

Intermediary scientific report on the implementation of the project
„Emotions and morality: the influences of emotion regulation strategies on moral judgments”,
acronym ESMISDREAJM Project type: PN-II-RU-TE-2014-4-2872, Contract number:
155/01.10.2015
during October 2015 - December 2016

The general aim of the project is to investigate the influences of emotion regulation on moral judgments and to analyze the differences between the effects of two major emotion regulation strategies (reappraisal and suppression) in this respect, as well as the cognitive, motivational, affective and embodiment – related mediators and moderators of these effects. The project proposes four studies, one correlational and three experimental studies. During October 2015 - December 2016 we undertook two categories of activities: preparation of the theoretical framework and research materials, and the implementation of empirical studies.

Specifically, the activities in the first categories were:

1. literature search and review in order to update the set of studies used as bibliographic material on which the theoretical background of the four studies would be built, by including the publications issued after December 2014.

2. the analysis of these publications in order to identify the theoretical models relevant for the area of emotion regulation and moral judgment, the research designs used in the empirical studies in this new set, and the materials and instruments employed in these studies.

3. the selection and translation of the psychological evaluation instruments that will be used in the four empirical studies, targeting: the strategies of emotion regulation (Emotion Regulation Questionnaire - Gross & John, 2003), the use of experiential suppression (Acceptance and Avoidance Questionnaire - Hayes et al., 2004), sensitivity to bodily indexes (Miller et al., 1981) etc.

4. the selection, adaptation, preparation and pilot-testing of the materials targeting moral evaluations and decisions (moral scenarios and dilemmas).

The research activities in the second category concern the implementation of the four studies described in the project proposal. Specifically, they are the following:

Study 1. Correlational research on the associations between emotion regulation and two major types of moral judgment (moral appraisals and moral decisions)

The aim of this study was to check the associations between the tendency to regulate emotions respectively the preferred emotional regulation strategies and the two major types of moral judgment: moral appraisals and moral decisions. The research sample included 243 participants. The instruments used for investigating the variables from the emotional regulation area were the Affective Control Scale (Berg et al., 1998), which refers to people's tendency to regulate their emotions, the Emotion Regulation Questionnaire (Gross & John, 2003), which appraises the degree to which subjects use expressive suppression or reframing, and the Acceptance and Avoidance Questionnaire (Hayes et al., 2004), which refers to the use of experiential suppression. Moral judgments were investigated through participants' appraisals severity of the moral transgressions described in nine scenarios. In order to build a more complex examination of the effects of emotion regulation on moral judgments, the moral principle infringed upon in this set of scenarios was included as independent variable. Specifically, we scenarios we developed presented transgressions of purity, justice and harm avoidance, respectively. Moral decisions were investigated through participants' choices in a trolley-type moral dilemma. The content of the dilemma was varied between participants, thus corresponding to a specific level of another independent variable that reflects the degree of personal force and spatial proximity (Greene et al., 2009) that characterizes agent the situation opposing the utilitarian principle to the deontological one.

Study 2. Experimental research on the moral contamination phenomenon generated by emotion suppression

The aim of this study was to experimentally investigate two possible influences mediated by the reduced capacity of emotional differentiation under the impact of the repeated use of suppression. The first idea tested is that suppression allows a stronger contamination of the moral evaluations by incidental emotions (which should be irrelevant for the moral judgment). The other is related to the specificity of the moral emotions; the tested hypothesis is that emotional suppression, in virtue of the same effect of attenuating the capacity for emotional differentiation, is associated with a lower specificity of moral emotions, namely with a higher degree of

judgment contamination in relation to a certain moral principle with emotions that are specific to another principle.

The research sample of this 3 x 3 experimental design included 271 participants. All instruments and manipulations were presented in the Inquisit 4.0 experimental software. Participants filled in the Identifying Feelings subscale from the Toronto Alexithymia Scale – 20 (Bagby, Parker, & Taylor, 1994), the Clarity of Emotions subscale from the Trait Meta-Mood Scale (Salovey et al., 1995) and the Private Body Consciousness subscale from the Body Consciousness Questionnaire (Miller et al., 1981), the Emotion Regulation Questionnaire (Gross & John, 2003), and the Acceptance and Avoidance Questionnaire (Hayes et al., 2004). Then, they watched an emotion – eliciting video, inducing either sadness, disgust or no affect (the control condition). Their current emotions were then assessed. Finally, they were asked to evaluate the severity of the moral transgressions described by four scenarios, two relevant for the moral principle of purity and two for justice, and to make a decision in one of the three variants of a moral dilemma, corresponding to the independent variable also manipulated in the first study.

The data collected in these two studies were analyzed, and the manuscript presenting them is under preparation to be submitted to an impact – factor ISI journal by the end of 2016.

Study 3. Experimental research on the “moral rebound” effect generated by emotion suppression

The aim of this study was to examine the effects of two emotional regulation strategies (suppression and reframing) on the appraisals of moral transgressions, not only on the moral judgments made during the regulation, but also on the subsequent ones, testing a hypothesis derived from the phenomenon of the subsequent reoccurrence of suppressed emotions, namely that emotional suppression (especially the experiential one) extends the influences of the initial emotion on moral judgments.

The research sample included 121 participants. All instruments and manipulations were presented in the Inquisit 4.0 experimental software. Participants filled in the Body Consciousness subscale from the Body Consciousness Questionnaire (Miller et al., 1981), and then their emotion regulation strategy to be used when confronted with the next emotional materials was manipulated. Then, they were exposed to a scenario presenting a transgression of the principle of

purity and they were administered a task of moral evaluation of the scenario, one of emotion evaluation (Schnall et al., 2008), and a scenario detail memory test (Gross, 2002). Then, they were administered a set of filler items and after the respective period they were asked to appraise other two scenarios, one relevant for the moral principle of justice and one for purity, their order of presentation being counterbalanced.

The data collected in this study were analyzed, and the manuscript presenting this research is under preparation to be submitted to an impact – factor ISI journal by the end of 2016.

Study 4. Experimental research on the differences between cognitive reappraisal and suppression in what regards the decisions in moral dilemmas

This study aims to identify the differences between suppression and reframing in relation moral decisions, by verifying the degree to which the differences of efficiency in the attenuation of the emotions between these strategies extend in the area of moral judgments. It also analyzes the potential mediation of these decisional effects by the distinct cognitive and motivational consequences of the two emotional regulation strategies.

This research is currently under way, and the estimated total number of participants is 120. In this experimental design, the emotional regulation strategy to be used by participants when confronted with the next emotional materials is firstly manipulated. Then, they are requested to make a decision in a set of three dilemmas, selected and adapted from the category of high conflict dilemmas (Greene et al. 2008). Then, they are administered a scenario detail memory task (Gross, 2002), testing the possible mediation of the effects of emotion regulation strategy on moral decisions by the cognitive interferences generated by emotional regulation strategies. The time elapsed between reading the dilemma and making a decision (Muraven et al., 1998) will also be included in the mediation analysis, thus testing a motivational mediation, through participants' disengagement from the decisional task, which some studies have shown in the case of suppression.

The manuscript presenting this research will be submitted to an impact – factor ISI journal by April 2017.

We also extended the thematic focus of the project by developing studies in connected fields, which can be grouped in the following thematic areas:

a) Emotion regulation and moral judgments in driving – the studies we developed in this area are:

a1. Emotion regulation strategies as moderating the influence of driving anger on aggressive behavior

The link between traffic anger propensity and dysfunctional behaviors has been long attested (e.g. Deffenbacher, Richards, & Lynch, 2004; Deffenbacher, Lynch, Oetting, & Yingling, 2001). Furthermore, in a recent meta-analysis, driving anger has been shown to have important consequences such as aggressive behavior and accident involvement (Zhang & Chan, 2016). Given the consequences of aggressive behavior in traffic, we investigated the role of habitual emotion regulation of drivers in decreasing or increasing aggressive tendencies. A convenience sample of 314 Romanian drivers participated in this study. We measured different types of emotion regulation strategies, both antecedent and response focused strategies, driving anger, and aggressive propensity. Results showed that aggressive tendencies were higher when drivers reported higher levels of anger and a habitual way of suppressing emotions.

The study was reported in a paper - Popușoi, S., & Holman, A. *Driving anger and aggressive tendency: the moderating role of emotion regulation strategy*. – accepted in the BDI journal (indexed in EBSCO, among other international databases) *Bulletin of the Transilvania University of Brașov, Series VII: Social Sciences & Law*.

a2. Moral disengagement of behaviors violating traffic rules

Traffic norms violations are the most common form of law breaking, and drivers who break traffic norms frequently are more likely to be involved in traffic crashes. Our aim was to investigate a factor that might contribute to the massive disobedience to traffic laws, namely drivers' use of self-legitimization strategies that allow them to transgress them without paying the psychological costs that would follow, such as regret or shame. Applying the framework of the social cognitive theory, we developed a measure assessing these strategies, which function as mechanisms of moral disengagement from drivers' internal control of rule - violating behaviors. We investigated the type of moral reasoning drivers had when breaking traffic rules through semi-structured interviews on 70 drivers. A new instrument was designed that taps into different

moral justifications drivers use when violating traffic norms and its factorial structure was examined in a sample of 382 drivers. Further, driving styles and traffic outcomes, such as accident involvement and traffic offences, were assessed in a sample of 325 drivers. Across these studies, we tested the psychometric proprieties of the Driving Moral Disengagement scale (DMDs), its factorial structure, and its construct, external and incremental validity. Results show that drivers self-exonerate when transgressing traffic laws predominantly through four cognitive mechanisms (Minimizing risks, Displacement of responsibility, Personal needs and Outcome – based justification) that are addressed by the DMDs and that construe the internal control of deviant driving behaviors as unnecessary, impossible or undesirable. Results also attest to the reliability and validity of the scale and its factors.

The paper reporting this research – Holman, A., & Popușoi, S. *Avoiding blame when violating traffic rules: the development and validation of the Driving Moral Disengagement scale and its associations with maladaptive driving styles, traffic offenses and accidents* – is under review in the ISI journal *Accident Analysis & Prevention*.

a3. Emotion regulation of traffic anger through swearing

In a recent meta-analysis on the efficiency of different emotion regulation strategies, the acceptance and expressing of emotions were found to be effective in decreasing negative affect (Webb, Miles, & Sheeran, 2012). One way of expressing strong negative emotions, such as anger, or frustration, is the use of swear words. Their primordial utility is the ability to express negative emotions (Laskowski & Morse, 1993; Jay, 2009); other studies revealed social uses of swear words such as to draw attention upon misbehaviours (Pinker, 2007), to express discontent (Daly, Holmes, Newton, & Stubbe, 2004) or to strengthen arguments (Rassin & Murriss, 2005). Given that swearing was found to facilitate coping with pain (Stephens, Atkins, & Kignston, 2009; Stephens & Umland, 2009), we explored the role of swearing in traffic context. We developed an experimental study to investigate if swearing in anger-inducing traffic scenarios leads to a decrease in negative affect, as measured through affective valence and physical activation. In the final study, 262 drivers were randomly assigned in one of the three experimental conditions. Results showed that in specific traffic conditions, the use of swear

words as a form of expressing strong negative emotions may be used as an effective emotion regulation strategy.

The paper reporting this research – Popușoi, S., Havârneanu, G., & Havârneanu, C. *Get the f#*k out of my way!*” Exploring the cathartic effect of swear words in coping with driving anger – is under review in the ISI journal *Transportation Research Part F: Traffic Psychology and Behavior*.

a4. Negative emotions and behaviors and their bodily markers

We developed a metaanalysis on the specific topic of the relation between prenatal exposure to testosterone and maladaptive behaviours. Digit ratio is considered to be a punitive marker of prenatal exposure to testosterone and it has been stated that it is related to maladaptive behaviours in adult life, such as risk taking (Apicella et al., 2008; Coates et al., 2009; Ellis & Hoskin, 2015; Lam & Ozario, 2014; Schwerdtfeger, Heims, & Heer, 2010; van Honk et al., 2004), aggression or dominance, both social and physical (Bailey & Hurd, 2005; Butovskaya et al., 2012; Hönekopp & Watson, 2011; Lemaster & Strough, 2014). Following the PRISMA statement (Moher et al., 2009), we selected the studies that reported correlational coefficients between digit ratio and aggression. Further, the samples were analysed using multiples moderators, both dichotomous and continuous. Results were in line with previous findings and supported the idea of digit ratio as being an indicative of adult maladaptive behaviour.

The paper reporting this research – Popușoi, S., Havârneanu, G., & Havârneanu, C. *Get the f#*k out of my way!*” Exploring the cathartic effect of swear words in coping with driving anger – is under review in the ISI journal *Aggression and Violent Behaviour*.

a5. Ethical ideology and maladaptive driving styles

Ethical ideology, based on one’s degree of idealism and relativism, was found to be related to many dysfunctional behaviors (Forsyth, 1980; 1992; Dickey, 2015; Lichtenberg et al., 1993). The degree to which individuals concern for the welfare of others and believes that universal rules should always be applied shapes one’s ethical ideology. To this point, the influence of personal ethical ideology in traffic circumstances was only investigated by Bailey, Lennon and Watson (2016). Their study revealed that driver’s ethical ideology influenced both driving anger and aggressive driving response. We presumed that ethical orientation has a larger

influence on drivers' behavior and that it may be an important factor of the development of one's driving style. A number of 313 Romanian drivers participated in this study. After assessing ethics position, personal driving style, and driver's behavior, results showed that some ethical ideologies are significantly related to dysfunctional driving style and lead to more contra normative traffic behaviors.

The manuscript presenting this research will be submitted to an impact – factor ISI journal by April 2017.

b. Emotions and the perception of environmental hazards

In the last years, the terrorist threats on critical infrastructures (i.e., those physical and information technology facilities networks, services and assets) in several European Community countries have increased. As a result, distrust, and economic and psychological effects posed a heavy effect on society (Lazari, 2014). Nowadays, public crowded places such as shopping places have become new targets for terrorist attack. During such events, fear is the dominant emotion (Grimm, Hulse, Preiss, & Schmidt, 2014), but previous findings suggested that individual's panic does not overtake the rational behavior (Helsloot & Ruitenberg, 2004) and that the typical response to a crisis situation is affiliation (Mawson, 2005). We developed an experimental study by manipulating the crisis type (terrorist attack, fire, and earthquake) described in a scenario, and group affiliation (in-group vs. out-group). 249 students were randomly assigned to one condition and various individual factors, including behavioural intention and threat perception were assessed. Results indicated that individuals preferred an affiliative response in all crisis type, and various individual factors predicted this kind of crisis response behavior.

The paper reporting this research – Popușoi, S., Mairean, C., & Havârneanu, G. *Behavioral intentions and threat perception during terrorist, fire and earthquake scenarios* – was accepted in the ISI journal *Lecture Notes in Computer Science*.

c. Moral judgments and similarity

This study investigated the effects of similarity with the transgressor and the victim on the perceived immorality of the transgression. Participants read two stories describing a person that cheated on their partner and a police officer that mistreated somebody. In the first story we

manipulated participants' personal similarity to the transgressor and in the second their personal similarity to the victim. In each story, participants' past situational similarity to the target character was assessed according to their previous experiences of being in the same position. Results show that both personal and past situational similarity to the transgressor determine less severe moral judgments, while personal and past situational similarity with the victim have the opposite effect. We also tested several potential mediators of these effects, derived from competing theoretical accounts of the influence of similarity on perceived responsibility.

Previous research on the effects of personal similarity on the perception of harmful actions has focused on the attributions of blame on the two scenario protagonists (Shaw & McMartin, 1977; McKillip & Posavac, 1975; Shaver, 1970; Lowe & Medway, 1976) while its potential influence on the moral judgments of the transgression has been neglected. Moreover, the analysis of the mechanisms by which personal similarity affects responsibility and blame has been limited to the examination of the perception of the victim as mediator of these effects. Our study extended this framework by testing the role of several potential mediators derived from the main theoretical explanations of the previously documented effect of similarity on attributions of responsibility, which suggest that personal similarity to both the victim and the transgressor might influence the perception of the transgression by increasing situational relevance, empathy, and sympathy. Moreover, while previous studies only took into account the personal similarity that people perceive between themselves and the scenario protagonists, we also tested the influences of a different type of similarity, which emerges from the participant having been placed in a similar situation in the past, either as transgressor or as victim. We developed an experimental research on 100 participants in which we examined participants' moral judgments and relevant psychological reactions that might explain them in two scenarios. In each, personal and past situational similarity to one of the protagonists (i.e. victim and transgressor) was manipulated, respectively assessed. Results show that both personal and past situational similarity to the transgressor determine less severe moral judgments, while personal and past situational similarity with the victim have the opposite effect. We also tested several potential mediators of these effects, derived from competing theoretical accounts of the influence of similarity on perceived responsibility.

The paper reporting this research – Holman, A., & Pascal, E. *Similarity and judging right or wrong* – is under review in the ISI journal *International Journal of Psychology*.

d. Embodiment and change detection

Embodiment is a fundamental dimension of emotional experiences, and its effects on cognitive processing are a major field in the contemporary psychological research. We developed an experimental study focused on the embodied cognition effects in the area of change detection. We examined the effect of simulation implied by sentences, using the sentence-picture verification paradigm (Stanfield & Zwaan, 2001; Zwaan & Pecher, 2012) in a complex visual task. Specifically, we examined the effect of sensorimotor simulation (the orientation of the object) induced by a preceding sentence on the detection performance in a change detection task, using the flicker paradigm. We expected to find a facilitation of change detection, in terms of accuracy and response time, when the object that is under change has the same orientation as the orientation implied by the sentence presented previously, and a reduction effect when the object that is under change has a different orientation as the orientation implied by the sentence presented previously. Using Inquisit 4.0, 39 participants were administered a visual attention task in which they had to read each sentence carefully and then to detect as soon as possible if a change occurs. The sentences were created similar to the materials used in Stanfield and Zwaan (2001), and were 60 filler sentences and 60 sentences that would induce the simulation of a specific spatial orientation (30 implying a vertical orientation and 30 implying a horizontal orientation). After the sentence disappeared, participants had to detect a change or a non-change in a flicker display of six objects, randomly placed around an imaginary circle. Thirty images were rotated on their vertical axis to produce 30 experimental items with a vertical orientation, 30 images with horizontal orientation and 30 images with a 45° orientation; other 30 images were rotated to produce only a 45° orientation. The 45° orientated images were used as filler. Results show that the sentence induced perceptual simulation of the objects that are replaced across displays function as a facilitating factor of the speed with which the change is detected.

The paper reporting this research – Gîrbă, E., & Holman, A. *The match in orientation between verbal context and object accelerates change detection* – is under review in the ISI journal *Current Psychology*.

e. Moral judgments and embodiment

We developed an experimental study on the effects of a specific bodily experience with psychological consequences on moral judgments, in relationship with the influence of physical disgust on the same type of judgments. Previous findings show that disgust (Wheatley & Haidt, 2005; Horberg, Oveis, Keltner, & Cohen, 2009; Schnall, Clore, Haidt, & Jordan, 2008) and cleanliness (without any other incidental emotion; Zhong, Strejcek & Sivanathan, 2010) increase the severity with which moral issues are judged, and that incidental disgust followed by a cleansing behavior reduces the severity of moral judgments (Schnall, Benton & Harvey, 2008). Using a 2 (disgust: induced vs. not induced) x 2 (cleansing behavior: cleaning vs. not cleaning) experimental plan we tested if the cleansing behavior enhances the use of emotion regulation strategies when incidental disgust is manipulated, and enhances self image in the absence of incidental disgust (or other emotions) in moral judgments. We manipulated the incidental disgust as manipulated through the use of video material, and then participants rated their current emotions. The cleansing behavior was manipulated through an olfactory evaluating task of an antiseptic gel with which participants had to clean their hands. The use of emotion regulation strategies was assessed from the moment they entered the room they were in, and not in general. They indicated again their emotional experience at the moment and then they were asked to rate 14 social issues with moral relevance, and finally their self image was assessed through social comparisons (Zhong, Strejcek & Sivanathan, 2010). We expected to find a reduction of disgust and an increase of at least one emotion regulation strategy in participants who washed their hands versus those who didn't, and an increase of self image in participants who washed their hands but weren't exposed to incidental disgust.

The manuscript presenting this research will be submitted to an impact – factor ISI journal by February 2017.

Conference presentations

The studies conducted in the project were disseminated in 4 conference presentations, 2 in national conferences and 2 in international conferences, as follows:

Presentations in national conferences:

Holman, A. *Emotion suppression and moral judgment*. International Conference on Applied Psychology 6th Edition, Iasi 22-24 Oct. 2015.

Holman, A., Popușoi, S. *Driving anger and aggressive tendency: the moderating role of emotion regulation strategy*. International Conference of Psychology, From Individual to Society – Applied Psychology for a Sustainable Community, Brasov, Romania 22-23 September 2016.

International conferences:

Pascal, E. *The Influence of Emotional Regulation Strategies on Moral Evaluation*. 10th Annual International Conference on Psychology, Athens, Greece, 23-26 May 2016

Popușoi, S., Măirean, C., Havârneanu, G. *Behavioral intentions and threat perception during terrorist, fire and earthquake scenarios*. The 11th International Conference on Critical Information Infrastructures Security, Paris, France, 10-12 October 2016

We also made the changes required by the reviewers of the journal to which we submitted a paper in 2015. The article was accepted and published: Holman, A., & Pascal, E. (2015). Emotion regulation and moral judgment: future avenues of research. *Psihologia Socială*, 36, 75-88.

Our research activities and dissemination results so far are can be synthesized as follows:

- 13 studies conducted
- 1 paper accepted in an ISI journal
- 2 papers in BDI journals (1 published, 1 accepted)
- 5 papers under review in ISI journals
- 5 papers in preparation, to be submitted to ISI journals
- 4 conference presentations (2 in international conferences, 2 in national conferences)

Date

23.10.2016

Project manager

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