

High and low conflict moral dilemmas resolution: Comparing moral judgment from Spanish and Mexican samples

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Running title:

Cultural influence on moral judgment

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Conflict of Interest

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Abstract

Moral dilemmas resolution tasks are a common method to evaluate moral judgment processes. Cultural variables are known to influence these processes. However, performance from different populations has not been directly compared to systematically explore these possible influences. For this purpose, we directly compared the resolution of high and low conflict moral dilemmas in students from two different countries, Spain and México. Each dilemma allowed four possible resolutions, distributed in a continuum from non-utilitarian responses to utilitarian responses: the proposed solution is definitely not acceptable (DNA), it is not acceptable (NA), it is acceptable (A), and it is definitely acceptable (DA). The results indicate that both samples tend to resolve the low conflict moral dilemmas by DNA (non-utilitarian) responses, with a non-significantly higher number of DNA responses in the Mexican group. Regarding high conflict moral dilemmas, the number of non-utilitarian responses (DNA) was significantly higher in the Mexican group, and there was a significantly higher number of utilitarian responses (A) in the Spanish group. These findings suggest that cultural and social differences may influence moral judgments, particularly in relation to non-utilitarian responses in high moral conflicts (Mexican sample) and utilitarian resolutions of high conflict situations (Spanish sample).

Keywords: cultural influences, moral dilemmas task, moral judgment, utilitarian responses

Moral judgment is a relevant process for social interactions. This process can be evaluated using different tasks that allow exploring the specific cognitive and affective mechanisms involved. Different tasks have been standardized to evaluate the moral judgment process. Mostly, in these tasks, different moral dilemmas can be resolved in a utilitarian (a solution that involves damage to the least possible number of people) or non-utilitarian (a solution that does not prevent damage to a greater number of people) way, and subjects have to decide if the given solution (utilitarian or non-utilitarian) is morally acceptable or not for them (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008). Besides, the level of moral conflict is usually modulated in these tasks by assigning high (personal and with high emotional load) or low (impersonal and with low emotional load) moral conflict to each of the dilemmas. These procedures have provided critical information about the cognitive mechanisms involved in moral judgment and moral dilemmas (Greene, 2015). In addition, neuroanatomical and neurofunctional studies have delineated possible neurobiological substrates of the complex moral processes as well as relevant brain mechanisms involved in moral decisions (Anderson, Bechara, Damasio, Tranel, & Damasio, 1999; Cameron, Reber, Spring, & Tranel, 2018; Cushman, Murray, Gordon-Mckee, Wharton, & Greene, 2012; Fumagalli & Priori, 2012; Joshua D. Greene, Nystrom, Engell, Darley, & Cohen, 2004; Koenigs et al., 2007; Shenhav & Greene, 2014). Overall, psychological and physiological mechanisms involved in moral judgment, moral dilemmas and decisions with moral dimensions are being investigated in depth (Gawronski, Armstrong, Conway, Friesdorf, & Hütter, 2017; Greene et al., 2004). However, direct comparisons between different cultures are necessary to know the effect of cultural and social influences on the process of moral dilemmas resolution.

The relationship between moral judgment and cultural norms can be understood from the processes involved in the resolution of moral dilemmas. Indeed, moral judgment seems to involve decisions controlled by either fast, automatic and intuitive processes or more conscious and thoughtful processes (Greene et al., 2001; Haidt, 2001; Tinghög et al., 2016). The strength of both processes determines the level of conflict of a moral dilemma, that is, moral conflict is high when high tension is created between these two processes. In either case, all these processes involve cognitive and emotional functions (Gawronski, Conway, Armstrong, Friesdorf, & Hütter, 2018; Greene et al., 2008; Hauser, Cushman, Young, Kang-Xing Jin, & Mikhail, 2007; Horne & Powell, 2016; Moore, Clark, & Kane, 2008) that are sensitive to cultural, social and personal variables (Haidt, 2001). According to this immersion of emotions and cognition in cultural and social status, several cross-cultural studies have shown that negative emotions can modulate the process of moral attributions in different populations (An et al., 2016; An & Trafimow, 2014). Moreover, classical theoretical models attribute two determinants in the resolution process of moral dilemmas (Gawronski et al., 2017). Utilitarian resolutions of moral dilemmas seek to minimize damage and depend on their critical consequences (Gawronski & Beer, 2017; Hannikainen et al., 2018). Nevertheless, from a deontology perspective, moral dilemmas resolution depends on the adjustment to moral norms and the tendency to avoid damage to any living being. This assumption involves the following rhetorical question, typical of moral philosophy: is it morally permissible to harm one to save many? Regardless of the unresolved issues from these perspectives, it can be argued that both determinants in the resolution of dilemmas (utilitarian vs. non-utilitarian responses) may also be modulated by those factors that govern social norms (Barrett et al., 2016). The nature of this social component of the resolution of moral dilemmas still needs to be elucidated. Considering this background, the aim of the

present study was to explore for the first time if the resolution of moral dilemmas, with high and low conflict, differs between samples from two countries with different cultural and social characteristics (but not with differences in language that could condition the results of the task), such as Spain and Mexico. A direct comparison between both conflict levels in both populations may help to clarify the role of social and cultural influences on moral judgment. Specifically, significant differences between the two groups in utilitarian and non-utilitarian responses and/or in the resolution of high or low conflict dilemmas could reveal the importance of general social norms in moral processes. Several cross-cultural norms and conditions have been suggested as factors affecting moral judgements, including population density and religious beliefs. These factors may potentially influence moral values and decisions (Graham et al., 2016), and cross-societal differences in these factors might thus determine different responses in moral judgement tasks (Kahane et al., 2018). In congruence with these postulates, it has been shown that strong religious values are related to non-utilitarian responses and deontological resolutions (Piazza, 2012; Piazza & Sousa, 2014; Szekely et al., 2015). Therefore, since moral judgment is sensitive to the acquired set of norms transmitted through religious education (Christensen et al., 2014), particularly in societies where a large population follows such norms, a higher proportion of deontological responses should be expected in the Mexican sample, where both factors (religious beliefs and population density) are more pronounced.

METHOD

Participants

Two hundred and thirty-four voluntary Spanish speaking university students participated in this cohort study, 120 of which were undergraduate students of the University of Huelva,

Spain (mean age 22.2 ± 2.7 , 74.17% women), and 114 were undergraduate students of the University of Baja California, México (mean age 23.82 ± 4.65 , 62.28% women). The study was performed in accordance with the ethical standards and principles of the Declaration of Helsinki and its amendments. Participants completed an anonymous questionnaire voluntarily and thereby no written informed consent was required.

Moral dilemmas task

A version of the Greene et al. (2001, 2004, 2008)'s moral dilemmas task was used to evaluate the resolution of high and low conflict moral dilemmas. Ten dilemmas of the original task were selected for this purpose. All participants completed an anonymous questionnaire with these dilemmas and had to answer if the solution offered in each of them was morally acceptable or not. Unlike the original task, in which a dichotomous solution was offered (acceptable or not acceptable), each dilemma allowed four possible resolutions, distributed in a continuum from non-utilitarian responses (resolution involves saving a small number of people at the expense of damage to a greater number of people) to utilitarian responses (resolution implies that the damage falls on as few people as possible). This grading in responses would make it possible to detect subtle differences in moral judgment that may go unnoticed in dichotomous responses. The four possible resolutions, from non-utilitarian to utilitarian responses, were: (i) the proposed solution is definitely not acceptable (DNA); (ii) it is not acceptable (NA); (iii) it is acceptable (A); (iv) it is definitely acceptable (DA). Dilemmas 1, 5, 6 and 10 were low moral conflict dilemmas (in whose history damage could be induced to a reduced number of people, or the resolution did not require a personal and direct action from the reader), and dilemmas 2, 3, 4, 7, 8 and 9 were high moral conflict

dilemmas (in whose history a large number of people could be seriously affected, or the resolution required a personal and direct action from the reader).

Procedure

Participants were instructed to complete the moral dilemmas questionnaire according to the instructions of the original task (Greene et al., 2001). Following these instructions, it was stressed that they should not consider their responses as correct or incorrect because the task involved personal moral judgments and not the resolution of logical problems. They were advised not to make long deliberations and to respond according to the first decision taken to resolve each dilemma. Since all the volunteers were students, the task was completed in the same classroom and at the same time by all the participants of each group. The maximum time to complete the task was 15 min, considering that 90 seconds per dilemma is the time allotted in the original task. The raw scores of each participant were recorded on an answer sheet. After 15 min all data were collected. Once the task was completed, the scores were transferred to a spreadsheet for offline statistical analyses. The scores obtained by both groups in the high and low conflict moral dilemmas were analyzed separately.

Statistical analyses

Independent samples *t*-tests were conducted to analyze differences between groups (Spanish group vs. Mexican group) in each of the four task responses (DNA, NA, A and DA). Separate analyses were performed for high (2, 3, 4, 7, 8, 9) and low (1, 5, 6, 10) conflict moral dilemmas. The percentage of participants from both groups for each of the responses was analyzed as a dependent variable. An exploratory 2 × 4 between groups ANOVA was also conducted to analyze differences between Mexican and Spanish groups in each of the four

possible responses. The critical level of significance in all tests was set to $p < 0.05$. The analyses were conducted using SPSS software.

RESULTS

Table 1 shows the results of the independent samples t -tests for each set of dilemmas (that is, with low and high moral conflict). The results of the exploratory 2×4 between groups ANOVA are available as Supplemental material. The results of the t -tests conducted to analyze responses to the low conflict moral dilemmas revealed a higher number of DNA responses in the Mexican group, although there were no significant differences between groups in DNA, NA, A, and DA responses ($p = 0.145$, $p = 0.177$, $p = 0.076$, $p = 0.106$, respectively). Figure 1 shows the frequency distribution (percentage of participants) of both groups for each of the four possible responses to the set of low conflict moral dilemmas.

The independent samples t -tests conducted to analyze responses to the high conflict moral dilemmas showed significant differences between groups in DNA (higher scores in the Mexican group, $p < 0.001$), and A (higher scores in the Spanish group, $p < 0.001$) responses. No significant differences between groups were found in NA ($p = 0.180$) and DA responses ($p = 0.445$). Figure 2 shows the frequency distribution (percentage of participants) of both groups for each of the four possible responses to the set of high conflict moral dilemmas.

INSERT TABLE 1 APPROXIMATELY HERE

INSERT FIGURE 1 APPROXIMATELY HERE

INSERT FIGURE 2 APPROXIMATELY HERE

DISCUSSION

Considering that moral judgments, as well as the tasks used to evaluate them, involve complex psychological processes (Cohen & Ahn, 2016; Gawronski et al., 2018) that are susceptible to cultural and social influences (Barrett et al., 2016; Haidt, 2001), we aimed to analyze possible differences in moral judgments between two samples from different countries using a graduated version of the Greene et al. (2001, 2004, 2008)'s moral dilemmas task. Such direct comparisons between different populations have not been performed so far to elucidate the importance of social norms and cultural influences on moral judgment. The results reveal significant differences between both populations in the graduation of utilitarian and non-utilitarian responses to high moral conflict dilemmas. Mexican and Spanish participants use the extreme non-utilitarian resolution (DNA) when facing low conflict moral dilemmas. The percentage of participants for DNA responses was higher in the Mexican group, but this difference did not reach significance. The percentage of participants giving non-utilitarian responses (DNA) to high conflict moral dilemmas was higher in the Mexican group. Conversely, the percentage of resolutions of the high conflict moral dilemmas through utilitarian responses (A) was higher in the Spanish group. These results may be influenced by the fact that the responses were evaluated in a continuum of four options, which facilitates the detection of differences between the different responses (Figure 1 and 2). Dichotomous responses, on the other hand, probably minimize possible differences between the groups. Overall, it can be argued that resolution of moral dilemmas is sensitive to cultural and social influences since non-utilitarian responses to high moral conflict dilemmas significantly differ between both populations, and the greater use of utilitarian resolutions in high moral conflict situations depends on belonging to one of the groups.

Regarding the typical social factors of each group and their influences on results, it is worth highlighting the greater number of non-utilitarian responses in the Mexican group to high moral conflict dilemmas and the highest proportion of utilitarian responses to high conflict dilemmas in the Spanish group. This difference suggests that the Mexican group tends to solve the high moral conflict dilemmas in a deontological way in greater proportion than the Spanish group. Interestingly, in high moral conflict dilemmas, the Spanish group responds in a utilitarian way in greater proportion. Therefore, as expected, the percentage of deontological responses to moral dilemmas was higher in the sample where religious beliefs and population involved were more widespread (Mexican group). Although Catholic religion is common in both countries, religious beliefs and population density are more pronounced in Mexico (Hoffman et al., 2015; Hoffman & Marsiglia, 2014; Meidl et al., 2017), which could have influenced the between groups differences in moral judgments, particularly when resolving high conflict dilemmas. Moreover, differential neural systems between Catholics and Atheists have been shown during the resolution of deontological and utilitarian moral judgements (Christensen et al., 2014). In general, the results of the present study are in accordance with previous studies suggesting that deontological reasoning is strongly linked to religiosity (Kahane et al., 2018; Piazza, 2012; Piazza & Sousa, 2014). These selective differences in the proportion of certain responses within the utilitarian-non-utilitarian continuum can thus be explained by the social and cultural differences of both groups (Barrett et al., 2016; Moncrieff & Lienard, 2018), although the specificity of these differences cannot simply be deduced from the results obtained. Beyond what are the specific cultural differences that influence the results, the findings of the present study show an implication of sociocultural variables in moral decision making, which should be systematically studied in future research.

Taken together, these findings may shed light on the involvement of group determinants in the resolution of moral dilemmas, particularly supporting the relevance of cultural and social factors in the theoretical explanation of this complex psychological process. For example, classical theoretical models of moral dilemmas resolution consider any response as dependent on either a utilitarian component or a deontological component (Gawronski et al., 2017; Gawronski & Beer, 2017; Helzer et al., 2017). In this theoretical conception of the moral dilemma resolution process, normative and social differences should be considered since utilitarian and deontological decisions are formed within social and cultural contexts (Heiphetz & Young, 2017). Additional theoretical models of moral judgment based on motivational (Bretz & Sun, 2018), emotional (Young & Koenigs, 2007), and personal (Uhlmann et al., 2015) determinants also appear to be congruent with the role of social groups in moral decision processes, assuming that personal motivations are largely inseparable from social contexts. Therefore, the results of this study are consistent with the essence of these new models and with the theoretical explanatory proposals of both forms of resolution, utilitarian and deontological, and support the relevance of sociocultural and relational factors in the resolution of moral dilemmas and the underlying cognitive and emotional processes (Barrett et al., 2016; Cushman, Kumar, & Railton, 2017; Greene, 2017; Horne & Powell, 2016; Landy & Goodwin, 2015; Osman & Wiegmann, 2017; Schein & Gray, 2018; Simpson, Laham, & Fiske, 2016).

The translation of these findings is limited considering that no experimental manipulations were conducted, and the study data derived from direct comparisons between the scores of two different population groups of students. Additionally, the results cannot provide direct evidence regarding the specific social characteristics of the groups that affect

moral decision making. For instance, the groups that participated in this study correspond to two well differentiated populations, but in order not to introduce an initial confounding factor, both were Spanish-speaking groups and university students, with the group similarities that this entails. Experimental research using populations with specific social differences, as for example language (An et al., 2016; An & Trafimow, 2014), may shed light on the relevant social mechanisms and cultural aspects involved in the process of moral judgment. Despite these possible limitations, the results of this study represent an indication of the influences that social groups may exert on resolving differentiated moral dilemmas in their conflict degrees. An important implication of this differential influence of social and cultural norms is the role that education might have in shaping moral judgments that are potentially beneficial to societies.

Conclusions

Moral dilemmas resolution is a complex psychological process involving multiple cognitive and emotional factors and their interactions (Greene, 2015). The selective differences between the two groups in the responses throughout the utilitarian-non-utilitarian continuum and to the level of moral conflict obtained in this study suggest that norms and social contexts significantly influence the process of moral decision. The specific social influences that determine these results (religious beliefs, sociodemographic characteristics, etc.) cannot be stated simply from the data collected between samples, albeit experimental designs in this field could provide more evidence, and from different perspectives (methodological, theoretical, etc.), about the expected effects of specific sociocultural factors on moral judgment and moral dilemmas resolution.

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Figures legend

Figure 1. Percentage of participants of both groups for each of the four possible responses to the set of low conflict moral dilemmas. DNA, definitely not acceptable; NA, it is not acceptable; A, it is acceptable; DA, it is definitely acceptable. No significant between groups differences were found in any of the responses.

Figure 2. Percentage of participants of both groups for each of the four possible responses to the set of high conflict moral dilemmas. DNA, definitely not acceptable; NA, it is not acceptable; A, it is acceptable; DA, it is definitely acceptable. A higher percentage was found in the Mexican group, compared to the Spanish group, in the DNA responses ($p < 0.001$). A higher percentage of participants was found in the Spanish group, compared to the Mexican group, in the A responses ($p < 0.001$). * $p < 0.05$.