

## PERSONAL VALUES, MORAL DEVELOPMENT, AND EMOTIONAL INTELLIGENCE IN THE REGULATION OF CHOICE IN SITUATIONS THAT INVOLVE INTERPERSONAL INTERACTIONS

**T.V. KORNILOVA, I.A. CHIGRINOVA**



Kornilova Tatiana V. — Professor at the Chair of General Psychology, Lomonosov Moscow State University, Department of Psychology, Moscow.

Research interests: reasoning, intelligence, personality, methodology of psychology, experimental psychology, measurement.

Contacts: tvkornilova@mail.ru; website: <http://www.cognitivepsy.ru>

Address: 1 Leninskie Gory, Moscow, Russia, 119991



Chigrinova Irina A. — graduate student of the Chair of General Psychology, Lomonosov Moscow State University, Department of Psychology, Moscow.

Research interests: personality, personal values, moral development, experimental psychology.

Contacts: to.chigrinova@gmail.com

Address: 1 Leninskie Gory, Moscow, Russia, 119991

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### Abstract

The paper summarizes the results of an empirical study of personality regulation of choice and decision-making in a sample of undergraduate students (total  $n = 896$ ). The study examined the interrelationships among different components of emotional intelligence, indices of the stages of moral development and acceptance/rejection of uncertainty, as well as readiness for risk, rationality and Machiavellianism. We used a set of verbal vignettes to obtain indices of decision making. The choice alternatives for the vignettes were designed to represent the outcomes where uncertainty was resolved vs. unresolved. In half of the vignettes, the choice alternatives were also focused on manipulating vs. not manipulating others, and in the other half on using vs. not using

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the emotional information provided by the vignette. We found that indices of moral development differentiated between different choices alternatives not only in situations where decision-making involved manipulating other people but also in situations that involved using emotional information. Surprisingly, indices of the stages of moral development were stronger predictors of choice in situations involving other people than emotional intelligence. We also found that high (“Post-conventional”) levels of moral development are sometimes associated with the preference for the Machiavellian choice alternatives, suggesting that the role of values in decision can be conceptualized as dynamic. “Tolerance” and “Intolerance for uncertainty” were also linked to choice variables, suggesting the necessity for including these traits in the comprehensive evaluation of the personality regulation of choice.

**Keywords:** choice, emotional intelligence, tolerance for uncertainty, tolerance for ambiguity, stages of moral development, self-respect, self-devotion, self-concern, personal values, Machiavellianism, readiness for risk, rationality.

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## Introduction

We previously examined the concept of the “personal level” of moral development, not only in the narrow sense within the original Kohlberg & Gilligan’s (Molchanov, 2005) theoretical framework, but also with respect to its links to a higher-order latent variable of “Orientation towards personal Self and the value of another person” (Kornilova, Chigrinova, 2012). This latent variable was modeled through a set of (indicator or measured) variables: i.e., indices of the post-conventional stage of moral development, self-respect and self-devotion. We also examined other latent variables in a set of measurement models: specifically, the latent variable of Acceptance of uncertainty and risk and the latent variable of Rejection of uncertainty (Intolerance for uncertainty or Intolerance for ambiguity). This paper attempts to integrate the results of two studies, the one mentioned above and another published recently by Kornilova and Pavlova (2012). Both studies were conducted within the same theoretical and methodological frame-

work and capitalized on a comprehensive evaluation of personality traits and on using verbal vignettes to measure characteristics of choice and decision making.

Psychological regulation of choice is tightly linked to acceptance and overcoming of uncertainty through the active development and definition of goals, criteria, personal values, etc. In Russian, as well as English, literature on choice and decision making, choice is frequently referred to as an act that is not completely determined, implying the necessity of studying the development of regulative processes that are engaged online while the choice is being made. Psychological regulative systems that emerge during this process represent the joint intellectual and personality potential of a person as subject of choice and decision making. Thus, the study reported in this paper was deeply rooted in the idea of the unity of intelligence and affect (Vygotsky, 1962/1934) and the theory of Dynamic Regulative Systems (DRS; Kornilova, 2005). The DRS theory posits that the hierarchy of the processes involved in the regulation of a particular

activity is necessarily open (i.e., not rigidly determined) in nature and thus it is not entirely possible to predict which process will become the leading one in a specific act of problem solving or decision making.

In a series of experimental studies conducted in our lab (Chigrinova, 2010; Kornilova & Chigrinova, 2012; Pavlova & Kornilova, 2012), we found that it is not sufficient only to consider the connections between different predictors of choice mentioned above while treating them as dispositional characteristics, because they cannot fully explain the systemic, integral regulation of personal choices that frequently require one to achieve a productive solution under uncertainty. We found that individual differences in the personal regulation of choice are better explained through the inclusion of the concept of DRS that index dynamic hierarchies of regulative processes, including different personality and cognitive traits that work jointly rather than independently.

With respect to the regulation of *moral choice*, the specificity of DRS presumably lies in the hierarchy of processes involved in the comparison of a person's values to the moral rules. Such comparisons are carried out in a particular context that can be described through the identification of requirements and opportunities for development as applied to both the situation itself and to one's personal Self. In a narrow sense, the terminological

combination of words "moral" and "choice" can be operationalized by using moral dilemmas presented as verbal tasks (vignettes) that posit a conflict dictated by the necessity to choose between different personal values that stand behind different choice alternatives. In a broader sense, a personal choice can be called a moral choice if it implicates not only motivational, purposeful and meaningful psychological regulation, but also processes indexed by the measures of the stages of moral development that can be viewed as indexing personal preferences and values<sup>1</sup>.

Personal values are arguably the result of personality's self-determination. Any "object", including the ideal one, can be considered as a key element of a value and thus be implicated in meaningful (i.e., focused on the meaning) relationships between a person and the world. The specific content of these values involve value-based attitudes towards other people that can be mapped onto different stages of the development of "personal morality". It is also important to highlight the dynamic nature of this specific content. In every situation of personal choice a person can either follow the "logic" of personal values (that is, follow them without any doubt) or relate them to different "affordances" or opportunities for the situation's development. This ultimately suggests that one is faced with the necessity of making judgments about the applicability of a particular

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<sup>1</sup> While moral rules are represented in structures of the social consciousness (and values that comply with them stand out as having a special status of being social, socio-cultural or socio-psychological), the moral regulators of actions, decisions, and choices are represented in the self-consciousness of personality.

set of values to a specific decision-making situation.

Studies of moral choice and decision making focused on using moral dilemmas (J. Haidt, L. Kohlberg, M. Hauser) and were mostly concerned with establishing the set of personality predictors of such choice, viewing them as being the key elements of what has been called the “stages” of moral development. However, in our framework of acceptance of uncertainty as a general mode of the functioning of the intellectual and personality potential, we have developed an alternative account of the psychological regulation of moral choice that is closely tied to the concept of personal values systems as DRS of choice, in which cognitive and personal processes are intertwined (Kornilova, 2013).

Traditionally, studies of moral dilemmas are subdivided into two classes: one that views cognitive aspects of problem solving as leading in the psychological regulation of choice, and the one that is more focused on the role of emotional processes and regulation (Arutyunova, Alexandrov, Znakov, & Hauser, 2013; Crockett, 2013; Greene, Nystrom, Engell, Darley & Cohen, 2004; Kahneman & Tversky, 2003; Kitchener, 2000; Langdon, 2003; Vasiliuk, 1997; Woodward & Allman, 2007). Interestingly, the emotional regulation of decision making is frequently equated with personality regulation, including the effects of motivational characteristics and processes, and those related to meaning. For example, empathy and sympathy are viewed as key emotional components of decision making in the theories of N. Eisenberg and A. Morris; models that postulate the interaction between empathy and moral principles

have also been developed by Hoffman (2000), Rest (1986), etc. An overview of recent hybrid models is presented in Hauser’s book (Khauser, 2008), where N. Chomsky’s theory of generative grammar is extended to moral development and moral ability is viewed in terms of functioning of abstract rules that regulate moral judgments.

Theoretical positions that are in between these two views are more likely to yield valuable insights into moral choice as they more frequently focus on the individual psychological differences in the regulation of moral choice. A good example of this approach is Gigerenzer’s (2008) theory of ecological intelligence. Gigerenzer suggested that one can frequently identify compact reasoning processes behind so-called moral heuristics. Monin, Pizarro and Beer (2007) showed that in ecologically valid real-life situations people are faced with demands placed on their quick emotional response or deep reflection/reasoning. According to Monin and colleagues, when there is a dispute regarding the primacy of senses/emotions vs. mind/cognition, people often talk about different situations. Interestingly, Rest (1986) suggested that moral behavior is characterized, along with moral sensitivity and high stages of moral development, by moral motivation and moral character.

The unity of the development and functioning of morality and intelligence is underscored in Kohlberg’s (1976) approach, which developed Piaget’s (2006) ideas of the role of decentration in decision making as applied to a wide variety of problems and situations, including moral dilemmas.

Personal values are available to a person not only as knowledge, but also

as components of subjective experience that underscore the role of emotions in indexing the subjective processes [e.g., in Leontiev's theory (1975) emotions represent personal meanings] such as the person's adherence to certain values. So each personal value has both cognitive and emotional components, and these components cannot be distinguished unambiguously in the situation of moral choice, because of the overlap introduced by the processual links between them. This approach to understanding personal values is complex and essentially brings the field back to the need to re-evaluate and further develop the concept of the unity of intellect and affect.

The regulation of choice in moral dilemmas engages not only the orientation towards moral rules and values, but also one's emotional attitude towards other people, as well as towards personal Self. Perception, identification and control of own and others' emotions are the essential components of *emotional intelligence* (EI). There exists a multitude of models of EI (Goleman, 2006; Mayer, DiPaolo, & Salovey, 2008; Zeidner, Matthews, & Roberts, 2008; etc); however, most of them do not focus on (or, for that matter, consider) the relationships between different components of EI and stages of moral development. In our opinion, identifying these relationships is crucial for our understanding of the role of EI in decision making.

More recently, the construct of EI has followed the path of another construct, namely cognitive styles, but instead of bridging the gap between cognition and personality, it bridges the gap between cognition and emotion. On the one hand, EI is related to

intelligence and this allows researchers to consider EI as a cognitive capacity: a distinct subtype of intelligence that can even be linked the g factor (Husin, Santos, Ramos, & Nordin, 2013). Some attempts have been made to find connections between EI and practical and social intelligence: it is now considered that these constructs overlap considerably (Austin & Saklofske, 2000). On the other hand, the patterns of the relationships between EI and personality traits (in particular, the Big Five traits; see Joseph & Newman, 2010, for a recent meta-analysis) and existence of self-report measures of EI (Bracket & Mayer, 2003; Di Fabio & Saklofske, 2014; Schulte, Ree, & Carretta, 2004; etc) suggest that EI can be conceptualized as a (personality) trait that integrates cognitive and personality potentials (Kornilova, Chumakova, Kornilov, & Novikova, 2010; Pavlova & Kornilova, 2013). Corroborating this complex view of EI, other studies showed that EI is related to such traits as self-assessed intelligence (a construct indexing processes at the level of self-consciousness; Furnham, Moutafi, & Chamorro-Premuzic, 2005; Novikova & Kornilova, 2013), tolerance for uncertainty (Kornilova et al., 2010), intuitive style (Kornilova & Kornilov, 2013), and "psychological mindedness" (Novikova & Kornilova, 2014).

The study reported in this paper was rooted in the theoretical framework that posits the existence of multiple sources of the regulation of decision making and examined the relationships between moral development, tolerance for uncertainty, EI, and the regulation of personal choice.

Given the non-deterministic character of decisions, the systems that support the intellectual and moral "orientation"

in the problem situation must also be underdetermined but rather mediated by other processes, most importantly the latent variable of Acceptance of uncertainty. Note that this general principle, which postulates that decision making is inherently under-determined, can be successfully applied to moral choice. However, in this case, since moral decisions frequently include the evaluation of relationships with other people and ethical/moral rules, emotional components and processing (such as EI) must be especially important.

One of the most widely accepted models of EI is the ability model developed by Salovey–Mayer–Caruso. This model ascribes the primacy to cognitive components of EI. Such an approach views emotions as a source of information about relationships between people; correspondingly, EI draws on the general ability to identify emotion(s) in oneself and others, and to use emotional information to guide thinking and action (Roberts, Mett'yus, Zaydner, & Lyusin, 2004; Lyusin, 2006). This approach therefore views EI as the ability to process and use emotional information. However, in interpersonal interactions people are oriented not only by emotions; emotions themselves may appear as a result of evaluation of the extent of the concord between personal values and behavior on one hand, and moral rules on the other.

It is important to mention that the “personal” level of moral development does not presuppose the Machiavellian attitude towards other people, i.e. treating others as a means when achieving some goals. In fact, high levels of Machiavellianism are actually associated with lower EI (Egorova, 2009).

We believe that acceptance and overcoming of the uncertainty can be viewed as central processes in the psychological regulation of choice if, first of all, we accept the idea that in the process of decision making/choice the person not only creates/develops choice alternatives but also evaluates them according to his/her attained levels of the development/functioning of intelligence and personality. Second, based on the idea of multiple dynamically organized hierarchies of intellectual and affective-meaning processes that mediate the *person's choice* (i.e., as opposed to that of some logical device), the processes of overcoming uncertainty play a significant role in the regulation of choice and can be viewed as acts in which attained levels of self-regulation might exceed the demands of present conditions (i.e., the person ultimately creates himself/herself through his or her decisions; Kornilova, 2013).

Uncertainty in situations that involve interpersonal interactions includes uncertainty not only in the processes of establishing an emotional attitude (towards one's Self and towards other people), but also in establishing certain moral-ethical points of reference. Thus, using structural equation modeling, Kornilova and Novototskaya-Vlasova (2009) showed that measured EI indicators could be modeled as a function of *moral self-awareness*. This study found that EI is not an isolated process but plays a complex role in the integrated system consisting of four latent variables. The latent variables of “Acceptance of uncertainty”, “Orientation towards personal values”, “Orientation towards selfish interests and one's own comfort” and “Experience” predicted interpersonal and intrapersonal EI.

The study also found that while interpersonal intelligence was closely related to intrapersonal intelligence (as was expected based on the results of previous studies; Lyusin, 2006, 2009), when these traits are analyzed within the context of higher-order latent variables, they can be conceptualized as subordinate to different stages of moral development. Importantly, our study showed that the problem of moral choice can't be reduced to studying the stages of autonomous morality in either Kohlberg's (with his intellectual interpretation) or Gilligan-Eisenberg's (with their attention to empathy and sense of justice) models, and that variables that tap into a person's readiness to overcome uncertainty must also be taken into account.

Using *verbal vignettes*, we built several structural models of the psychological regulation of choice (Kornilova & Chigrinova, 2012; Pavlova & Kornilova, 2012). Overall, these studies suggested that 1) Acceptance of uncertainty is a necessary component of choice, and 2) while EI acts as a predictor of the use of emotional information in verbal vignettes, the involvement of personality traits in decision making was moderated by whether the participants were creative or non-creative professionals.

The current study tested the following general hypothesis: in situations that can be characterized as involving and requiring personal choice (e.g., probing willingness to manipulate others and/or to use emotional information) the stages of moral development of personality act as predictors of choice together with the traits of Acceptance of uncertainty ("Tolerance for uncertainty", TU) and EI. More specifically, we predicted that:

1) emotional intelligence should be related to the indices of the stages of moral development, i.e., the "personal" level of moral development should be associated with higher EI;

2) "Tolerance for uncertainty" and "Risk readiness" should be positively related to EI;

3) indices of the stages of moral development should significantly predict choice from alternatives in two *types of verbal vignettes* (i.e., the ones that focus on the use of emotional information and the ones that focus on the Machiavellian attitude towards other people);

4) "Machiavellianism" should be positively related to the "Pre-conventional stage" of moral development and negatively related to the "Post-conventional stage" of moral development and self-devotion.

## Method

### 1. Participants

896 undergraduate students (80% female, mean age was 19.8, SD = 2.7) from Moscow State University participated in the study in return for partial course credit.

### 2. Measures

#### 2.1. Verbal vignettes

We used 8 verbal vignettes, 4 of them focused on the *moral choice* and the other 4 on the use of *emotional information*. Participants were required to choose from several choice alternatives/courses of action that involved 1) agreeing with or refusing to manipulate others to reach one's goals, and 2) using

or not using the information provided by the emotional context to cope with situations that required overcoming uncertainty. More than 20 verbal vignettes were initially designed by a group of students who took the class on the psychology of decision making as part of their class requirement. These tasks were then evaluated by other students who had taken the class in the past, as well as our research team, with respect to their ecological and construct validity.

For the first type of vignettes, although the specific content of the vignettes differed, they shared in common the nature of the two provided alternatives: one involved manipulatively using the person as a means to reach a goal and the other did not. For the second type of vignettes, one of the alternatives involved using the emotional information, and the other one did not. Choice was coded as 1 for the alternatives that were Machiavellian or did not involve utilizing emotional information, and as 0 for the reverse (i.e., in the regression analysis, we used the dichotomous response as a dependent variable that indexed the choice of the “bad” alternatives; see Appendix I). The materials are described in more detail by Pavlova and Kornilova (2013).

## 2.2. Stages of autonomous morality

The Justice–Care Questionnaire (Molchanov, 2005) provides measures of stages of moral development through the identification of the level of moral judgments according to criteria of normative orientation on the principle of justice (L. Kohlberg) and empathic orientation according to the principle of care (K. Gilligan, N. Eisenberg). The questionnaire

provides quantitative measures of the development of six different stages of moral development: “Pre-conventional”, “Conventional” and “Post-conventional” (according to L. Kohlberg), “Self-concern”, “Self-devotion” and “Self-respect” (according to Gilligan-Aizenberg).

To assess “Machiavellianism”, we used the Mach-scale developed by Znakov (2000).

## 2.3. Tolerance for uncertainty

Tolerance for uncertainty was measured as readiness to make decisions and act in uncertain situations, openness to new ideas, changing stimuli, and willingness to change thinking strategies. Specifically, we used the New Questionnaire of Tolerance for Uncertainty (NQTU or NTN; Kornilova, 2010; see also Kornilova & Chumakova, 2014). NQTU is a Russian questionnaire that combined four different Measures of tolerance for uncertainty (see Furnham, 1994) and allowed us to obtain three indices: 1) “Tolerance for uncertainty” (TU) as the ability to function in uncertain situations, 2) “Intolerance for uncertainty” (ITU) as a desire to avoid uncertainty in the “world of ideas,” and 3) “Interpersonal intolerance for uncertainty” (interpersonal ITU) as a desire to reach certainty in interpersonal communication and relationships.

## 2.4. Risk readiness and rationality

We used the Personal Factors of Decisions (LFD-21, or LFR-21) questionnaire to measure “Risk readiness”. The questionnaire is aimed at measuring two factors of *self-regulation*: 1) “Rationality” as readiness to collect

full information for a more complete orientation in the situation and to think thoroughly about one's own decisions; 2) "Risk readiness" as acceptance of uncertainty and readiness to make decisions in uncertain situations. In our previous studies rationality was linked to the *latent variable of Rejection of uncertainty* (or *Intolerance for uncertainty*; Kornilova et al., 2010; Novikova & Kornilova, 2014), while "Risk readiness" was implicated in *Acceptance of uncertainty*.

## 2.5. Emotional Intelligence

Emotional intelligence was assessed using Lyusin's EmIn Questionnaire (LQ) built around the Salovey–Mayer–Caruso model of EI. LQ is a self-report measure of six facets of EI: "Perception of emotions", "Identification of emotions", and "Control of emotions" in both the interpersonal and intrapersonal domains. LQ also provides two summative scales of "Interpersonal EI" and "Intrapersonal EI".

## Results

### 1. Correlation analysis

As shown in Table 1, measures of the "personal" level of moral development correlated with "Interpersonal EI". Intrapersonal EI was unrelated to the subscales of the Justice-Care Questionnaire. We also found a positive correlation between the scales of "Interpersonal EI" and "Tolerance for uncertainty"; "Intolerance for uncertainty" was positively correlated with one of the scales of intrapersonal intelligence – "Managing/Regulating" one's own emotions. It is intriguing

that interpersonal intolerance for uncertainty was negatively correlated with the scales of interpersonal and intrapersonal EI.

We also found that "Interpersonal EI" was correlated with "Readiness to risk", while "Rationality" was correlated with "Intrapersonal EI"; more precisely, with "Perception of emotions".

The indices of "*Pre-personal autonomous morality*" that reflect orientation towards selfish interests ("Pre-conventional stage" morality and "Self-concern") were positively related to "Intolerance for uncertainty" and "Rationality", and "Machiavellianism", while indices that represent integrated *personal values* correlated positively with "Tolerance for uncertainty" and negatively with "Machiavellianism" (see Table 2).

### 2. Predictors of choice in verbal vignettes

The relationships between choice preferences in verbal vignettes (concerning manipulation and using emotional information, see Methods for more information) and personality traits were evaluated using Pearson's Chi-square. The results are presented in Table 3.

We found that choice in "Machiavellian" verbal vignettes was related to a broad spectrum of traits representing *Acceptance/Rejection of uncertainty* and indices of the *stages of moral development*, as well as "Machiavellianism". On the other hand, the choice in the *emotional information usage vignettes* was related to "Interpersonal EI" and also the indices of the *stages of moral development*. Together, these results suggest that

Table 1

## The relationships between EI and other traits (Spearman's correlation coefficient)

Measures	1	2	3	4	5	6	7	8
Interpersonal EI ("old" questionnaire)	0.22* N = 82	0.23* N = 82	0.30** N = 82				0.24** N = 109	
Intrapersonal EI ("old" questionnaire)								
Understanding others' emotions		0.17** N = 239		0.13* N = 282			0.22** N = 284	
Managing others' emotions		0.17** N = 239		0.15** N = 282		-0.20** N=282	0.23** N = 284	
Understanding own emotions								
Managing own emo- tions					0.12* N = 282	-0.15** N = 282		
Expression control								0.15** N = 284
Interpersonal EI ("new" questionnaire)		0.20** N = 239		0.16** N = 282		-0.14* N = 282	0.24** N = 284	
Intrapersonal EI ("new" questionnaire)								0.18** N = 284
Understanding emotions								
Managing emotions						-0.20** N = 282	0.15** N = 284	

Note. 1 – "Post-conventional stage", 2 – "Self-devotion", 3 – "Self-respect", 4 – "TU", 5 – "ITU", 6 – "Interpersonal ITU", 7 – "Readiness to take risk", 8 – "Rationality".

\*  $p < 0.05$ , \*\*\*  $p < 0.0$

choice in situations that have a strong interpersonal component is substantially related to the stages of moral development.

Significant predictors of choice in verbal vignettes according to the results of binominal regression analysis are shown in Table 4.

We were able to identify significant predictors of choosing "good" alternatives in some but not all verbal vignettes. In "Machiavellian" tasks that focus on the manipulation the main predictors were the indices of the "Post-conventional stage" of moral

development, "Machiavellianism", and "Risk readiness". Perhaps surprisingly, in tasks that focus on utilizing emotional information, EI did not act as a significant predictor of choice; however, we found that in these vignettes choice was predicted by variables that represent *interior personal values* and "Interpersonal intolerance for uncertainty".

## Discussion

The pattern of results obtained via the correlational analysis suggested

Table 2

**The relationships between the stages of moral development and other traits  
(Spearman's correlation coefficient)**

Measures	1	2	3	4	5	6
Pre-conventional stage	-0.14** N = 706	0.28** N = 706	0.15** N = 706		0.12** N = 707	0.30** N = 230
Conventional stage	-0.12** N = 706	0.23** N = 706	0.24** N = 706	-0.11** N = 707	0.16** N = 707	
Post-conventional stage	0.15** N = 706			0.10** N = 707		-0.17** N=230
Self-concern	-0.09* N = 706	0.22** N = 706	0.12** N = 706		0.09** N = 707	-0.33** N = 230
Self-devotion	0.11** N = 706	0.11** N = 706				-0.28** N = 230
Self-respect	0.14** N = 706	0.11** N = 706				

*Note.* 1 – “TU”, 2– “ITU”, 3 – “Interpersonal ITU”, 4 – “Readiness to take risk”, 5 – “Rationality”, 6 – “Machiavellianism”.

\*  $p < 0.05$ , \*\*\*  $p < 0.0$

that “Interpersonal EI” was related to variables indexing interior *personal values* (value-based attitude towards personal Self and other people), supporting the first hypothesis of the study. The established links between “Tolerance for uncertainty” and “Interpersonal EI” and also between “Tolerance for uncertainty” and “Intolerance for uncertainty” and *stages of moral development* are in line with results reported in previous studies (Kornilova & Chigrinova, 2012; Kornilova & Novototskaya-Vlasova, 2009). Therefore, we would like to argue that the value-based attitude towards Self and others is intertwined with the ability to emotionally understand others, and this ability might potentially be influenced by an overall empathic attitude towards others, also reflected in the indices of the moral development.

“Tolerance for uncertainty”, as we expected, was significantly related to traits included in the latent variable of Acceptance of uncertainty, “Risk”, and “Interpersonal EI”. Better ability to recognize and understand others’ emotions was associated with “Risk readiness”, while “Rationality” understood as readiness to collect full information for a more complete orientation in the situation and to think thoroughly about one’s own decisions was linked to the understanding of one’s own emotions (as part of “Intrapersonal EI”), supporting the second hypothesis of the study.

The results of the current study augment our understanding of the internal dynamics of the regulation of choice. Most importantly, we found that the stages of moral development, EI and various personality traits do not function independently.

Table 3

**Relationships between choice preferences in verbal vignettes and personality traits**

	Manipulation				Using emotional information			
	Task 1	Task 2	Task 3	Task 4	Task 1	Task 2	Task 3	Task 4
Interpersonal EI ("old" questionnaire)					$\chi^2 = 3.904$ $p = 0.048$			$\chi^2 = 5.839$ $p = 0.016$
Understanding others' emotions ("old" questionnaire)						$\chi^2 = 5.814$ $p = 0.016$		
TU				$\chi^2 = 6.71$ $p = 0.01$				
ITU		$\chi^2 = 5.62$ $p = 0.02$						
Interpers. ITU								
Readiness to take risk		$\chi^2 = 5.41$ $p = 0.02$		$\chi^2 = 12.27$ $p = 0.0001$				
Rationality		$\chi^2 = 3.39$ $p = 0.04$		$\chi^2 = 5.71$ $p = 0.02$				
Conventional stage					$\chi^2 = 3.946$ $p = 0.047$			
Post-conventional stage		$\chi^2 = 3.77$ $p = 0.05$						
Self-devotion			$\chi^2 = 6.61$ $p = 0.01$					$\chi^2 = 5.197$ $p = 0.023$
Self-respect	$\chi^2 = 8.60$ $p = 0.01$							$\chi^2 = 4.427$ $p = 0.035$
Machiavellianism	$\chi^2 = 3.96$ $p = 0.05$	$\chi^2 = 7.39$ $p = 0.01$	$\chi^2 = 15.17$ $p = 0.0001$	$\chi^2 = 4.58$ $p = 0.04$				

Table 4

**Significant predictors of choice in verbal vignettes**

	Predictors	B	P	R <sup>2</sup>
Task 2 (manipulation)	Post-conventional stage Machiavellism	0.19 0.06	0.05 0.02	0.10
Task 4 (manipulation)	Readiness to take risk	0.14	0.02	0.06
Task 2 (emotional inf.)	Interpersonal ITU Machiavellianism	0.23 -0.10	0.02 0.07	0.35
Task 4 (emotional inf.)	Self-devotion Self-respect	2.19 1.13	0.17 0.11	0.51

The results of the regression analysis revealed the traits that had a leading role in the dynamic regulative systems. We found that, first of all, the indices of the stages of moral development were significant predictors of the choice preference not only in tasks that focus on manipulation, but also in tasks that focus on the use of emotional information. Second, we also showed that interior personal values, that can be considered to be characteristic of post-conventional morality, self-devotion and self-respect, were linked to the ability to act and function under uncertainty.

Although the results of the study generally support the third hypothesis, it should be reformulated because we can argue that the post-conventional stage of moral development positively predicted Machiavellian choice in one of the tasks, which is a fascinating result. Coupled with the absence of significant correlations between the indices of the "Post-conventional stage" of moral development and "Machiavellianism", this suggests that high levels of moral development are not sufficient for (and do not guarantee) refusing to manipulate others. In each specific situation, the person decides which values rise to the leading level of regulation of *choice* and *decision making*, and this idea can be easily mapped onto the concept of *dynamic regulative systems* as applied to the psychological regulation of choice (DRS).

We should also mention that predictors of choice vary across samples and task/vignette contents. Thus, the hypothesis about the regulative role of stages of moral development and EI in choice and decision making should include a substantial situational component.

In this study, "Machiavellianism" was a significant predictor of moral choice; in addition to this trait, "Interpersonal intolerance for uncertainty" and "Readiness to take risk" were also predictive of the Machiavellian choice. Hence, the orientation towards selfish interests is linked to viewing other people as a means to an end and implies the need for clarity, including clarity in interpersonal relationships. Our results do not fully correspond to the results obtained in other studies that examined correlations between "Machiavellianism" and "Risk readiness" (e.g., Egorova, 2009).

Overall, the results of the study reported in this paper suggest that studies of choice and decision making should expand the range of variables that are examined with respect to their predictive power, in particular by including EI and stages of moral development in the set of such variables.

## Conclusions

The analysis of the relationships between alternative choices in verbal vignettes and personality traits suggests that the psychological regulation of choice and decision making has a complex, multifaceted architecture. Thus, stages of moral development seem to play a more important role in situations involving interpersonal interactions than "Interpersonal EI".

Machiavellian choice depends on "Machiavellianism" as a trait, as well as on "Risk readiness" and the "Post-conventional stage" of moral development.

Importantly, "Tolerance/Intolerance for uncertainty" predicted alternative choices in verbal vignettes, confirming

our previous claims that “Tolerance/Intolerance for uncertainty” is an essential element of the psychological regulation of choice.

In summary, our study indicated that EI and moral development are both parts of the complex landscape of dynamic interactions between these characteristics and other traits such as

“Tolerance/Intolerance for uncertainty”, “Machiavellianism”, “Risk readiness”, and “Rationality”. Although it is surely possible to augment this list by examining other traits and variables, the current study adds to the literature and deepens our understanding of the factors that play a role in choice and decision making under uncertainty.

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## Appendix

*Example of a decision-making vignette (manipulation vs. non-manipulation)*

Your boyfriend/girlfriend cannot go to a party with you and he/she would not let you go alone. Your best friend can lie to them, pretending you are going to study for the seminar together instead of going to the party. Will you use your best friend's help in this situation?

- A) Yes, I will. My boyfriend/girlfriend will not find out about this and I will have had fun.
- B) No, I would not cheat to have fun.
- C) Yes, I will use my best friend's help, but for a different reason (specify)

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D) No, I will not use my best friend's help, but for a different reason (specify)

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*Example of a decision-making vignette (using vs. not using emotional information)*

You meet your close friend and notice that they are upset about something. When you ask them about what happened, they do not tell you. Instead, their reply is "everything's fine". When this particular person acts this way, it is very difficult for you to talk to them. What would you do?

A) You wouldn't try to find out the true reason by asking this person directly. Instead, you would ask your mutual friends about what happened and whether you can help.

B) You would understand that they probably need your help, but you wouldn't ask persistently because they do not want to talk.

C) You would forget about it quickly because you have a lot of problems of your own.

D) You would start talking about something else and lead the conversation to a point where your friend could tell you everything.

E) You would find out what's going on by using some other method, such as \_\_\_\_\_ (specify).

## **Личностные ценности, моральное развитие и эмоциональный интеллект в регуляции выбора в ситуации межличностного взаимодействия**

### **Корнилова Татьяна Васильевна**

Профессор кафедры общей психологии факультета психологии Московского государственного университета имени М.В. Ломоносова, доктор психологических наук.  
Сфера научных интересов: мышление, интеллект, личность, методология психологии, экспериментальная психология, измерение.  
E-mail: tvkornilova@mail.ru; website: <http://www.cognitivepsy.ru>

### **Чигринова Ирина Александровна**

Аспирант кафедры общей психологии факультета психологии МГУ имени М.В. Ломоносова.  
Сфера научных интересов: личность, личностные ценности, моральное развитие, экспериментальная психология.  
E-mail: to.chigrinova@gmail.com

### **Резюме**

В статье представлены результаты исследований, демонстрирующих роль толерантности к неопределенности, эмоционального интеллекта, готовности к риску, рациональности, стадий развития автономной морали и макиавеллизма в регуляции личностных выборов. Студентам (всего выборка составила 896 чел.) предъявлялись 8 вербальных задач с множественными исходами: 4 из них — на моральный выбор и еще 4 — на использование эмоциональной информации. Исходы строились как «разрешающие — не разрешающие» ситуацию неопределенности (во всех восьми ситуациях), предполагающие использование другого человека в своих целях (макиавеллистический выбор или отказ от него — в четырех задачах) и ориентировку или нет на учет эмоционального контекста ситуации (в других четырех задачах). Проверялись гипотезы о регулятивной роли нравственного самосознания (стадий морального развития согласно модели Колберга—Гиллиган) и эмоционального интеллекта в предпочтениях личностного выбора, а также роли ситуационного фактора — содержания проблемы, которую разрешает человек своим выбором. В постановке проблемы обсуждена неправомерность классических противопоставлений разума и эмоций в регуляции морального выбора и обоснована необходимость учета толерантности-интолерантности к неопределенности в динамических регулятивных системах (ДРС) выборов. Было показано, что шкалы нравственного самосознания личности оказываются предикторами не только в задачах на манипулятивный выбор, но и в задачах, предполагающих возможность ориентировки на эмоциональную информацию в ситуации. Оказалось, что высокие показатели «Постконвенциональной стадии», свидетельствующие об уровне собственного личностного развития автономной морали, также могут сопутствовать предпочтению макиавеллистического выбора. Его предикторами выступили также «Макиавеллизм», «Межличностная интолерантность к неопределенности» и «Готовность к риску». Таким образом, высокий уровень нравственного развития не является гарантией отказа от использования другого, сам человек в зависимости от конкретной ситуации решает, какие из его личностных ценностей выйдут на ведущий уровень регуляции выбора. Интериоризованные личностные ценности, выраженные в шкалах «Постконвенциональная стадия» морали, «Самопожертвование» и «Самоуважение», в большей степени

предполагают способность личности продуктивно разрешать ситуации неопределенности. «Толерантность к неопределенности» выступила в значимых связях со шкалами, презентующими латентные переменные как «Принятие неопределенности и риска», так и «Межличностный эмоциональный интеллект». Установлено, что лучшему узнаванию и пониманию эмоций других людей сопутствует «Готовность идти на риск», в то время как «Рациональность», понимаемая как стремление к максимально полному сбору информации, в большей степени сопутствует пониманию собственных эмоций (связь со шкалой «Внутриличностный эмоциональный интеллект»).

**Ключевые слова:** выбор, принятие решений, эмоциональный интеллект, толерантность-интолерантность к неопределенности, стадии автономной морали, самоуважение, самоозабоченность, самопожертвование, личностные ценности, макиавеллизм, готовность к риску, рациональность.