

OPINION

Prepared by prof. Stanislava Yordanova Stoyanova, PhD, South-West University "Neofit Rilski",
Department of Psychology
for acquiring the scientific degree "PhD" in professional field 3.2. Psychology
PhD student: Veselina Hristova Kadreva
thesis titled "Moral judgment and emotions: research using bio-indicators"
Scientific supervisor: prof. Dr. Maurice Grinberg

This PhD thesis attempts to answer the question of the extent to which moral judgment is influenced by emotions based on some bio-indicators (skin conductivity, eye-tracking, response time). Moral judgment influences on the decisions and behaviors of people in different spheres of life, which reveals the importance of the studied issues.

In the introduction of the PhD thesis, the doctoral student justifies the relevance and significance of the topic. She also enumerates some models for moral judgment existing in the scientific literature, according to which it is guided either primarily by rational judgments, or primarily by emotions, or equally by the interaction of rational arguments and emotions, as well as some models specifying some conditions under which emotions or rationality take precedence in moral judgment. In addition, the PhD student presents some ongoing studies that allow technology to investigate the role of emotions in making moral judgments. The introduction also describes the structure of the dissertation.

The following sections of the dissertation refer to moral dilemmas and some factors that influence their resolution (presence or absence of physical contact, application or not of one's own force, inevitability of death, whether the infliction of harm is a consequence or a purpose, intentionality or inadvertence of harm, cultural differences, perspective of the first or third person, type of harm – physical or related to violation of social norms, the type of relationship between the participant and the potential victims – relatives or not, whether the person making the assessment is a bystander or is directly affected, etc.). Various approaches to studying preferences for solving moral dilemmas are described, which demonstrates the good knowledge of the doctoral student of the existing scientific concepts and the possibilities for conducting scientific research on this phenomenon.

Special attention is paid to the role of emotions in moral judgment, examining the two-process theory of moral judgment. Some previous studies on emotional processing of stimuli and the influence of momentary emotional state on moral judgment, including in foreign-language stimuli in bilinguals, are described. The results from some previous studies on the relationship between moral judgment and gender, cognitive control, affective sensitivity, personality traits (empathy, psychopathy, narcissism) are also presented. The PhD student demonstrates knowledge of scientific achievements in the field studied so far.

In a separate section, attention is paid to some factors that influence the results of experiments related to moral judgment, namely the style of expression of the researcher, the number of words used, the participants' certainty that events would have unfolded exactly in the way described by the researcher, the habituality and familiarity of the harm done, the effect of the framework (for example, focus in formulating a question on rescue or harm), the type of question asked (dichotomous, response rates, expression as a condition or prohibition, etc.). In this regard, it should be noted that not all possible factors that influence the results of experiments related to moral judgment have been considered, since the importance of the ability to self-examine and verbalize one's reasoning and states, as well as sincerity in answering, is not commented.

Based on a review of some previous studies on moral judgment, a series of three experiments is planned by the doctoral student in order to overcome some shortcomings of previous research and come to new scientific knowledge. The PhD student examines the influence of factors "the presence of physical contact in case of infliction", "inevitability of death" (in a first-person and third-person expression/perspective), «instrumentality of the damage done» (the harm is intentionally done to save other endangered participants in the scenario, the harm is not a side effect of other actions aimed at saving others) and pre-induced specific emotional states (amusement, disgust, fear and sadness) on the moral judgment, as well as whether and to what extent it is permissible to act in a way described in the situations with moral dilemmas. Influencing moral judgment by emotions when reading moral dilemmas is established by registering response time, skin conductivity, and eye tracking.

In the first experiment with 73 participants and first-person moral dilemmas, seven hypotheses were formulated that: in situations where death was caused by physical contact, there was expected to be a stronger emotional response compared to dilemmas without physical contact (Hypothesis 1, which is refuted, the opposite is observed); in situations where death is caused by physical contact, the action is expected to be perceived as less permissible from a moral point of view, compared to dilemmas without physical contact (Hypothesis 2, which is confirmed); moral judgement in physical contact dilemmas will be made more slowly than in dilemmas without physical contact (Hypothesis 3, which is refuted, no statistically significant differences were observed); if achieving greater benefit for more people requires the sacrifice of a person whose death is imminent, whether the act will be committed or not, then the action is perceived as more acceptable compared to situations where the same action would lead to the sacrifice of a person whose death could be avoided (Hypothesis 4, which is confirmed); it is expected to be less emotional response to dilemmas, in which the death of the sacrificed person is inevitable (Hypothesis 5, which is refuted, the opposite is observed); when the death of the sacrificed person has an instrumental purpose of being used as a means of saving others, the action is considered as less permissible (Hypothesis 6, which is confirmed, especially when death can be avoided); the emotional response is stronger when death is elicited for instrumental purposes (Hypothesis 7, which is refuted, no statistically significant differences were observed). These seven hypotheses checked in the first experiment, they could be summarized in fewer hypotheses, especially when the information in them is logically related to each other, as, for example, the hypotheses 1, 2 and 3 could be combined into one hypothesis, as well as hypotheses 4 and 5, as well as hypotheses 6 and 7.

In the second experiment with 40 participants and third-person moral dilemmas, five hypotheses were formulated that: when death is caused by physical contact, there is expected to be a stronger emotional response compared to situations without physical contact (Hypothesis 1, which is refuted, no statistically significant differences were found); when death is caused by physical contact, the action is expected to be perceived as less permissible from a moral point of view compared to dilemmas without physical contact (Hypothesis 2, which is confirmed); judgement in dilemmas with physical contact will be made more slowly than in those without physical contact (Hypothesis 3, which is refuted, no statistically significant differences were found); if achieving greater benefit for more people requires the sacrifice of a person whose death is inevitable, then doing harm is perceived as more acceptable compared to situations where the same action would lead to the sacrifice of a person whose death could be avoided (Hypothesis 4, which is confirmed); it is expected to be a weaker emotional response to dilemmas in which the death of the person sacrificed is inevitable (Hypothesis 5, which is refuted, no statistically significant differences were found).

In the third experiment with 307 participants and pre-induced emotional states and first-person moral dilemmas, five hypotheses were formulated that: amusement will result in a greater number of "admissible" responses, higher eligibility scores, and lower guilt scores in dilemmas with personal contact, but not for those without physical contact (Hypothesis 1, which is not confirmed, in fact, in amusement, moral judgments of eligibility were rarer, in physical contact guilt scores were higher); when inducing disgust and fear, an increase in the intensity of the negative reaction is expected in dilemmas with personal contact, which will lead to a lower number of "permissible" responses, lower eligibility scores and higher marks for guilt, in dilemmas with personal contact, but not for those without physical contact (Hypotheses 2 and 3, which are partially confirmed, there were no statistically significant differences in judgement of admissibility, but the assumption about higher guilt scores in the personal contact dilemmas was confirmed); when inducing sadness, a lower number of "admissible" responses, lower eligibility scores, and lower guilt scores are expected (Hypothesis 4, which is not confirmed, there were not any statistically significant differences in judgment of admissibility, and the guilt scores were higher in personal contact dilemmas); the participants' tendency to imagine certain emotionally charged pictures from the scenarios is expected to be related to the judgment, according to whether the pictures that they imagine evoke positive or negative emotions relative to the utilitarian action (Hypothesis 5). The doctoral student specifies for the fifth hypothesis that if the participants imagine one person who will die, it will cause a negative reaction to the utilitarian act and it would lead to lower eligibility scores, but if the participants are more likely to imagine the

five people who will die or the five people who will survive, they would be more likely to give higher eligibility scores to the utilitarian action (which is confirmed).


I consider the wording of the fifth hypothesis in the third experiment vague, insufficiently precise. I consider imprecise the formulation of two hypotheses in one sentence, without clearly distinguishing which part of the sentence applies to which hypothesis, as is the case with Hypothesis 2 and Hypothesis 3 in the third experiment (see page 109 of the dissertation). I recommend that the PhD student specify for each hypothesis raised in each experiment whether it is confirmed, or not. I recommend, even when there is no statistically significant difference, no main effect of a factor, no correlation between variables, in a doctoral thesis to be reported the statistical coefficient, especially for conclusions concerning the hypotheses (see, for example, pages 89-90 of the dissertation, where there is no statistical coefficient supporting the conclusion made). I recommend that the PhD student indicates the sources she has used to compose the text of every moral dilemma in her experiments. I recommend that the PhD student indicates a bibliographical reference for every video material freely available on YOUTUBE used for inducing the emotions in the third experiment. Also in some parts of the text the expression is inaccurate and it is not understood what the doctoral student wants to say – for example, on pages 19-20 «The authors found that a greater number of participants considered *non-personal* dilemmas morally permissible compared to *non-personal* ones». I also recommend quoting more Cyrillic sources, not just 3 out of 145 bibliographic sources.

I accept the seven scientific contributions of the dissertation formulated by the doctoral student, which she has outlined into methodological, empirical, and theoretical.

The Abstract in Bulgarian corresponds to the content of the dissertation. Although only two independent publications of the PhD student are listed in the Abstract, her CV lists more of her publications that show that she has the required number of points in accordance with the national minimum requirements for acquiring the Ph.D.

The PhD thesis is dedicated to an important scientific research problem. There is correspondence between the selected methods of research and the goal of the PhD thesis. The PhD student demonstrates a good knowledge of the studied issues, good skills for statistical processing and presentation of the results, which gives me grounds for a positive assessment of this PhD thesis, despite some omissions mentioned in this opinion. I support the acquisition of the scientific and educational degree "PhD" by Veselina Kadreva.

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Signature.....
Prof. St. Stoyanova