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TOLERANCE OF UNCERTAINTY AND EMOTIONAL INTELLIGENCE AS PREDICTORS OF EMPATHY

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Abstract

Empathy is a complex construct that includes both affective and cognitive components. Attitudes towards uncertainty are seen as mediating the link between the emotional and the cognitive aspects of personality. The aim of this study was to establish predictors of empathy in the emotional domain (emotional intelligence) and in tolerance of uncertainty which is posited as a personality trait that reflects cognitive aspects of decision-making, namely, perception of uncertainty. Students (N = 200) completed Russian versions of the New Questionnaire for Tolerance of Uncertainty, Trait Emotional Intelligence Questionnaire, and Questionnaire of Cognitive and Affective Empathy. Interpersonal intolerance of uncertainty and emotional intelligence predict affective empathy, while both tolerance and intolerance positively predict cognitive empathy. Although tolerance and intolerance are negatively linked, they both positively predict empathy by activating different processes. Intolerance prompts a search for clarity, leading to a better understanding of what another person is experiencing, while tolerance encourages the search to continue even if complete clarity is unattainable. More research is recommended on the different traits and routes, these traits leading to empathy.

Keywords: Cognitive empathy, affective empathy, tolerance of uncertainty, emotional intelligence

1. Introduction

The concept of uncertainty includes both subjective uncertainty and acceptance of the unknown, the contradictory. The psychological regulation of decisions and actions under uncertainty entails regulation from the affective, emotional, rational, cognitive spheres (Kornilova, 2016; Kornilova et al., 2010). Attitudes toward uncertainty have been established as linkages between the emotional sphere and the cognitive sphere of a person (ibid.).

It is unclear yet if empathy has more influence from cognitive or emotional components. In the research literature there are contradictions regarding understanding of empathy, as it is viewed as both state and trait (Davis, 1983; Reniers et al., 2011).

Therefore, in this paper we implement an integrated approach to empathy through testing hypotheses on predictors of empathy from both the emotional sphere (emotional intelligence) and tolerance of uncertainty which is a personality characteristic that reflects cognitive representations.

1.1. Empathy

Empathy is a process of feeling, understanding and responding to the emotional state of another person. Studies suggest that high empathy is related to prosocial and altruistic action (Barraza & Zak, 2009; Bethlehem et al., 2017) while low empathy is related to malevolent outcomes such as offending and cyberbullying (Jolliffe & Farrington, 2004; Zych et al., 2019).

The distinction between cognitive and affective empathy implies that empathy involves both the processes of understanding the experience of the other person, and the ability to experience the emotional states of the other person (Reniers et al., 2011). Cognitive empathy implies the need to retain and manipulate information, as well as to build mental representations of what another person is going through, and possible interpretations. Affective empathy includes the ability for emotional contagion through noticing of facial expressions, gestures, voice changes and staying in this state with this person (ibid.).

Research suggests that cognitive and affective empathy are associated with different outcomes. For instance, cognitive (but not affective) empathy is associated with sensitivity to injustice for others (Decety & Yoder, 2016), and only cognitive empathy is lower in patients with various mental health conditions (Dziobek et al., 2008; Kerr-Gaffney et al., 2019).

The QCAE questionnaire developed by Reniers et al. (2011) for the assessment of cognitive and affective empathy was validated on a Russian-speaking sample. The original 5-factor structure of the questionnaire was established, as well as its convergent validity (Belousova & Geyvandova, 2021).

1.2. Tolerance of uncertainty

Tolerance of uncertainty in psychology is considered in the context of the methodological principles of psychology (Kornilova et al., 2010; Zinchenko, 2007), conceptions of tolerant personality and consciousness (Asmolov, 2000), and as a personality characteristic involved in the regulation of decision making (Kornilova et al., 2010).

Tolerance of uncertainty as a personality trait entails willingness to accept novelty and uncertainty, ability to act under uncertainty. Intolerance of uncertainty refers to avoidance of uncertainty, novelty, or

plurality, to seeking clarity and control; interpersonal intolerance of uncertainty manifests in the pursuit of clarity and control in interpersonal communication (Kornilova, 2010).

In the studies by prof. Kornilova's lab intellectual and personality potential is understood as a complex unified structure. Using structural equation modeling it was shown that based on measured personality characteristics a latent factor of Acceptance of uncertainty can be established. This latent factor includes scales of tolerance of uncertainty, openness to experience, and risk readiness (Kornilova, 2016; Kornilova et al., 2010). In a situation of decision-making people with higher tolerance of uncertainty use the most of the information that is accessible to them (Kornilova, 2014).

In quasi-experimental studies it was shown that indicators of tolerance-intolerance of uncertainty interact with indicators of emotional intelligence, and the associations of these measures differ for military managers and corporate managers, making different contributions to the strategies of multi-step decision-making (Krasavtseva & Kornilova, 2018; Krasnov & Kornilova, 2016).

The pandemic has forced people to turn to the new uncertainty and risks. It has been shown that people with a high intolerance of uncertainty related to the coronavirus and the pandemic exhibit stronger negative emotional states (fear, anxiety, and depression) (Dai et al., 2021).

1.3. Emotional intelligence

Relationships between tolerance of uncertainty and emotional intelligence have been investigated in several approaches. First, when these variables were studied in relation to creativity, it was shown that there is a so-called "positive triad" of traits: tolerance of uncertainty – emotional intelligence – creativity (Pavlova & Kornilova, 2019). In particular, high intrapersonal emotional intelligence is associated with low intolerance to uncertainty in interpersonal relationships (ibid.).

Second, there has been a debate on whether emotional intelligence could be considered an ability or a personality trait and how this relates to the empirical results on questionnaires developed within these different approaches. The EmIn Questionnaire (Lyusin, 2009) and TEIQue Questionnaire (Kryukova & Shestova, 2020; Petrides & Furnham, 2001) form the basis of a number of studies we have conducted. The scales of the EmIn questionnaire (based on the Mayer-Salovey-Caruso model) are associated with the scales of "psychological mindedness" (Novikova & Kornilova, 2014).

Scales of the TEIQue questionnaire used in the present study previously have shown positive associations with various scales of empathy. The Emotionality factor was a predictor of empathic perspective taking and empathic concern, and self-control was a negative predictor of personal distress (Fernández-Abascal & Martín-Díaz, 2019).

Empathy, much like emotional intelligence, is also considered in theories in the ability-trait dichotomy. According to the concept of dynamic regulatory systems (Kornilova, 2016), it is possible to move away from the opposition between affective and cognitive empathy, since in the dynamic hierarchization of different processes, both cognitive and emotional components can emerge as the upper levels of regulation.

2. Problem Statement

Since empathy is theoretically posited as a complex construct that includes both cognitive and affective components and research shows that those components are associated with different outcomes, it is necessary to implement an integrated approach to empathy.

3. Research Questions

It was hypothesized that emotional intelligence and tolerance of uncertainty will have positive contributions to empathy and that intolerance of uncertainty will have negative contribution to empathy (with possibly different effects for cognitive and affective empathy).

4. Purpose of the Study

The aim of the present study is to examine the contribution of attitudes to uncertainty and emotional intelligence to cognitive and affective empathy.

5. Research Methods

5.1. Sample

Participants of this study were 200 students of different educational levels (undergraduate, graduate, postgraduate) aged 18 to 60 years (M = 26.34, SD = 8.26), 82% of female.

5.2. Measures

- New questionnaire for tolerance to uncertainty (Kornilova, 2010);
- Trait Emotional Intelligence Questionnaire, TEIQue (Petrides & Furnham, 2001) in Russian adaptation (Kryukova & Shestova, 2020);
- Questionnaire of Cognitive and Affective Empathy, QCAE (Reniers et al., 2011) in Russian version (Belousova & Geyvandova, 2021).

6. Findings

6.1. Correlational analysis

The correlations between the measures are presented in Table 1.

Table 1. Correlations between the scales of tolerance and intolerance of uncertainty, emotional intelligence, and empathy

	TU	ITU	IITU	CE	AE	WB	SC	LE
ITU	-0.29*							
IITU	-0.30*	0.38**						
Cognitive empathy	0.19	0.33**	-0.06					
Affective empathy	0.16	0.12	0.10	0.35**				
Well-being	0.21	0.04	-0.30*	0.31*	0.35**			
Self-control	0.08	0.00	-0.38**	0.30*	0.05	0.58**		
Low emotionality	-0.21	0.07	0.35**	-0.29*	-0.21	-0.50**	-0.40**	
Sociality	0.23	-0.08	-0.24*	0.26*	0.16	0.50**	0.38**	-0.37**

Note. * $p < 0.05$, ** $p < 0.01$. TU – tolerance of uncertainty, ITU - intolerance of uncertainty, IITU – interpersonal tolerance of uncertainty, CE – cognitive empathy, AE – affective empathy, WB – well-being (TEIQ), SC – self-control (TEIQ), LE – low emotionality (TEIQ), S – sociality (TEIQ).

High scores on *interpersonal intolerance of uncertainty* are related to low scores on the TEIQ scales of *well-being*, *self-control* and *sociality*, and high scores on the *low emotionality*. At the same time, *well-being, self-control* and *sociality* are positively associated with *cognitive empathy*, while *low emotionality* is negatively related. High scores on *well-being* are accompanied by high scores on *affective empathy*. The higher the *cognitive empathy*, the higher the *affective empathy*.

Individuals with high *intolerance of uncertainty* have higher *cognitive empathy*.

6.2. Regression analysis

Stepwise regression analysis showed that *self-control* (B = 0.33, $p < 0.01$), *tolerance of uncertainty* (B = 0.29, $p < 0.01$), and *intolerance of uncertainty* (B = 0.27, $p < 0.05$) are significant positive predictors of *cognitive empathy* ($R^2 = 0.25$, F = 7.56, $p < 0.001$). At the same time, *well-being* (B = 0.43, $p < 0.01$) and *interpersonal intolerance of uncertainty* (B = 0.28, $p < 0.05$) predict high *affective empathy* ($R^2 = 0.20$, F = 9.07, $p < 0.001$).

7. Conclusion

Emotional intelligence scales are significant predictors for both cognitive and affective empathy. In particular, self-control is a predictor of cognitive empathy, and well-being is a predictor of affective empathy. Observed difference in relationships between the components of emotional intelligence and empathy correspond to the assumption of hierarchization of different processes associated with empathy. Links between the EI and empathy scales have been established in previous studies (see Abe et al., 2018; Fernández-Abascal & Martín-Díaz, 2019; Kryukova & Shestova, 2020). However, we also included the tolerance-intolerance of uncertainty as components in the analysis, which allowed us to uncover an additional layer to understanding the complex processes involved in empathy.

Uncertainty attitude scales served as significant predictors for both empathy scales. Tolerance of uncertainty and intolerance of uncertainty positively predict cognitive empathy, while interpersonal intolerance of uncertainty also positively predicts affective empathy. Although we assumed that EI scales and tolerance of uncertainty would positive predict empathy, intolerance scales were not expected to serve

as positive predictors. Tolerance of uncertainty is also positively (though insignificantly) related to both cognitive and affective empathy. Tolerance and intolerance are negatively related, yet both play a positive role in empathy. We suppose that intolerance of uncertainty prompts a search for clarity, an aspiration to gain an insight into the thoughts and feelings of another person. At the same time, tolerance of uncertainty preserves the assumption that a portion of the unknown remains in terms of understanding the other. In other words, intolerance encourages the pursuit of clarity, and tolerance helps to keep searching even though complete clarity may not be attainable. Interpersonal intolerance of uncertainty predicts affective empathy for similar reasons – a search of clarity in relationships may be linked to the desire to better understand another person, which leads to a higher capability to empathize with them. To verify these claims, a larger and more varied sample of participants is yet to be tested.

Two seemingly opposite attitudes toward uncertainty both positively predict empathy, which suggests that these traits are linked to empathy in difference ways. Thus, empathy may be attained through different routes and should be studied more closely in the future.

Acknowledgments

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