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MORAL AND ETHICAL JUDGEMENT IN THE ACADEMIC TRAINING: A PILOT STUDY ON STUDENTS OF ECONOMICS

Abstract: Moral reasoning is central in all professionalisms and it is crucial in those professions where economical and financial aspects can be used to "help" or not the others. The present pilot study aims at investigating possible differences in moral judgement between students of Economics at their first year and students at the end of university training. This population will be compared to a similar group of students of the School of Psychology. Results show that gender and academic seniority can directly drive moral decision making, while the fact to be enrolled in different academic courses (i.e. Economics Vs Psychology) can probably only indirectly modulate this behavior. Some explanations to these phenomena have been put forward and discussed in a critical way.

Keywords: Moral dilemmas, moral judgement, decision-making, Economics, university training.

1. Introduction

Debates on the moral nature of man have occupied the center of discussions among theologians, philosophers, and laymen for many centuries (Moll et al., 2008). This is not surprising since the fact that morality plays a central role in the constitution of human nature. Very often, in fact, people can risk material resources or even its own physical integrity to help and/or to pun-

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ish perfect strangers. And this happens simply to observe a sense of fairness, concern for others, and observance of cultural, social or religious norms (Goodenough, Prehn, 2004; Zeki, Goodenough, 2004). As stressed by Moll et al. (2008), this inclination can go far beyond the interpersonal sphere, because humans can engage in costly behaviors in order to support abstract causes, beliefs and also ideologies. This so-called "moral sensitivity" emerges from a sophisticated integration of cognitive, emotional and motivational mechanisms, internalized through an active process of cultural learning during sensitive periods of personal and individual development (Moll et al. 2002).

Defining morality is a difficult task, since any definition will suffer from limitations, especially when evaluated by scholars from different fields and with different cultural and teorethical background. Generally, under the operational point of view, one can define morality as the sets of customs and values that are embraced by a cultural group to guide social conduct (Moll et al. 2005). This definition can sustain a cognitive vision of morality because: a) it implicitly accepts the existence of cultural variability of values, rules and norms; b) as claimed by Haidt and Graham (2007), it is compatible with the role of multiple psychological domains in moral cognition (care, harm, fairness, disgust, authority); c) it emphasizes the fact that morality, biologically speaking, is fundamentally tied to evaluation, and d) morality emerged from our evolutionary history, probably by way of gene-culture coevolution, by means of sophisticated forms of cooperation, cohesion and reciprocity (Nowak, Sigmund, 2005).

Doing moral choices and thus deciding something that can have effects on others being evaluated as "right" or "wrong" is based on "moral motivations" that depend on the representation of complex moral sentiments and values, and this may bring to a simple categorization of moral actions (Moll et al., 2008): 1. Self-serving actions that do not affect others; 2. Self-serving actions that negatively affect others ("selfishness"); 3. Actions that are beneficial to others, with a high probability of reciprocation ("reciprocal altruism"); 4. Actions that are beneficial to others, with no direct personal benefits (material or reputation gains) and no expected reciprocation ("genuine altruism"), that includes altruistic helping as well as costly punishment of norm violators ("altruistic punishment"). Usually we can affirm that ordinary be-

haviors of social mammals fall into categories 1, 2 and 3, while genuine altruism is mainly a human attribute (Nowak, Sigmund, 2005). Although genuine altruism is costly to the individual and is less likely with increasing cost, it benefits the survival of a social group and, therefore, may have conveyed evolutionary advantages (Fehr, Fischbacher, 2003).

Altruistic choices underlie prosocial acts, such as costly helping, as well as costly punishment, in which one sacrifices one's own resources to punish somebody who violates a social norm (Fehr, Fischbacher, 2003). Understanding the nature of such inclinations is a challenging task, as these behaviors can be quite costly and do not confer clear material or survival advantages from the agent's perspective. While theoretical biology and experimental economics have strongly substantiated the validity of these "selfless" human behaviors (Trivers, 1971; Maynard-Smith, Szathmary, 1997; Fehr, Fischbacher, 2003; Fehr, Rockenbach, 2004), the motivational sources of altruistic inclinations have only recently started to be unveiled by neuroscience. Specifically regarding human moral behavior, it is reasonable to assume that without the engagement of motivational mechanisms, purely rational moral prescriptions ("oughts") could not be translated into actual behaviors.

It is now well accepted that both emotion and cognition play relevant roles in moral judgment, but it is not totally clear how they interact to produce moral thoughts and choices. Some authors believe that although emotion and cognition collaborate in this decision making processes, they are dependent on largely separable neural systems. Generally speaking this point of view hypothesize a central role of the prefrontal cortex in cognitive (rational) control and inhibitory function over the limbic (emotional) automatic responses in cases of moral conflict. This top-down processes guarantee that better decisions leading to overall "greater benefit" will be made (e.g., Sperduti et al., 2011). An alternative point of view emphasizes the idea that emotion and cognition are non dissociable elements underlying moral motivations, and that such motivations are represented within corti-colimbic neural assemblies (Moll et al., 2008). Following these authors, conflicting moral decisions would not entail a conflict between emotion and cognition, but between two or more choices, which rely on corticolimbic assemblies encoding distinct motivationally salient goals.

As such, a cognitive process that is devoid of motivational salience would never be able to overcome a motivationally laden choice-even if the "rational" option would be saving dozens of lives and the "emotional" one would be eating a piece of chocolate cake. As proposed by Moll and co-authors (2008), moral sentiments and values are key players in moral cognition and decision making by providing these complex motivations.

Together with all issues discussed above about moral decision making, also human individual differences should be considered. Several psychological studies showed that our cognitive, emotional, social processes can be at least modulated by individual motivations and expectations. According to the cognitive-developmental approach based on Kolberg's ideas, the development of moral reasoning occurs through change in the proportions of three cognitive schemas used while reasoning about a moral dilemma (Rest et al., 2000). Personal Interest is the least developed schema, which is characterized by thinking about personal gains or losses of each participant of the moral dilemma or their significant others. The following and more advanced, in terms of fairness and justice, is the Maintaining Norms schema, characterized by realization that one needs to get along with people other than friends and kin, and therefore needs rules and norms to stabilize behaviours and expectation among people who are not familiar intimates and may have different interests. Finally, the most developed moral reasoning uses Post-conventional schema, characterized by the primacy of moral criteria, appeal to shareable ideals and full reciprocity. According to the theory, individuals irreversibly progress from using mostly Personal Interest towards using mostly Post-conventional schema when thinking about a moral dilemma (Rest et al., 1999, 2000). The critical period of transition to the Post-conventional moral reasoning is late adolescence and young adulthood (Rest et al., 2000; King et al., 2002). In this period, educational experience can play an essential role and the majority of studies confirmed the positive association between moral reasoning and higher education (King et al., 2002; Pascarella et al., 2005).

Finally, as recently observed in medical students, university education can lead to the phenomenon of the paradox of the regression of moral reasoning (Hren et al., 2011), an increase of decisions utilitarian and personalistic and the "waste" of ideals

socially and culturally acceptable. Marwell and Ames (1981) and later Carter and Irons (1991) come to similar results in relation to groups of students of Economics. The authors demonstrate that economists are different. In particular, they claim that the behavior of economists (specifically, students of economics) is more selfish/greedy or less pro-social compared to other social groups. There are two possible interpretations of this: the first, based on the idea of self-selection, which assumes that those most selfish/greedy choose to study economics rather than classical philology or other subjects; the second, based on the idea of learning, according to which an economics course makes students more selfish and greedy. Some measurements "before and after treatment" (i.e., before and after a standard course in microeconomics) seem to support the latter interpretation based on a "learning morally harmful" (Orsini, 2006).

The main aim of the present pilot study is to assess the moral sensitivity in university students of School of Economics compared to a matched sample of students of School of Psychology, to evaluate if people with interests in so different university training courses do present differences in moral behavior. Moreover, the research also takes into account the year of study: in each university population it will be considered both students at their first year and at their fifth year of study: in this way we aim at investigating the possible presence in these population of the phenomenon of the so-called 'regression of moral judgement', an event well described in medical students (Hren et al., 2011). Finally, independently by training course and by year of study, the weight of religiosity will be taken into consideration.

2. Methodology

2.1. Participants

Seventy-six students of Economics at Sapienza-University of Rome (38 at the first year of course and 38 at fifth year) voluntarily decided to participate to the study and were compared to a matched sample of students of Psychology at University of L'Aquila. The sample of participants at the first year of Economics was composed by 13 males and 25 females (mean age 19.57±0.95

years) while that of Psychology counted 19 males and 19 females (mean age 20.15±1.34 years). The sample of participants at the fifth year of Economics was composed by 21 males and 17 females (mean age 25.92±1.34 years) while the group of Psychology was composed by 13 males and 25 females (mean age 24.95±2.62 years).

2.2. Procedure

Each participant, after being fully informed about the study' objectives, completed a customized software (SuperLab 4.1 for Windows, Cedrus Corporation) aimed at evaluating their behavior in a situation of moral decision-making. The task presented a set of different moral dilemmas originarily proposed by Greene and coworkers (Greene et al., 2001, 2004) and recently used and validated also in the Italian context (Migliore et al., 2014). In each task trial participants were asked to answer to 20 moral personal, 20 moral impersonal and 20 non moral dilemmas, randomly administered by the SuperLab software. The moral personal dilemmas depict scenarios in which the participant behaves in a way that inflicts harm to other human beings by means of a his own explicit action: also if this action is aimed at good and positive purposes (i.e., to save someone else), these dilemmas have an higher emotional involvement. The moral impersonal dilemmas depict scenarios in which the participants do not induce damages to others with his/her actions but behaves in a non politically correct way (i.e., violating common and shared social rules): also these dilemmas have a relatively high emotional involvement. Finally, non moral dilemmas describe scenarios with a very low emotional involvement, since they do not violate neither moral rules nor standard of social cohabitation and cohesion. A list of the used dilemmas are available as Supplementary Material in a recent publication (Migliore et al., 2014).

Each scenario consisted of a brief written description of the above described fictitious dilemma: participants were asked to suggest whether the resolution of each dilemma was appropriate or inappropriate and the software recorded both the type of answer (appropriate vs. inappropriate) and the time needed to read the dilemmas (Reading time) and to respond to them (Answer time) measured in milliseconds. Type of answer, reading time and

answer time were then submitted to statistical analyses. During the whole administration they were sitting in front of a PC screen of 17", in a sound-proof, temperature-controlled and quiet room.

After this task each participant also filled in a paper-and-pencil psychological questionnaire to assess religiosity (*Salience in Religious Committment Scale-SRCS*; Roof, Perkins, 1975), since this dimension has been recognized as a possible covariate of moral judgment behavior.

2.3. Statistical analyses

Type of answer, time needed to read (Reading time) and to answer (Answer time) to the three types of dilemmas (Moral Personal, Moral Impersonal and Non Moral) measured in milliseconds were used as dependent variables and submitted to a Multivariate analysis of covariance (MANCOVA) considering as possible predictors level of Religiosity, Gender (Males Vs. Females), School (Economics Vs Psychology), Year (1st Vs. 5th). MANCOVA test was choosen because it allows to analyze data with more than one dependent variable and where it is mandatory controlling for some concomitant independent variables (the so-called "covariates").

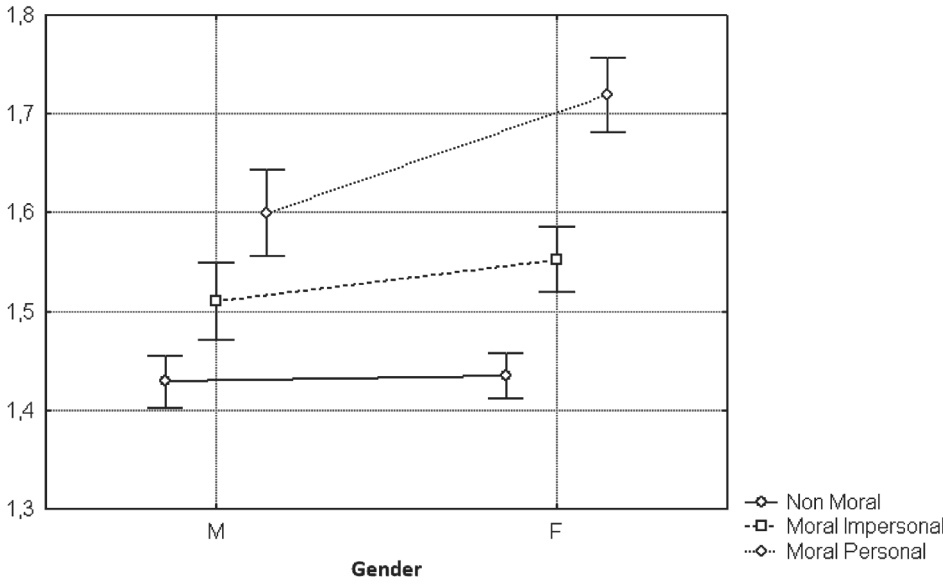
3. Results

3.1. Type of answer

The MANCOVA indicated a main significant effect for Gender ($F_{3,140} = 3.58$; $p = .015$) indicating a greater difference between males and females in the type of answer expressed, with females much more prone to claim about inappropriateness of those scenarios than males. This effect was particularly evident and statistically significant for both Moral Impersonal ($p=.009$) and Moral Personal dilemmas ($p=.0008$), as depicted in Figure 1.

No other main effects or interactions did result statistically significant.

Fig. 1 - Type of answer (mean values and standard deviation): gender differences in the answer to the three different types of dilemmas.



3.2. Reading Time

The MANCOVA on reading time indicated a main significant effect for Year of study ($F_{3,140}$ = 4.44; p = .005), indicating that independently by other variables, students at the 5th year are faster to read dilemmas and to decide to go by to the answering phase. This effect was statistically relevant mainly for Moral Personal dilemmas (p = .04), as depicted in Figure 2.

A trend toward the statistical significance was observed for Gender ($F_{3,140}$ = 2.44; p = .06), indicating that females tend to read for a shorter time the dilemmas compared to males.

Finally, another trend toward the statistical significance was observed for School ($F_{3,140}$ = 2.01; p = .08), indicating that Economics students need less time to read the dilemma and to go to the answer phase.

No other main effects or interactions did result statistically significant.

Fig. 2 - Reading time (mean values and standard deviation): academic seniority differences in the time needed to read the three different types of dilemmas.

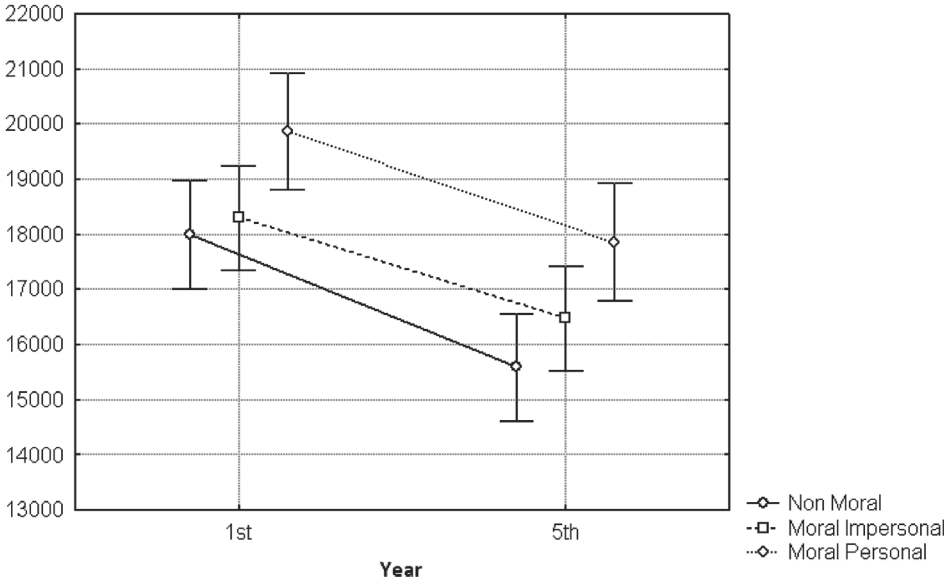
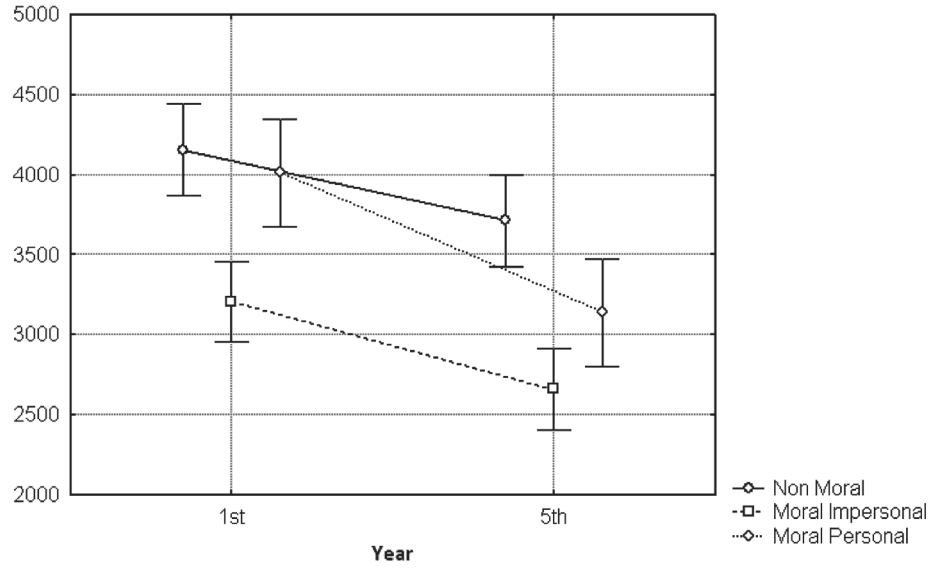


Fig. 3 - Answer time (mean values and standard deviation): academic seniority differences in the time needed to respond to the three different types of dilemmas.



3.3. Answer Time

The MANCOVA on answer time indicated again a main significant effect for Year of study ($F_{3,140}$ = 5.15; p = .002), highlighting that independently by other variables, students at the 5th year are faster to decide if that scenario is morally acceptable or not. This effect was statistically relevant mainly for Moral Personal dilemmas (p = .02) and Moral Impersonal dilemmas (p = .04), as depicted in Figure 3.

No other main effects or interactions did result statistically significant.

4. Discussion

The present study had as a main aim to assess the moral sensitivity in university students at School of Economics compared to a matched sample of students at School of Psychology, with the aim to test if different cultural interests can bring to different moral behavior. As a companion aim, we investigated the role of age and of academic seniority, by comparing in the two groups students at first and fifth year of study: this was aimed at testing the hypothesis of the regression of moral judgement, an event well known and described in medical students (Hren et al., 2011).

Present results indicate a generalized effect of gender and year of study, while type of study (i.e., school to which participants are registered) seems to arise only a small trend to statistical relevance.

More in depth, the analysis of type of answer, i.e. the evaluation concerning the appropriateness of the action depicted in each dilemma, showed a significant differences for gender, indicating a sharp difference between males and females in the type of answer expressed. Females, in fact, showed to be more predisposed toward a claim of inappropriateness of those scenarios than males. As showed in Figure 1, the difference between males and females was exacerbated in both types of Moral dilemmas (Impersonal and Personal). Conversely, in case of Non Moral scenarios males and females behaved in the same way.

Regarding the time needed to read each dilemma (Reading time), a significant effect for year of study has been observed.

This effect indicated that students in their 5th year tend to spend less time in reading dilemmas and thus they decide quickly to pass immediately to the answering phase. This effect was very similar for all kind of dilemmas, even if a statistical significance was reached for Moral Personal ones. The analyses on Reading time also showed some statistical trends toward the significance. In this regard, females showed a tendency to read for a less time the dilemmas with respect to males, and the same effect of shortening of time needed to read the dilemma was observed in Economics with respect to Psychology students. In both these cases, it seemed that females and students of Economics showed to be readier to answer to the dilemma requested.

Finally, with respect to the time spent in responding to dilemmas (Answer time), the only significant effect was again about year of study. Here data indicated that students at the 5th year are faster to decide (and to answer) about the moral appropriateness of the scenario depicted in the dilemma. Again, such an effect was more evident in both the types of Moral dilemmas (Impersonal and Personal) compared to Non Moral ones.

These results confirm some effects already known in the literature, and suggest some newly observed differences between samples under investigation.

As a first, the progressive increase in time of response from Non Moral to Moral Impersonal and Personal dilemmas is consistent with previous literature (Greene et al., 2004; Migliore et al., 2014). Present findings may reflect a conflict between deontological rules and cognitive control of problem solving: processes of deciding and answering take a longer time in the moral vs. non-moral conditions because the involved emotional status is much stronger and can intensify this conflict.

Secondly, we can identify an effect of academic "ageing", with students at the end of their university training much more inclined to decide in an utilitarian way, reading and answering faster than younger students. Strikingly, this effect does not seem a general consequence of academic seniority, since it is emphasized in moral dilemmas compared to non moral ones, and in personal compared to impersonal ones. This curious effect could be explained on the basis of difficulty to cognitively and emotionally manage situations such those depicted in moral dilemmas. Students who read those scenarios seem to feel an impelling urgency

to answer and go ahead, in order to solve as soon as possible these very engaging requests.

This "carry on effect" was intimately linked to the trend toward a statistical difference seen when students of different schools are compared. Independently by the absence of statistical significance (see below the discussion on limitations of the study) it should be stressed that the effect of shorter dilemmas' reading times is clearly observable in Economics students with respect to Psychology ones. This result is very intriguing because could confirm previous data about the increased utilitarian and personalistic decision in some individuals. As briefly discussed in the Introduction, some authors still claimed about the existence of a possible "behavioral fingerprint" of students in Economics (Marwell and Ames, 1981; Carter and Irons, 1991). The present study could be the first confirmation of the hypothesis put forward and partially demonstrated in an Italian study (Orsini, 2006), according to which an economics course makes students more selfish and greedy, hypothesizing an educationally unfair learning in some training courses, such as Economics.

Finally, gender differences observed in this pilot study deserve some remarks. Here females showed to be 1) faster in deciding what is morally appropriate and what is not, and 2) basically predisposed to judge as inappropriate the moral dilemmas. This finding supports the idea that females are less inclined to make utilitarian choices, trying to avoid putting others at risk of danger or harm, maybe due to the fact that they could be mainly driven by emotions, empathy and care for others, following the so-called ethics of care, while males could tend to solve moral dilemmas following law and order rules, according to an "ethics of justice" (Gilligan, 1982). On the other hand, these gender-related differences could be connected to differences in empathic ability, which make females more resistant to decisions that entail directly inflicting physical or moral pain to other individuals, despite their utilitarian value (Baron-Cohen and Wheelwright, 2004). These differences could depend on different neural circuitry, hormonal influences, and cognitive structure of females when engaged in moral decision making (a brief review in Migliore et al., 2014).

Nonetheless, the present study has some limitations. One is related to the limited sample size: a higher number of participants could have given the possibility to show other effects or interac-

tions between factors under investigation and to reach level of significance for those effects that just showed a trend to statistical significance. Thus, in the following it would be interesting to enlarge the number of participants for each group and subgroup, trying if possible to match and balance them for gender composition. Another possible limitation is related to comparison between only two types of academic training: also if career in Economics and Psychology are ideally deeply different, it would be interesting to include in the study also students of care professions (Medicine, Nursing), "hard" sciences (Biology, Chemistry, Physics), technical courses (Informatics, Engineering) or "soft" sciences (Sociology, Philosophy). This could allow a direct test of the hypothesis that moral sensitivity is the base of work-and-life choices (the idea of self-selection), or that the experience we do during our life bring to some particular learning(s) that consequently orient and drive our behavior. Finally, it should be borne in mind that the two compared sample come from different universities and socio-cultural realities: comparing people living in a metropolis (Roma) and in a relatively small town (L'Aquila) could account for possible differences in the moral judgment.

In conclusion, the present study shows that mainly gender and academic seniority can drive moral decision making, while the fact to be registered to some academic training courses can probably indirectly modulate this behavior. Future studies need to be specifically designed to investigate more in depth these differences and to clarify the presence of possible psychological factors able to predict and/or modulate the complex behavior of decision making in case of moral dilemmas.

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