHANGE THROUGH PROCESSES INVOLVING PRIMARY COGNITION

Developments in the science of persuasion over the past few decades have provided guidance on the mechanisms responsible for attitude

change. In contrast to the traditional view (e.g., Hovland, Janis, & Kelley, 1953) that the efficacy of persuasive proposals and educational campaigns depended upon learning the message content, the cognitive response model maintains that individuals play an active role in the persuasion process by relating message elements to their existing body of knowledge (Greenwald, 1968; Petty, Ostrom, & Brock, 1981) and that the extent of persuasion is determined by the person's thoughts in response to this information rather than learning the information *per se*. Previous work on cognitive responses to messages have focused on the valence of thoughts produced by a message when people are either motivated and/or able to process information. In general, more favorable thoughts toward a message leads to more persuasion. Similarly, more unfavorable thoughts toward a message leads to less persuasion, or can even change the recipient's attitude in a direction opposite to the advocacy.

Following the cognitive response approach, the elaboration likelihood model of persuasion (ELM; Petty & Briñol, 2012; Petty & Cacioppo, 1986), proposed that to understand attitude change, it was important to consider not only the direction of thoughts but also the amount of thinking done by the message recipient. Indeed, one finding common to research guided by the ELM is that when people carefully evaluate the content of a message, their topic-relevant attitudes are influenced to a greater degree by the quality of the arguments than when they are not carefully processing the message. In a relevant example, Gandarillas, Requero, Briñol, and Rojo (2014) examined the effect of organizational responsibility on the extent to which employees within a variety of professional organizations processed persuasive messages that contained either strong or weak arguments advocating in favor of incorporating more people with disabilities in their companies. The results indicated that having responsibility over other employees led to more information processing. Consequently, individuals who reported having (vs. not having) responsibility over other employees were better able to discriminate between persuasive messages that contained strong arguments versus weak arguments.

This example illustrates that the valence and the extent of thinking are important factors in producing attitude change toward proposals that promote the hiring of people with disabilities in organizations. Indeed, most of the research regarding this issue (i.e., inclusive interventions of minority groups) has focused on primary cognition processes. This prior research has involved presenting messages or descriptions of scenarios related to various interventions and then examining the impact of the cognitive responses (i.e., the valence) on the attitudes toward them (Aberson, 2003; Bell, Harrison, & McLaughlin, 2000; Quinn, Ross, & Esses, 2001; Seijts & Jackson, 2001). The present research maintains that considering the content (e.g., the direction) and the perceived validity of thoughts is important to better understand the effects of these interventions. As we will describe, relatively high confidence in positive thoughts should enhance persuasion but relatively high confidence in negative thoughts should decrease persuasion. Therefore, the extent of persuasion depends on whether people rely on their thoughts in forming attitudes.

4 | ATTITUDE CHANGE THROUGH METACOGNITIVE PROCESSES

The idea that the extent of reliance on one's thoughts can be critical for judgment is known as the *self-validation hypothesis* (Petty, Briñol, & Tormala, 2002). The key tenet of this hypothesis is that the mere process of generating thoughts is not sufficient for these thoughts to have a subsequent impact on judgments. Importantly, one must also have confidence in one's thoughts.

Furthermore, the self-validation hypothesis holds that the impact of confidence in one's thoughts should be greater when the likelihood of thinking is high. This is the case for at least two reasons: First, if individuals have relatively few thoughts about a proposal, then there will also be relatively few thoughts to validate or invalidate. Second, the same factors that have been shown to motivate high amounts of elaboration of a proposal (e.g., high personal importance of the issue, accountability; see Petty & Cacioppo, 1986) are also likely to motivate people to scrutinize and evaluate the validity of their own thoughts. Taken together, the primary goal of this research is to argue for the relevance and utility of studying the impact of this metacognitive factor—thought confidence—in proposals that advocate hiring people with disabilities in organizations.

4.1 | Attitude change as a function of measured or manipulated confidence

Research on self-validation suggested that measures of thought confidence are one effective way to examine the role of thought reliance in persuasion. For example, Petty et al. (2002; Study 1) asked participants to carefully read and think about a proposal regarding a campus issue, then write down their thoughts about the issue. Next, participants were asked to indicate the extent to which they were confident in the thoughts they had listed, and their attitudes toward the proposal. Results indicated that thoughts were a significantly greater predictor of attitudes when thought confidence was reported to be relatively high versus low. Specifically, higher levels of confidence was associated with more persuasion for positive thoughts but less persuasion for negative thoughts. Put differently, to the extent that confidence in thoughts was lacking, persuasion was less dependent on thought valence.

Furthermore, this initial research in self-validation demonstrated that thought confidence not only can be measured but also manipulated. In a second study, participants were asked to carefully read the same proposal and list their thoughts. Then, participants were asked to think about past situations in which they experienced confidence or doubt (Petty et al., 2002; Study 3). Participants who recalled past instances of confidence reported more certainty in the validity of their thoughts about the proposal compared to those who recalled instances of doubt. As predicted, confidence increased the impact of thought valence (manipulated by argument quality) on attitudes compared to doubt. As a consequence, when thoughts were mostly positive (in response to strong arguments), increased

confidence enhanced persuasion, but when thoughts were unfavorable (in response to weak arguments), increased confidence reduced persuasion. Other studies on self-validation have shown that thought confidence can also be manipulated through more subtle ways, such as inductions of embodiment (e.g., head nodding, Briñol & Petty, 2003) and by varying source credibility (e.g., Briñol, Petty, & Tormala, 2004). Therefore, support for the self-validation hypothesis was found through both measuring and manipulating thought confidence in different ways.

4.2 | Changing attitudes toward people with disability through metacognition

One potentially interesting application of the self-validation paradigm would be to evaluate the role that thought confidence plays in attitude change toward a proposal that advocates hiring people with disabilities in an organization. People with disabilities belong to a relatively forgotten minority compared to other groups that have received more attention in research on inclusion practices. In fact, most of the intervention programs that have been studied and applied thus far have focused on tackling inequalities of gender, race, or ethnicity (Blanchard & Crosby, 2012).

We chose to examine attitudes toward people with disabilities as the focus of our research because having a disability is perceived to be associated with reduced performance, and performance is the key dimension for most formal organizations (Stone & Colella, 1996). People with disabilities are seen as less capable of competing at the same standard of performance as people without disabilities (Stone-Romero, Stone, & Lukaszewski, 2006). These diminished performance perceptions are often explained in terms of lacking competence (Cuddy, Fiske, & Glick, 2007; Rohmer & Louvet, 2018). Beliefs about competence may be particularly resistant to change and thus it is important to study their vulnerability to persuasion.

Furthermore, people with disabilities are often subject to a dehumanization process through which this collective is perceived as unable to have sophisticated mental processes (O'Brien, 2003). There are very negative consequences that arise from denying both cognitive and meta-cognitive processes to others (Heflick & Goldenberg, 2014; Loughnan et al., 2010; Orehek & Weaverling, 2017). In order to avoid these dehumanizing attitudes toward people with disabilities, Bogdan and Taylor (1989) proposed that we must perceive them as being able to have a "social place" within a community, see them as unique individuals, and, most importantly, for our current purposes "*attribute thinking to them.*"

In addition, research in this domain has examined attitude change strategies based exclusively on primary cognition processes, but not on meta-cognitive processes (Aberson, 2003; Bell et al., 2000; Hideg & Ferris, 2014; Quinn et al., 2001; Seijts & Jackson, 2001). That is, this body of literature has investigated the thoughts people generate in response to these interventions, but not what people think about their own thoughts or how they use their thoughts. We propose that it is not only important to take

into consideration the content of people's thoughts but also their perceived validity so as to better understand the effects of these interventions.

In summary, given that our attitude change treatment is based on meta-cognition, and that the goal of the research is promoting positive attitudes toward hiring more people from this underrepresented group at work (given them a social place), we consider that this could be an opportunity to reduce prejudice of this understudied collective. That is, using a meta-cognitive approach to changing attitudes toward a group for which meta-cognitive processes are often overlooked or denied gives this research a unique value.

5 | OVERVIEW

In the present research, we used a self-validation paradigm to evaluate the attitudinal response to a proposal to hire people with disabilities. First, we asked participants to generate either positive or negative thoughts about this proposal. Next, in order to evaluate the effect of thought confidence on the attitude change process, thought confidence was either measured (Study 1) or was experimentally manipulated (Study 2). According to the self-validation hypothesis, our expectation was that the effect of thought valence on attitudes would be greater for participants with high levels of confidence in their thoughts compared to those with relatively lower levels of thought confidence. Thus, thought favorability was predicted to have a stronger relationship with attitudes when confidence in thoughts was relatively high (vs. low). Furthermore, thought favorability served as a manipulation check for the thought valence manipulation.

6 | STUDY 1

The goal of Study 1 was to provide an initial examination of the role that thought confidence plays in attitudes toward the incorporation of people with disabilities in an organization. Specifically, participants received information about a company and its proposal to promote the hiring of people with disabilities, and then were asked to list the positive or negative aspects of this initiative. Previous research has shown that this is an effective way to create relatively positive or negative evaluative responses toward an issue (Killeya & Johnson, 1998). Following the thought valence induction, participants reported their attitudes toward the proposal as well as the extent to which they were confident in their thoughts. The order of these two variables was counterbalanced across subjects so that half of the participants completed the thought confidence measure before the attitudes and the other half completed it afterward.

We predicted that thought confidence would moderate the impact of thought valence on subsequent attitudes toward the proposal to hire people with disabilities. Specifically, individuals who

reported high confidence in their thoughts would exhibit greater thought reliance when reporting their attitudes than individuals who reported low confidence in their thoughts. Furthermore, when thoughts are favorable, our expectation was that high confidence would increase persuasion. By contrast, when thoughts are unfavorable, high confidence was predicted to reduce persuasion. Another way to examine thought usage commonly employed in persuasion studies is to examine the correlation between valenced thoughts and attitudes (Briñol & Petty, 2009). That is, the more people are relying on their thoughts, the larger the correlation we expected between valenced thoughts and attitudes. It was not expected that the order of the introduction of thought confidence measure would make a difference in the results.

7 | METHOD

7.1 | Participants and design

One hundred and sixty-five undergraduate students (39 males, 123 females, and 3 gender-unidentified participants, $M_{\text{age}} = 22.21$; $SD = 3.42$) from Universidad Autónoma de Madrid (Madrid, Spain) voluntarily participated in the study. Participants were randomly assigned to conditions in a 2 (Thought Valence: Positive vs. Negative) \times 2 (Order of Thought Confidence Measure: Before vs. After) between-subjects design in which thought confidence was measured as a continuous variable and attitudes toward the proposal was the main dependent measure. A power analysis was performed using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) which assumed a small to medium value for the interaction effect size (Cohen's $f = 0.22$). Results of this analysis suggested that the desired sample size for a two-tailed test ($\alpha = 0.05$) with 0.80 power was $N = 165$. We obtained the intended number of participants.

7.2 | Procedure

Upon arrival, participants were informed that they would be involved in a study about initiatives to facilitate the incorporation of people with disabilities in organizations. Because an important goal of Study 1 was to investigate the role of metacognitive processes, which require conditions of careful thought, we wanted to ensure that participants were in a high level of thought elaboration. Thus, participants were informed that because they belonged to a very small group of people who would be completing the survey, their feedback was especially important to the researchers (see Petty, Harkins, & Williams, 1980). That is, all participants were explicitly instructed to pay close attention to a proposal to promote the hiring of people with disabilities in an organization. Next, participants were randomly assigned to generate either positive or negative thoughts about this proposal. Then, participants reported their attitudes toward the proposal and the extent to which they were confident in their thoughts. We counterbalanced the order of these

two measures across subjects. Finally, participants completed some demographic information, were debriefed, thanked, and dismissed.¹

7.3 | Independent/predictor variables

7.3.1 | Thought valence

Participants were told to carefully read a message about a company and its proposal to promote the hiring of people with disabilities. Next, they were asked to list either positive or negative thoughts toward the proposal. Specifically, in the positive thoughts condition, participants were told to write the positive aspects and potentially beneficial consequences that could result from the implementation of this initiative. In the negative thoughts condition, participants were told to write the negative aspects and potentially damaging consequences of it (for the literal instructions, see Appendix A). Some examples of positive thoughts listed by participants include the following: “Disabled people have always been neglected and it is high-time to implement a measure like this,” “It increases tax benefits for the company,” and “If people with disabilities are hired, the social value of this group can increase since no company hires people who are not useful to them.” In contrast, examples of negative thoughts that participants wrote include: “The company could be implementing this measure just to improve its image and not to help society,” “Other minority groups may feel discriminated against,” and “This measure is not fair for people who have equal or greater performance capacity simply because they are not part of this minority group.”

7.3.2 | Thought confidence

Participants reported the extent to which they had confidence in the validity of the thoughts that they generated. Based on previous research, perceptions of confidence were measured on a series of three 9-point scales (see Briñol et al., 2004; Clark, Wegener, Briñol, & Petty, 2013; Petty et al., 2002). Specifically, participants responded to the following questions: “Overall, how much confidence do you have in the thoughts that you listed?” (1 = *Not at all-Very much*), “Overall, how much certainty do you have in the thoughts that you listed?” (1 = *Not at all-Very much*), and “Overall, how valid would you say your thoughts were?” (1 = *Not valid at all-Very valid*). A composite index of thought confidence was

formed by averaging responses to these three measures ($\alpha = .928$).² We did not expect differences in attitudes depending on when thought confidence was measured (before or after attitudes).

7.4 | Dependent variables

7.4.1 | Thought favorability

Two independent judges coded the valence of participants' thoughts using a 3-point scale (-1 = negative, 0 = neutral, 1 = positive), while blind to condition (e.g., Cacioppo & Petty, 1979; Petty & Cacioppo, 1984). Judges agreed on 82.4% of the thoughts and disagreements (17.6%) were resolved by discussion. An index of the valence of thoughts was created for each participant using the following formula (Petty & Cacioppo, 1986): Thought Favorability = (Number of positive relevant thoughts - Number of negative relevant thoughts) / Total number of thoughts. This measure served as a thought valence manipulation check.

7.4.2 | Attitudes

Participants reported their attitude toward the proposal on four 9-point (1-9) semantic differential scales (i.e., like-dislike, in favor-against, desirable-undesirable, beneficial-harmful). Item ratings were highly intercorrelated ($\alpha = .893$), thus were averaged to form an overall attitude index toward the proposal. Responses were scored such that higher numbers reflect a more favorable attitude, whereas lower numbers reflect a less favorable attitude.

8 | RESULTS

8.1 | Thought favorability

A multiple linear regression was run with thought valence and order of thought confidence measure as dichotomous predictors, thought confidence as a continuous predictor and the thought favorability index as the dependent variable. Results revealed the predicted main effect of thought valence, $B = 1.722$, $t(156) = 39.291$, $p < .001$, 95% CI: 1.635, 1.808, such that participants' thoughts were more favorable in the positive ($M = 0.90$, $SD = 0.21$) than negative ($M = -0.83$, $SD = 0.29$) thought valence condition. This result of the manipulation check confirms the success of the thought valence induction in creating two groups with different thoughts. No main effect of thought confidence, order of thought confidence measure, or any interactions emerged, $ps > .226$.

¹We submitted the demographic variables of participants to two different analyses as a test of the successful random assignment of participants to thought valence condition and the nonrelation with thought confidence. For age, a multiple regression that was run with thought valence and thought confidence as the independent variables and age as the dependent variable showed no significant effects ($ps > .36$). For gender, given that it is a dichotomous variable (0 = male, 1 = female), a logistic binary regression was run with thought valence and thought confidence as the predictors and gender as the dependent variable. Once again, results showed no significant effects ($ps > .30$), suggesting that participants were indeed randomly assigned to the experimental conditions.

²Ratings of thought confidence were not affected by the manipulation of thought valence when this measure was presented after the attitudes, $t(83) = -0.905$, $p = .368$, 95% CI: -0.991, 0.371. When the thought confidence was measured before, the effect of thought valence was significant, $t(53.52) = -7.925$, $p < .001$, 95% CI: -3.425, -2.042, such that thought confidence was higher for positive thoughts than negative thoughts.

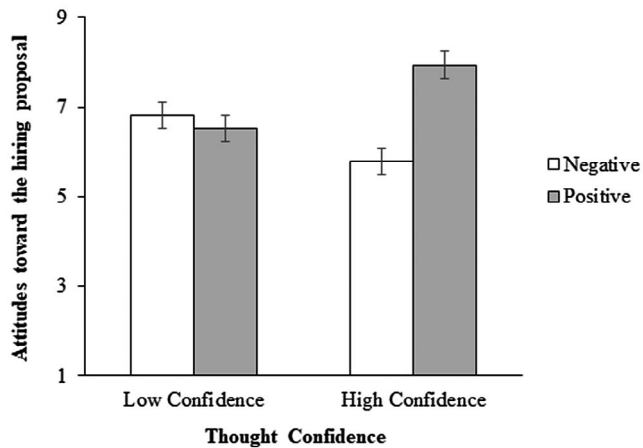


FIGURE 1 Results for Experiment 1. Attitudes toward the proposal as a function of thought valence and thought confidence (measured by asking participants the extent to which they had confidence in the validity of the thoughts that they generated)

8.2 | Attitudes

Similar analyses using attitudes as the dependent variable revealed a main effect of thought valence in which positive thoughts resulted in more favorable attitudes than negative thoughts, $B = 1.168$, $t(161) = 4.534$, $p < .001$, 95% CI: 0.659, 1.676. Most importantly, a significant two-way interaction was found between thought valence and thought confidence, $B = 0.672$, $t(161) = 4.448$, $p < .001$, 95% CI: 0.384, 0.971 (see Figure 1).³ This interaction was not qualified by the presentation order of the thought confidence measure, $B = 0.254$, $t(157) = 0.768$, $p = .444$, 95% CI: -0.399 , 0.906. As expected, among participants who reported relatively high levels of confidence in their thoughts (+1SD), those listing positive thoughts toward the proposal reported significantly more favorable attitudes than those listing negative thoughts, $B = 2.154$, $t(161) = 6.536$, $p < .001$, 95% CI: 1.503, 2.805. However, for participants who reported relatively low levels of confidence in their thoughts (-1SD), no difference in attitudes emerged between those listing positive versus negative thoughts toward the proposal, $B = -0.295$, $t(161) = -0.721$, $p = .472$, 95% CI: -1.104 , 0.513.

Viewed differently, this interaction also indicates that among participants listing negative thoughts, those who reported relatively high levels of confidence in their thoughts reported less favorable attitudes than those who reported relatively low levels of confidence in their thoughts, $B = -0.282$, $t(161) = -3.589$, $p < .001$, 95% CI: -0.437 , -0.127 . Among participants listing positive thoughts toward the proposal, those who reported relatively high levels of confidence in their thoughts reported more favorable attitudes than those who reported relatively low levels of confidence in their thoughts, $B = 0.390$, $t(161) = 3.023$, $p = .002$, 95% CI: 0.135, 0.645.

8.3 | Thought-attitude linkage

Our expectation was that participants with higher levels of thought confidence would rely more on their thoughts when forming attitudes than participants with lower levels of thought confidence. Regressing attitudes onto the relevant variables revealed a significant interaction between thought confidence and the thought favorability index, $B = 0.349$, $t(160) = 4.126$, $p = .001$, 95% CI: 0.182, 0.516. Consistent with a self-validation approach, this interaction pattern revealed that thought favorability was associated with attitudes only for participants with higher levels of thought confidence ($B = 1.176$, $t(160) = 6.288$, $p < .001$, 95% CI: 0.807, 1.545), but not for those at lower levels of thought confidence ($B = -0.095$, $t(160) = -0.418$, $p = .676$, 95% CI: -0.543 , 0.353).

9 | DISCUSSION

In line with the self-validation hypothesis, the results of Study 1 revealed that the extent to which people have confidence in the validity of their thoughts can play an important role in persuasion toward a proposal to promote the hiring of people with disabilities. Specifically, when individuals' thought confidence was relatively high, they showed a greater reliance on their thoughts in forming their judgments, whereas when thought confidence was relatively low, participants showed less overall reliance on their thoughts in forming their judgments. Furthermore, participant's confidence in their thoughts either increased or decreased persuasion based on the valence of their thoughts. As predicted, when participants generated predominately favorable thoughts, more confidence in those thoughts was linked with more persuasion. In contrast, when participants generated predominantly negative thoughts, more confidence in those thoughts was linked with less persuasion. Finally, participants' thoughts were more closely associated with attitudes when participants reported high thought confidence rather than low.

This is the first demonstration that attitudes toward this discriminated group can change not only as a function of processes of primary cognition (thought valence) but also as a function of processes of secondary cognition (thought confidence). On the one hand, it is very informative to know that measuring the spontaneous confidence of thoughts can lead to increased predictability in attitudes in this important domain. On the other hand, because confidence in participants' thoughts was measured, it is possible that other, unmeasured factors may have been confounded with reported confidence. Therefore, in the next study, we manipulate thought confidence is manipulated in order to more accurately infer the causal role of this variable.

10 | STUDY 2

The goal of Study 2 was to conceptually replicate and extend the findings in Study 1, and to examine the causal role of thought

³The results did not vary as a function of age ($B = 0.01$; $p > .72$) nor gender ($B = 0.17$; $p > .69$).

confidence. First, participants received information about a company and its proposal to promote the hiring of people with disabilities. Next, participants were asked to list the positive or negative aspects of this initiative. Following the thought valence induction, thought confidence was manipulated (rather than measured) in order to establish the causal role of this variable. Specifically, we induced high or low confidence through two different procedures, one based on past memories and one based on source credibility. We did not expect this two inductions to vary the results, and the variation was included for generalization purposes. Finally, participants reported their attitudes toward the proposal.

As in Study 1, our goal was to demonstrate that thought confidence moderates the impact of thought valence on subsequent attitudes toward the proposal to hire people with disabilities. Our expectations was that participants assigned to high confidence conditions would use their thoughts more in reporting attitudes compared to those in low confidence conditions. In other words, our expectation was that confidence should polarize attitudes by increasing persuasion in response to positive thoughts and decreasing persuasion in response to negative thoughts. Finally, we expected both positive and negative thoughts to be more predictive of attitudes when thought confidence was high than low.

11 | METHOD

11.1 | Participants and design

Two hundred and sixty-four undergraduate students (42 males, 216 females, and 6 gender-identified participants, $M_{\text{age}} = 20.41$; $SD = 3.77$) from Universidad Autónoma de Madrid (Madrid, Spain) voluntarily participated in this experiment. Participants were randomly assigned to conditions in a 2 (Thought Valence: Positive vs. Negative) \times 2 (Thought Confidence: High confidence vs. Low confidence) \times 2 (Type of Confidence Induction: Past memories vs. Source credibility) between-participants factorial design, with attitudes toward the proposal to promote the hiring of people with disabilities as the dependent measure. A power analysis was performed using G*Power (Faul et al., 2007). Because Study 2 experimentally manipulated thought confidence (vs. measuring thought confidence as in Study 1), we anticipated a smaller effect size than in Study 1. Therefore, we planned for a smaller effect (Cohen's $f = 0.18$) for the 2 (Thought Valence) \times 2 (Thought Confidence) interaction. Results of the power analysis concluded that the desired sample size for a two-tailed test ($\alpha = 0.05$) with 0.80 power was $N = 245$ participants. Our final sample of $N = 264$ slightly exceeded that number.

11.2 | Procedure

The introduction to this experiment was very similar to the previous one. First, participants were informed that because they belonged to

a very small group of people who would be completing the survey, their feedback was especially important to the researchers (see Petty et al., 1980). That is, all participants were explicitly instructed to pay close attention to a proposal that advocated hiring people with disabilities. Next, participants were randomly assigned to generate either positive or negative thoughts about the proposal. Following this thought valence manipulation, participants were randomly assigned to either a high or low thought confidence condition. Thought confidence was induced in two different ways. One method used a procedure based on a memory task (i.e., writing a personal experience in which they felt either confidence or doubt), whereas the other method used a procedure via manipulating source credibility (i.e., participants were told that the hiring proposal either came from a source with credibility (high confidence) or from a source without credibility (low confidence)).⁴ Finally, participants reported their attitudes toward the proposal, then were debriefed, thanked, and dismissed.

11.3 | Independent variables

11.3.1 | Thought valence

As in Study 1, participants were asked to carefully read a proposal in which a company advocates hiring people with disabilities. Next, participants were randomly assigned to list either positive thoughts or negative thoughts about this proposal.

11.3.2 | Thought confidence

Participants were randomly assigned to one of two different types of thought confidence inductions. In one thought confidence induction participants were asked to describe a past personal episode in which they felt either confidence or doubt in their thoughts. Examples of episodes described in the doubt condition included: "While doing an exam I felt doubts because I was not sure what I had to answer," and "I wanted to buy a new cell phone that was very expensive and I was not sure if I should buy it or not." Examples of episodes described in the confidence condition were: "The last time I felt confident was in an argument with a friend. I was sure I was right," and, "Once I had to present a work in public. I prepared it so well that I felt very confident at the time of the speech." Prior research has shown that this manipulation is successful at inducing confidence and doubt in one's thoughts (Petty et al., 2002).

⁴As a test of the successful random assignment of participants to conditions, we submitted the demographic variables of participants to two different analyses. For age, a 2 \times 2 ANOVA that was run with thought valence and thought confidence as the independent variables and age as the dependent variable showed no significant effects ($p > .23$). For gender, given that it is a dichotomous variable (0 = male, 1 = female), a logistic binary regression was run with thought valence and thought confidence as the predictors and gender as the dependent variable. Once again, results showed no significant effects ($p > .32$), suggesting that participants were indeed randomly assigned to the experimental conditions.

In the other thought confidence induction, participants were led to believe that the initial information about the proposal was part of a proposal led by either a noncredible or a credible source.⁵ In the low credibility condition, participants were informed that the hiring proposal had been implemented by a company accused of malpractice scandals and was known for not respecting social justice, thus had a poor reputation. In the high credibility condition, participants were informed that the proposal had been implemented by a company known for caring about society and fighting for justice, thus had an excellent reputation.⁶

11.4 | Dependent variables

11.4.1 | Thought favorability

As in Study 1, two independent judges coded the valence of participants' thoughts using a 3-point scale (-1 = negative, 0 = neutral, 1 = positive), while blind to condition (e.g., Cacioppo & Petty, 1979; Petty & Cacioppo, 1984). Judges agreed on 83.7% of the thoughts and disagreements (16.3%) were resolved by discussion. A thought favorability index was created using the same approach as Study 1 (Petty & Cacioppo, 1986). As noted, thought favorability served as a manipulation check for the thought valence manipulation.

11.4.2 | Attitudes

Participants reported their attitudes toward the proposal using the same four items as in the previous study (9-point scales). Item ratings were highly intercorrelated ($\alpha = .885$ for the past memories procedure; $\alpha = .901$ for the source credibility procedure), thus attitudes were standardized within each procedure and were then averaged to form an overall attitude index toward the proposal. Responses were scored such that higher numbers reflect a more

favorable attitude, whereas lower numbers reflect a less favorable attitude.

12 | RESULTS

12.1 | Thought favorability

Results of a 2 (Thought Valence: Positive vs. Negative) \times 2 (Thought Confidence: High confidence vs. Low confidence) \times 2 (Type of Confidence Induction: Past memories vs. Source credibility) ANOVA on the thought favorability index revealed the predicted main effect of thought valence, $F(1, 255) = 2,512.876, p < .001, \eta_p^2 = 0.908$. Participants' thoughts toward the proposal were more favorable in the positive ($M = 0.91, SD = 0.22$) than negative ($M = -0.85, SD = 0.33$) thought valence condition, revealing that the manipulation of thought valence was successful. No further effects reached significance, $ps > .12$.⁷

12.2 | Attitudes

The same 2 \times 2 \times 2 ANOVA with attitudes as the dependent variable revealed a main effect of thought valence, $F(1, 256) = 13.888, p < .001, \eta_p^2 = 0.051$, in which positive thoughts led to more favorable attitudes ($M = 0.23, SD = 0.86$) than negative thoughts ($M = -0.24, SD = 1.08$). Most importantly, a significant two-way interaction was found between thought valence and thought confidence on attitudes toward the proposal, $F(1, 256) = 10.911, p = .001, \eta_p^2 = 0.041$.⁸ As illustrated in Figure 2, among participants in the high confidence condition, attitudes toward the proposal were more favorable after listing positive thoughts ($M = 0.37, SD = 0.73$) than after listing negative thoughts ($M = -0.47, SD = 1.21$), $F(1, 256) = 26.423, p < .001, \eta_p^2 = 0.092$. In contrast, among participants in the low confidence condition, no difference in attitudes emerged between those listing positive thoughts ($M = 0.10, SD = 0.96$) and those listing negative thoughts ($M = 0.01, SD = 0.84$), $F(1, 256) = 0.253, p = .615, \eta_p^2 = 0.001$.

Viewed differently, this interaction also indicates that among participants listing negative thoughts toward the proposal, those in the confidence condition ($M = -0.47, SD = 1.21$) reported significantly less favorable attitudes than those in the doubt condition ($M = 0.01, SD = 0.84$), $F(1, 256) = 8.215, p = .004, \eta_p^2 = 0.031$. Among participants listing positive thoughts toward the proposal, those in the confidence condition ($M = 0.37, SD = 0.73$) tended to report more favorable attitudes than those in the doubt condition ($M = 0.10, SD = 0.96$), although this effect did not reach significance, $F(1, 256) = 2.711, p = .101$,

⁵Participants receiving this induction were run following the memory task induction. Based on prior research, our expectation was that credibility would influence the perceived validity of the thoughts that people generated in response to a persuasive proposal. That is, when a person has already thought about information in a proposal and then later discovers that it originated from either a high or low credibility source, their thoughts can also be validated or invalidated by this source information (Briñol & Petty, 2009; Briñol et al., 2004; Tormala et al., 2006; Tormala et al., 2007). For example, learning that a message source is high in credibility may lead a person to reason that, this suggests the information is presumably valid, thus my thoughts about it can be trusted. In contrast, learning that a message source has low credibility may lead a person to reason that this suggests the information is likely invalid, and thus reduce confidence in one's thoughts about this information. Therefore, high credibility (vs. low credibility) was expected to increase (vs. decrease) reliance on one's own thoughts when forming judgments about an attitude object.

⁶To further ensure that our manipulation influenced perceptions of source credibility, we conducted a pilot test ($N = 52$) in which participants were asked to evaluate the extent to which they perceived the intentions of the source as honest (9-point scale). As expected, the results showed that participants' perceptions of honesty were higher when the message came from a source with an excellent reputation ($M = 5.81, SD = 2.06$) than when the message came from a source with a poor reputation ($M = 4.04, SD = 2.21, t(50) = 3.00, p < .01$). Thus, our pilot data confirmed the success of our source credibility manipulation.

⁷There was a main effect of the type of confidence induction on thought favorability, $F(1, 255) = 10.835, p = .001, \eta_p^2 = 0.041$, such that in the past memories induction, participants' thoughts were less favorable ($M = -0.01, SD = 0.88$) than in the source credibility induction ($M = 0.09, SD = 0.95$).

⁸The results did not vary as a function of age ($B = 0.06, p > .66$) nor gender ($F < 0.010, p > .92$).

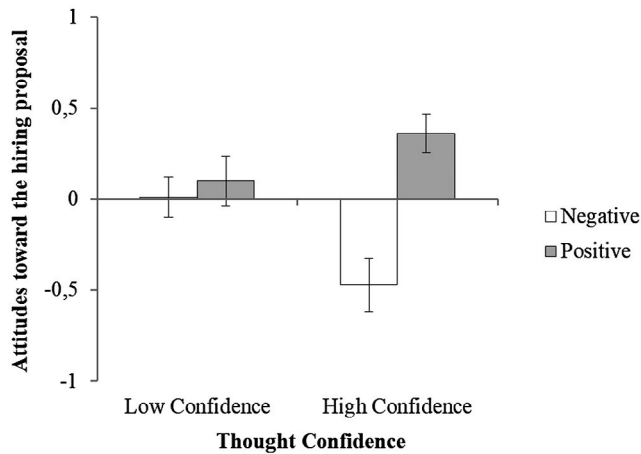


FIGURE 2 Results for Experiment 2. Attitudes toward the proposal as a function of thought valence and thought confidence (manipulated by assigning participants to high or low confidence conditions)

$\eta_p^2 = 0.010$. Results did not vary as a function of the type of confidence induction ($F = 0.707, p = .401$). That is, the two-way interaction was equivalent both for those who received the past memories and the source credibility induction.

12.3 | Thought-attitude linkage

Our expectation was that participants in the high confidence condition would rely more on their thoughts when forming attitudes than participants in the low confidence condition. Regressing attitudes onto the relevant variables revealed a significant interaction between the thought favorability index and thought confidence, $B = 0.372, t(259) = 2.919, p = .004, 95\% \text{ CI: } 0.121, 0.623$. Consistent with a self-validation approach, this interaction pattern revealed that thought favorability was associated with attitudes only for participants in the high confidence condition ($B = 0.450, t(259) = 5.048, p < .001, 95\% \text{ CI: } 0.274, 0.626$), but not for those in the low confidence condition ($B = 0.077, t(259) = 0.853, p = .394, 95\% \text{ CI: } -0.102, 0.257$).

13 | DISCUSSION

Study 2 conceptually replicated the pattern of effects found in Study 1, in which the effect of thought valence on attitudes was greater for participants in the high versus low confidence conditions. Importantly, this effect occurred in both confidence inductions and did not differ in magnitude across induction types. In addition, these data also extended Study 1 by providing evidence of the causal role of thought-confidence. That is, thoughts were more predictive of attitudes when participants were in the high confidence conditions compared to the low confidence conditions. Furthermore, the overall pattern of effects are relatively consistent with the idea that confidence in one's thoughts can lead to increased or decreased persuasion depending

on the valence of the thoughts generated. That is, participants who generated predominately unfavorable thoughts were less persuaded with high than with low confidence. In contrast, those who generated favorable thoughts tended to be more persuaded with high than low confidence, although this effect was not statistically significant.

14 | GENERAL DISCUSSION

Across two studies, the present work examined a meta-cognitive process by which attitude change could be induced toward a proposal to facilitate the incorporation of people with disabilities in an organization. In each study, the influence of thought reliance on persuasion was examined by having participants generate either positive or negative thoughts about a proposal to promote the hiring of people with disabilities. Next, thought confidence was either measured (Study 1) or manipulated (Study 2). Across both types of procedures, the results yielded evidence that supported the self-validation hypothesis. Specifically, the results showed that the extent to which people rely on their thoughts can play an important role in persuasion toward the proposal.⁹

Study 1 showed that when individuals' thought confidence was relatively high, thoughts were more predictive of subsequent attitudes toward the proposal than when thought confidence was relatively low. Study 2 replicated these findings using an experimental design in which we manipulated participants' confidence in their thoughts. Results showed that the effect of thought valence on attitudes was greater when thought confidence was high rather than low. Thus, thought favorability was more predictive of attitudes when confidence was naturally high (Study 1) and when confidence was experimentally induced to be high (Study 2). Furthermore, we showed that the extent to which people have confidence in the validity of their thoughts can play a significant role in attitude change. In line with the self-validation hypothesis, the effect of thought valence on attitudes was greater for those individuals with relatively high (vs. low) confidence in their own thoughts. Put differently, as thought confidence increased,

⁹An additional study with 116 participants was collected in developing materials for this line of research. This data set a 2 (manipulated Thought Valence) \times 2 (manipulated Thought Confidence) design with attitudes toward the hiring proposal as the main dependent measure. The study was not statistically significant unlike those reported in this manuscript, $F(1, 112) = 0.202, p < .654, \eta_p^2 = 0.002$. The pattern of results on the attitude showed a tendency for participants to have more favorable attitudes in the high confidence ($M = 7.41, SD = 1.27$) than in the low confidence condition ($M = 7.13, SD = 1.26$), $F(1, 112) = 1.482, p < .226, \eta_p^2 = 0.013$. Importantly, when we collapsed this data set with the two studies reported in the main text, all the key effects remained significant. Before aggregating the information from the three data sets, we standardized the dependent measures, and included study as a factor. Furthermore, in Study 2 we classified participants as either high or low in thought confidence on the basis of a median split. Then the data sets were combined resulting in a dataset with $N = 545$ participants. As we expected, a 2 (Thought Valence: Positive vs. Negative) \times 2 (Thought Confidence: High vs. Low) \times 2 (Study: 1, 2, 3) ANOVA revealed that the predicted two-way interaction between thought valence and thought confidence was significant, $F(1, 529) = 15.341, p < .001, \eta_p^2 = 0.028$. A three-way interaction between thought valence, thought confidence and study was also significant $F(1, 529) = 3.123, p = .026, \eta_p^2 = 0.017$. As noted, this effects was likely due the fact that the third database did not have enough statistical power and failed to get the effect predicted.

valenced thoughts were more predictive of attitudes. Taken together, these results suggest that, although previously ignored, reliance on thoughts is an important determinant of attitudinal outcomes in the domain of initiatives to facilitate the incorporation of people with disabilities in organizations.

Note that these results highlight the interactive nature of thought confidence and thought valence as they influence attitudes toward these initiatives. That is, our data have shown that these two factors are relevant to understanding when an intervention can be effective in terms of producing positive or negative outcomes. That is, when people generate favorable thoughts about a proposal to promote the hiring of people with disabilities, they are more persuaded if they have confidence in their thoughts, and thus use them more to inform their attitudes than when they doubt their thoughts. However, when people generate unfavorable thoughts toward the proposal, thought confidence leads to less persuasion because people are now relying on their negative thoughts to inform their subsequent judgments, thus producing undesired adverse effects. Furthermore, considering the interactive effect of thought valence and thought confidence might also be informative in terms of understanding some of the null effects observed in response to these interventions in prior studies. Based on the notion of validation, null outcomes (no change) can emerge from the complete invalidation of one's thoughts in response to a persuasive proposal (e.g., due to low perceived credibility).

This variety of results is consistent with previous research showing positive effects of these initiatives on attitudes (Hideg et al., 2011; Siperstein et al., 2006), negative effects (Konrad & Linnehan, 1995; Shteynberg et al., 2011) and null effects (Crosby, 2004; Kluegel & Smith, 1986; Son Hing et al., 2002; for a meta-analysis, see Harrison et al., 2006). The present findings suggest that psychological processes involving meta-cognition can be useful in interpreting this apparently contradictory set of outcomes.

Furthermore, this work provides some practical recommendations for those interested in promoting the inclusion of minority groups. Instead of exposing people to relevant information and having them engaged in training programs alone, the present research takes a different approach by focusing on how people respond to that information. Specifically, the present approach offers a couple of key questions that practitioners should ask themselves when they promote interventions to hire people with disabilities in workplaces.

First, "How favorable or unfavorable are the thoughts elicited by the proposal?", and second, "Does the individual perceive those thoughts as valid or invalid?" When people perceive their thoughts to be valid, they are more likely to rely on them in forming their judgments. This would be the desirable case when the thoughts toward the proposal are positive. However, when people have doubts about their thoughts or perceive them to be invalid, they are less likely to use them as a basis for judgment. This would be the best scenario when the thoughts toward the proposal are negative. Furthermore, if one perceives the thoughts of the target audience to be positive, then looking for high validity will magnify the impact of those

thoughts. In contrast, when one perceives the thoughts of the audience to be negative, engaging people in low validity scenarios will attenuate the impact of what people think.

Since we know that this meta-cognitive paradigm works for this stigmatized group, it could be applied directly to the most common negative beliefs that people have toward this group (e.g., perception of lack of competence) using thinking invalidation strategies to attenuate them. We can also apply the recommendations provided by Bogdan and Taylor (1989) to avoid dehumanization of this group, and use validation strategies when observing that people perceive them as unique individuals, and attribute thinking to them.

Furthermore, the perceived validity of these thoughts can be manipulated by other techniques such as having participants engage in confident (vs. doubtful) actions (e.g., Briñol, DeMarree, & Petty, 2015), or by empowerment (e.g., DeMarree, Briñol, & Petty, 2014; Gandarillas et al., 2014), or by activating confident emotions such as anger and disgust (Ashton-James & Tracy, 2012; Briñol, Petty, & Requero, 2017; Briñol et al., 2018; Hodson & Costello, 2007), or by providing them with convergent (vs. divergent) evidence matching their thoughts (Clark, Wegener, Briñol, & Petty, 2009; Clark et al., 2013), or by highlighting the entitativity nature of their groups (Clark & Thiem, 2015), or merely by priming the concept of justice (Santos & Rivera, 2015).

Therefore, policymakers should take our research into account when implementing these kinds of initiatives in companies. As these studies have shown, producing favorable thoughts for such initiatives may not be enough. Recipients must also have confidence in the positive thoughts generated. That is, the successful impact of such initiatives ultimately depends on the reliance employees have on their own favorable thoughts. Furthermore, policymakers and researchers should not only design effective strategies that promote favorable thoughts toward their proposal but also attend to the metacognitions associated with thoughts. Based on the results of our studies, either initiatives or confidence alone do not always lead to the intended outcomes, thus policymakers can benefit from knowing how thoughts in response to the proposal and thought-confidence interact with each other (rather than producing additive effects in all cases).

The present research is the very first one examining meta-cognitive processes with regard to attitudes toward people with disabilities who have been victims of prejudice and discrimination in organizations. The use of a meta-cognitive approach is innovative in changing attitudes toward those mentally dehumanized. Furthermore, the potential to generalize the results from this group to other stigmatized groups is one of the key advantages of relying on basic processes of change. So far, research on attitude change through self-validation processes have examined prejudiced attitudes toward other stigmatized groups such as African Americans, and people with low socio-economical status (e.g., Clark, Thiem, Barden, Stuart, & Evans, 2015; Clark et al., 2009).

The self-validation process occurs when people are prompted to consider how confident they are in their own thoughts following (or at least, during) thought generation instead of prior to thought generation. Indeed, a wealth of prior research has shown that the

self-validation mechanism is particularly likely to operate when thoughts are generated before the validating variable (e.g., a source with high credibility) is introduced. Importantly, whereas a variable (e.g., a source with high credibility) might affect the *extent or valence of thinking* when it is introduced *prior* to thought generation about an attitude object, the same variable can impact *thought confidence* when it is introduced *after* thinking about an attitude object (see Briñol, Petty, Valle, Rucker, & Becerra, 2007). As this applies to the present research, because the induction of thought confidence in Study 2 followed (rather than preceded) thought generation, it is unlikely that the thoughts participants generated in response to the proposal were influenced by something that was not introduced until later.

In closing, we note that some scholars might wonder whether participants increased confidence in their thoughts in the confidence conditions or whether reliance on thoughts was reduced for participants in the doubt conditions, or a combination of both. Although having a control group would allow for more precise claims, ultimately this feature is not central to our conceptual contribution. This is because whether confidence or doubt may have a greater effect over a neutral no-treatment group would likely depend on many variables, including whether the experimental induction is blatant or subtle, how people are feeling prior to the experimental inductions, and so forth. Most importantly, the key conceptual point is to show that the interaction of thought confidence and thought valence can not only reproduce the disparate effects found in the literature, but importantly, also provide a tentative explanation of them. Nevertheless, future research should replicate and extend our findings by including a more complete experimental design with no-treatment groups, as well as baseline measures to analyze within-participants differences (pre- vs. posttreatment) because of their potential applied value.

In sum, the current research extends previous research on the role of thought reliance in attitude change, in this case applied to a socially relevant context such as interventions that promote the incorporation of people with disabilities in organizations. Furthermore, this work highlights the relevance and utility of studying the impact of this metacognitive variable (thought confidence) in persuasion toward these initiatives. An open question for future research consist in examining why thought confidence was higher for some people than others. One possibility is that there are trait differences in confidence across all kinds of attitudinal objects. Another possibility would be that individual differences in confidence are domain specific. In that case, participants in our first study could be more confident because they felt specially knowledgeable or familiarized with this topic. Regardless of the potential origins of individual differences in reported confidence observed in the first study, Study 2 showed that confidence in thoughts on this topic can also vary with situational inductions.

ACKNOWLEDGMENTS

This work was supported by the Spanish Government [grant number PSI2017-83303-C2-1-P].

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How to cite this article: Requero B, Santos D, Paredes B, Briñol P, Petty RE. Attitudes toward hiring people with disabilities: A meta-cognitive approach to persuasion. *J Appl Soc Psychol.* 2020;00:1–13. <https://doi.org/10.1111/jasp.12658>

APPENDIX A

THOUGHT VALENCE INSTRUCTIONS

“A company has begun to consider implementing an initiative to promote the incorporation of people with disabilities in the workplace. This initiative is said to require the company to comply with a minimum percentage of hiring employees belonging to this minority group. We are asking different collectives about arguments supporting/opposing [depending on condition] this initiative. Please list in the boxes below as many favorable/unfavorable [depending on condition] thoughts toward the proposal as you might consider.”