

## **AMBIGUITY INTOLERANCE: RESULTS OF AN ADAPTATION OF THE SHORT AMBIGUITY INTOLERANCE SCALE (SAIS-7) ON A RUSSIAN SAMPLE**

**E.V. ZABELINA<sup>a</sup>, A.A. DANILOVA<sup>a</sup>, I. PEDOVIĆ<sup>b</sup>, N. ČIROVIĆ<sup>b</sup>**

<sup>a</sup> *Chelyabinsk State University, 129 Brat'yev Kashirinykh Str., Chelyabinsk, 454001, Russian Federation*

<sup>b</sup> *University of Niš, 2 Ćirila i Metodija, Niš, 18105, Serbia*

### **Нетерпимость к неоднозначности: результаты адаптации Краткой шкалы нетерпимости к неоднозначности (SAIS-7) на русскоязычной выборке**

**Е.В. Забелина<sup>a</sup>, А.А. Данилова<sup>a</sup>, И. Педович<sup>b</sup>, Н. Чирович<sup>b</sup>**

<sup>a</sup> *Челябинский государственный университет, 454001, Российская Федерация, Челябинск, ул. Братьев Кашириных, д. 129*

<sup>b</sup> *Нишский университет, 18105, Сербия, Ниш, ул. Кирилла и Мефодия, д. 2*

#### **Abstract**

Ambiguity intolerance is a relatively new psychological phenomenon, which manifests its relevance in the conditions of instability of the modern world. Intolerance to ambiguity that is often not distinguished with the intolerance to uncertainty, refers to an individual's predisposition to react aversely to ambiguous situations. This tendency manifests across three domains: cognitively, through dichotomous (black-and-white) thinking; affectively, through experiences of anxiety and discomfort; and behaviorally, through the avoidance of ambiguous scenarios. This study aims to fill the existing gap in methodological development of this phenomenon in the Russian context. The aim

#### **Резюме**

Нетерпимость к неоднозначности (ambiguity intolerance) — относительно новый психологический феномен, проявляющий актуальность в условиях неустойчивости современного мира. Нетерпимость к неоднозначности, которую часто не отличают от нетерпимости к неопределенности, отражает тенденцию негативно реагировать на двусмысленные ситуации. Это проявляется в черно-белом мышлении на когнитивном уровне, тревоге и дискомфорте на эмоциональном уровне, а также в избегании таких ситуаций на поведенческом уровне. Настоящее исследование призвано восполнить имеющийся пробел в части методической разработки этого феномена в российском контексте. Целью стали выявление психометрических характеристик и адаптация

was to identify psychometric characteristics and adapt the Short Ambiguity Intolerance Scale (SAIS-7) on a Russian sample. The study involved 2,709 respondents aged between 18 and 87 years ( $M = 34.27$ ,  $\sigma = 14.73$ ) with different socio-demographic characteristics. Confirmatory factor analysis found the final (ex post) model of the scale, having a single-factor structure in which the indices of consent best meet the original data after adding links between errors of variables:  $CMIN = 100.909$ ;  $df = 12$ ;  $p = .000$ ;  $GFI = .974$ ;  $CFI = .990$ ;  $RMSEA = .052$ ;  $Pclose = .325$ . The results of the study allow us to establish acceptable indicators of the internal reliability and convergence. The identified patterns support that the Short Ambiguity Intolerance Scale (SAIS-7) is a reliable and robust tool, extending the scope for empirical studies on the intolerance to ambiguity, including cross-cultural design.

**Keywords:** ambiguity, uncertainty, ambiguity intolerance, tolerance to uncertainty, VUCA, short scale of ambiguity intolerance (SAIS-7).

**Ekaterina V. Zabelina** — Professor, Department of Psychology, Institute of Education and Practical Psychology, Chelyabinsk State University, DSc in Psychology, Associate Professor.

Research Area: general and social psychology, economic behavior, psychology of time, ecological consciousness, cognitive processes.

E-mail: [katya\\_k@mail.ru](mailto:katya_k@mail.ru)

**Anastasia A. Danilova** — Associate Professor, Department of Psychology, Institute of Education and Practical Psychology, Chelyabinsk State University, PhD in Pedagogical Sciences.

Research Area: social and organizational psychology, psychology of well-being.

E-mail: [ensti1988@mail.ru](mailto:ensti1988@mail.ru)

Краткой шкалы нетерпимости к неоднозначности (SAIS-7) на российской выборке. В исследовании приняли участие 2709 респондентов, в возрасте от 18 до 87 лет ( $M = 34.27$ ,  $\sigma = 14.73$ ) с различными социально-демографическими характеристиками. Конфирматорный факторный анализ констатировал итоговую (апостериорную) модель шкалы нетерпимости к неоднозначности, имеющую однофакторную структуру, индексы согласия в которой наилучшим образом удовлетворяют исходным данным после добавления связей между ошибками переменных:  $CMIN = 100.909$ ;  $df = 12$ ;  $p = 0.000$ ;  $GFI = 0.974$ ;  $CFI = 0.990$ ;  $RMSEA = 0.052$ ;  $Pclose = 0.325$ . Результаты исследования позволяют констатировать приемлемые показатели внутренней надежности и конвергентной валидности. Выявленные закономерности свидетельствуют в пользу того, что Краткая шкала нетерпимости к неоднозначности (SAIS-7) является надежным и валидным инструментом, расширяющим возможности проведения эмпирических исследований конструктора нетерпимости к неоднозначности, в том числе в кросс-культурном дизайне.

**Ключевые слова:** неоднозначность, неопределенность, нетерпимость к неоднозначности, толерантность к неопределенности, VUCA, краткая шкала нетерпимости к неоднозначности (SAIS-7).

**Забелина Екатерина Вячеславовна** — профессор, кафедра психологии, Институт образования и практической психологии, Челябинский государственный университет, доктор психологических наук, доцент.

Сфера научных интересов: общая и социальная психология, экономическое поведение, психология времени, экологическое сознание, когнитивные процессы.

Контакты: [katya\\_k@mail.ru](mailto:katya_k@mail.ru)

**Данилова Анастасия Анатольевна** — доцент, кафедра психологии, Институт образования и практической психологии, Челябинский государственный университет, кандидат педагогических наук.

Сфера научных интересов: социальная и организационная психология, психология благополучия.

Контакты: [ensti1988@mail.ru](mailto:ensti1988@mail.ru)

**Ivana Pedović** — Professor, Department of Psychology, Faculty of Philosophy, University of Niš (Serbia), DSc in Psychology.

Research Area: social psychology, emotional processes, social behavior and activism, cognitive psychology.

E-mail: ivana.pedovic@filfak.ni.ac.rs

**Nikola Ćirović** — Teaching Assistant, Department of Psychology, Faculty of Philosophy, University of Niš (Serbia), MSc in Psychology.

Research Area: social psychology, social behavior and activism, cognitive psychology, cultural values.

E-mail: ivana.pedovic@filfak.ni.ac.rs

**Педович Ивана** — профессор, кафедра психологии, философский факультет, Нишский университет (Сербия), доктор психологии.

Сфера научных интересов: социальная психология, эмоциональные процессы, социальное поведение и активизм, когнитивная психология.

Контакты: ivana.pedovic@filfak.ni.ac.rs

**Чирович Никола** — ассистент преподавателя, кафедра психологии, философский факультет, Нишский университет (Сербия), магистр психологии.

Сфера научных интересов: социальная психология, социальное поведение и активизм, когнитивная психология, культурные ценности.

Контакты: ivana.pedovic@filfak.ni.ac.rs

Ambiguity is becoming an integral part of the modern society. The technological development, on the one hand, is oriented towards the formation of a comfortable and safe world, while, on the other hand, it increases the amount of information and the variability of the environment that determines the complex situation of choice. Characterizing the modern world, researchers and practitioners describe new conditions through the abbreviation VUCA (volatility, uncertainty, complexity and ambiguity) (De Schauer, 2022; Baran & Woznyj, 2021). Such realities of the modern world as socio-economic transformations and terrorist threats (Bennett & Lemoine, 2014), development of information technologies, political instability (Troise et al., 2022), and new biological and environmental threats (Noda, 2020) define the rise of ambiguity. The issues related to the characteristics of a VUCA world affect the psychological aspects of society creating a cognitive and emotional tension (De Schauer, 2022; Luthans & Broad, 2022). In sum, the modern reality makes people exist, think and act effectively in the conditions of ambiguity.

Effective management of ambiguity requires flexibility, the ability to manage crisis situations and cope with stress (Baran & Woznyj, 2021). A promising approach to this problem is seen in its consideration through the prism of the concept of tolerance (intolerance) to ambiguity. For the first time, this phenomenon as an attitude to the changing, probabilistic and contradictory situation was presented by E. Frenkel-Brunswick (1948). The author concluded that tolerance/intolerance to ambiguity as a personal variable is manifested in behavioral dispositions and individual characteristics (Isaeva & Mamatova, 2021). It can be said that the intolerance to ambiguity reflects a personal tendency to react negatively on emotional, cognitive and behavioral levels to the ambiguity of situations and events (Zlobina & Krasnoryadtseva, 2023b, p. 657). Cognitive reactions include responses that indicate an individual's tendency to perceive the ambiguous situation strictly in black or white; emotional reactions are expressed in discomfort, resentment, anger and anxiety, and behavioral responses indicate rejection or avoidance of the ambiguous situation (Grenier et al., 2005).

The question of the conceptual nature of ambiguity intolerance remains open. According to the first approach, ambiguity intolerance is considered as a generalized personality trait. It is a stable tendency to respond to perceived ambiguity with a greater or lesser intensity, distributed in the general population (Carleton, 2016; McLain et al., 2015; Kornilova & Chumakova, 2014). The representatives of the second approach tend to see in this phenomenon a certain strategy of life implementation determined by the surrounding conditions (Zlobina & Krasnoryadtseva, 2023a; Ladouceur et al., 2000). In our view, these approaches are not contradictory. According to the compensator control theory, humans are intolerant to ambiguity because it represents a lack of structure and deprives them of the ability to feel in control of their lives (Ma & Kay, 2017). This, in turn, forms a certain strategy of human interaction with the world (Zlobina & Krasnoryadtseva, 2023a). Thus, this makes us consider ambiguity intolerance as a personal characteristic in response to external challenges.

### **Ambiguity and Uncertainty: The Problem of Distinguishing Concepts**

In order to reveal the phenomenology of the ambiguity intolerance, it is worth taking into account the existence of similar but not identical concepts, which are often used as interchangeable. Thus, there is a problem of distinguishing the concepts “intolerance to ambiguity” and “intolerance to uncertainty”. This problem is especially acute in the Russian scientific literature. For example, in the study of Kornilova and Chumakova (2014) the construct “tolerance to uncertainty” is described through the lens of the methodological approaches of E. Frenkel-Brunswick and S. Budner, revealing the tolerance to ambiguity. The same situation is observed in the works devoted to studying the problem of the diagnosis of tolerance to uncertainty and the methods thereof (Zlobina & Krasnoryadtseva, 2023b). This is probably due to the fact that this terminology first appeared in English-language scientific studies and may be considered as a problem of translation. Indeed, available translators, such as in Google or Yandex, often translate “ambiguity” and “uncertainty” identically as “uncertainty”.

In the foreign scientific literature, the problem of mixing concepts is found in earlier studies (e.g., Geller et al., 1993; Majid & Pragasam, 1997), in which ambiguity and uncertainty are seen as interchangeable on the basis of a number of similar characteristics. First, both phenomena are cognitive filters through which people perceive the environment as a source of threat. Second, they both include a tendency to react negatively, which is reflected in emotions, cognitions and behaviors in uncertain or ambiguous situations (Rosen et al., 2014).

Recent studies attempt to prove the differences of these constructs both at theoretical and empirical levels (Zvolensky et al., 2010; Grenier et al., 2005). In the work of Grenier and colleagues (Grenier et al., 2005), an attempt to distinguish these phenomena is made in relation to a time perspective. The authors note that people intolerant to ambiguity are not able to tolerate a situation “here and now” (a real situation is the source of threat). On the other hand, uncertainty intolerance refers to an unpredictable future-oriented component (uncertain future situations are the source of threat). In support of this claim, it was found that intolerance to

uncertainty plays a key role in the acquisition and maintenance of anxiety that is usually focused on the expectations of future negative consequences (Birrell et al., 2011). An attempt to prove empirically Grenier's hypothesis on the temporal orientation of the differences of the constructs was made in 2007. Although some trends have been found in the link between intolerance to uncertainty and orientation to the future, the authors did not find support for the hypothesis (Rosen et al., 2014).

In a number of studies, uncertainty and ambiguity are distinguished according to the probability of the result (e.g., Chen & Lovibond, 2016; Kirschner et al., 2016). Uncertainty refers to the situation where the result is unknown, but the probability of the result is known, whereas ambiguity is defined as higher-order uncertainty, that is, complete ignorance about the result (Chen & Lovibond, 2016; Kirschner et al., 2016). In the experimental study (Kirschner et al., 2016), it was found that manipulating only the uncertainty of the situation did not reveal differences between patients with generalized anxiety disorder and the control group, which contradicts a large number of studies. However, with the additional introduction of incentives for ambiguity, it was possible to identify differences between groups of highly anxious and low anxious people (Ibid.). Scientists have concluded that the intolerance to uncertainty is related to increased threat assessment and negative affect in the conditions of ambiguity, but not uncertainty (Chen & Lovibond, 2016). Ambiguity in this case is a particularly powerful trigger for the biased threat assessment and negative affect included in the uncertainty. The data presented clearly indicate the need to separate the concepts of uncertainty and ambiguity, both at the terminological and conceptual levels.

In the context of this study, ambiguity is understood as a subjective perception of missing (Frisch & Baron, 1988) or conflicting information (Trautmann & Van De Kuilen, 2015), and ambiguity intolerance is seen as a dispositional tendency to interpret the perceived ambiguity as threatening and/or discomforting (e.g. Budner, 1962). As opposed to uncertainty, ambiguity does not imply a new, unknown situation or a complex task (Pedović et al., 2022). In view of the above, there is a growing need to find adequate ways of measuring and diagnosing ambiguity intolerance, and it requires adapting the available methodological tools to different cultural samples. This work aims to identify the psychometric characteristics of the Short Ambiguity Intolerance Scale (SAIS-7) on a Russian sample.

### **Measuring Instruments of the Ambiguity Intolerance**

At present, questionnaires are the most common method of assessing ambiguity intolerance, but the choice of tools adapted on Russian samples is largely limited. The most frequently used methods are MAT-50 (Norton, 1975), S. Budner scale (Budner, 1962) and MSTAT-1 (McLain, 1993).

Among the main techniques is Measurement of Ambiguity Tolerance (MAT-50) developed in 1975. This scale is quite big, consisting of 50 points "truth-lie", such as "Usually the more clearly defined rules in society, the better" or "I worry when I do not know how strangers react to me" (Grenier et al., 2005). In 2022, this technique was adapted to a Russian-language sample. As a result of the confirmatory factor analysis, it was not possible to confirm the original eight-factor model of the

questionnaire. Seven factors were identified, reflecting the levels of the tolerance to ambiguity in different spheres of life (Zlobina & Krasnoryadtseva, 2023a).

One of the most commonly used tools in the research is the Tolerance Ambiguity Scale (Budner, 1962), which popularity can be explained by its shortness; it consists of 16 (12) points (Rosen et al., 2014; Grenier et al., 2005). Each item refers to one of the four types of ambivalent situations: (1) assessing a variety of others (e.g., “I avoid an environment in which people do not share my values”); (2) change (e.g., “The sooner we all acquire similar values and ideals”); (3) complex perspectives (e.g., “I would like to live in a foreign country for a while”); and (4) unfamiliarity (e.g., “I like to surround myself with things that I know”) (Rosen et al., 2014). The methodology was originally designed to assess tolerance/intolerance to ambiguity as two poles of one scale. However, as noted by Kornilova and Chumakova (2014), in modern studies the scale is used more often as a measure of tolerance to uncertainty, which can lead to unexpected results that are difficult to interpret. Besides, the methodology does not give a solid statistical support: it shows a great variety of the factor structure and, accordingly, a variety of interpretations of the results on different cultural samples (Ibid.).

Recently, McLain proposed a Multiple Stimulus Types Ambiguity Tolerance-1, 1993 (MSTAT-1). Tolerance to ambiguity is seen here as a range of reactions, from rejection to attractiveness, when perceiving unknown, complex, dynamically uncertain or having contradictory interpretations of the stimuli (Kondrashikhina, 2015, p. 84). The first adaptation of the questionnaire on the Russian sample took place in 1998 in the work of Lukovitskaya, then in 2010 in the work of Osin (Osin, 2010). The questionnaire identified groups of homogeneous items forming five subscales: attitude to novelty, attitude to complex tasks, attitude to uncertain situations, preference for uncertainty and tolerance/avoidance of uncertainty. Thus, here we see a methodological problem of not distinguishing terms, and it can be concluded that the questionnaire is aimed at identifying tolerances to uncertainty rather than ambiguity.

The use of the English-language questionnaires to assess ambiguity intolerance raises reasonable doubts. There is an obvious need for a comprehensive and reliable psycho-diagnostic tool, characterized by brevity and low variability of factors. Our attention was drawn to the Short Ambiguity Intolerance Scale (SAIS-7) proposed by Serbian scientists in 2022 (Pedović et al., 2022). The present scale, despite its brevity, covers a wide range of the behavioral characteristics that can be characterized as an intolerance to ambiguity. Given that empirical research in general does not provide strong support for the multidimensionality of the construction of ambiguity intolerance, the merit of this scale is its unidimensionality. SAIS-7 validation was conducted in four different languages (Serbian, Bulgarian, English and Greek) and showed good results of reliability, dimension, measurement invariance, as well as sufficient convergent, external and prognostic validity of the scale (Ibid.).

## **Method and Procedure**

First, the statements were translated from English into Russian. To ensure reliable results, the functional equivalence of the Russian and English versions of the



Ambiguity Intolerance Scale was established using the direct and reverse translation method (Brislin, 1986). Initially, seven statements reflecting aspects of ambiguity were translated into Russian (Annex). Linguistics and translation experts then assessed these definitions for accuracy. All the statements were then retranslated into English to preserve their original meaning.

In addition, the study used the following methods: MSTAT-I (in an adaptation of Lukovitskaya, 1998), TIPI-RU by C. Gosling, P. Rentfrou and V. Svochnna (in the adaptation Sergeeva, Kirillov, & Dzhumagulova, 2016), Life Satisfaction Scale by Diener (in the adaptation Osin & Leontiev, 2020). In order to monitor socio-demographic variables, reference data were collected: gender, age, place of residence, level of education, family status, religion, subjective level of income.

### **Sample**

Data collection took place from December 1, 2024 to January, 31, 2025. The prepared questionnaire was posted in the electronic form on the website <https://science.dobro.ru>, where a detailed instruction for its filling for the volunteers of science was formulated. There was also a feedback form, in which any participant could ask questions to the researchers.

After the cleaning procedure of the sample, 2,709 reliable responses were found. The age of the respondents ranged from 18 to 87 years ( $M = 34.27$ ,  $\sigma = 14.73$ ). Gender distribution: 41.4% male, 58.6% female. Most of the sample (44.9%) live in cities with fewer than one million people; almost the same number live in cities with over one million inhabitants (15.6%) and cities with populations over a few million people, such as Moscow and Saint Petersburg (15.9%); 23.4% of the respondents live in small towns (villages). Distribution according to subjective income levels: 45.9% of the respondents state average income, 19.4% consider their income levels to be below average, 19.6% — above average, 8.5% say their income levels are high, and 6.3% respondents consider their incomes low. 42% of the respondents have a higher education, 17.2% have not completed higher education, 22.7% have completed secondary vocational education and 18.1% have completed general education. 45% of the respondents are married, 40% mention their status as unmarried, 13.4% are divorced, 1.3% widowed, and 0.4% of respondents indicated that they were in a relationship (marriage not registered). Distribution by the level of religiosity: 30.2% of respondents admit the existence of higher forces, 12.7% say they are atheists, 16.1% report that they do not care about religion, 28.1% call themselves believers, 12.9% agree with the statement “I believe and try to observe the rites of my religion”.

### **Results**

In the first stage of processing the results the descriptive statistics of the items were calculated (Table 1).

*Table 1***Descriptive Statistics on the Short Ambiguity Intolerance Scale**

| <b>Statements</b>                                                                                        | <b>M</b> | <b><math>\sigma</math></b> | <b>Kurtosis</b> | <b>Skewness</b> |
|----------------------------------------------------------------------------------------------------------|----------|----------------------------|-----------------|-----------------|
| S1. I dislike questions which could be answered correctly in many different ways                         | 3.12     | 1.311                      | −1.015          | −.162           |
| S2. Poems with contradictions are annoying                                                               | 3.06     | 1.356                      | −1.142          | −.118           |
| S3. I like stories that have consistent                                                                  | 3.57     | 1.125                      | −.481           | −.421           |
| S4. Vague and impressionistic pictures really have little appeal for me                                  | 3.24     | 1.297                      | −.947           | −.238           |
| S5. I don't like to work on a problem unless there's a possibility of coming out with a clear-cut answer | 3.30     | 1.244                      | −.860           | −.260           |
| S6. It's annoying to listen to someone who cannot seem to make up his or her mind                        | 3.50     | 1.192                      | −.565           | −.459           |
| S7. I hate it when you can't solve a problem right away                                                  | 3.45     | 1.194                      | −.630           | −.412           |

The results of the descriptive statistics recorded the values of the standard deviation, kurtosis and skewness within 1 per module, which allows us to assume a slight deviation from the normal distribution. All the items on the scale are positively correlated with each other (Table 2).

*Table 2***Results of the Correlation Analysis of the Scale Items**

|    | <b>S1</b> | <b>S2</b> | <b>S3</b> | <b>S4</b> | <b>S5</b> | <b>S6</b> | <b>S7</b> |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| S1 | 1         |           |           |           |           |           |           |
| S2 | .492**    | 1         |           |           |           |           |           |
| S3 | .274**    | .249**    | 1         |           |           |           |           |
| S4 | .382**    | .440**    | .211**    | 1         |           |           |           |
| S5 | .404**    | .320**    | .252**    | .334**    | 1         |           |           |
| S6 | .235**    | .258**    | .209**    | .283**    | .258**    | 1         |           |
| S7 | .264**    | .260**    | .209**    | .243**    | .342**    | .335**    | 1         |

\*\*  $p \leq 0.01$ .

An exploratory factor analysis (Table 3) was then performed using the maximum likelihood method to identify the internal structure of the questionnaire (KMO = .820; Chi-square = 3426.025,  $p = .000$ ).

The results of the factor analysis show that the dispersion of all items is the one factor with not very high but significant loads ( $> .4$ ). Therefore, the content of all statements reflects a single latent construction.

Further, a confirmatory factor analysis was used to verify the factorial structure of the scale, with one latent factor for all seven variables. The model was tested



Table 3

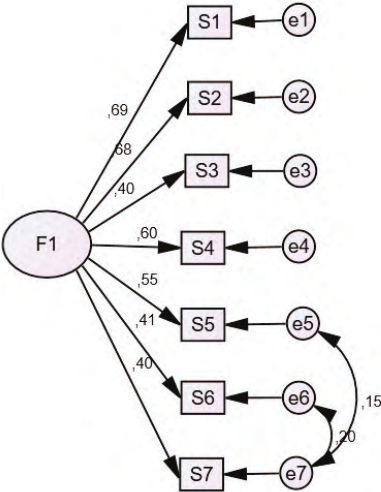
Results of the Exploratory Factor Analysis

| №                                    | Statements                                                                                           | Factor weigh |
|--------------------------------------|------------------------------------------------------------------------------------------------------|--------------|
| S1                                   | I dislike questions which could be answered correctly in many different ways                         | .669         |
| S2                                   | Poems with contradictions are annoying                                                               | .659         |
| S3                                   | I like stories that have consistent characters                                                       | .405         |
| S4                                   | Vague and impressionistic pictures really have little appeal for me                                  | .597         |
| S5                                   | I don't like to work on a problem unless there's a possibility of coming out with a clear-cut answer | .575         |
| S6                                   | It's annoying to listen to someone who cannot seem to make up his or her mind                        | .442         |
| S7                                   | I hate it when you can't solve a problem right away                                                  | .466         |
| Percentage of explainable dispersion |                                                                                                      | 30.65        |

with the AMOS SPSS module and demonstrated satisfactory compliance with the original data: CMIN = 239.717;  $df = 14$ ;  $p = .000$ ; GFI = .974; CFI = .935; RMSEA = .077; Pclose = .000. After the model improvement, namely, adding links between errors of the variables 6 and 7, 5 and 7 (Figure 1), the parameters of the model were even better (figure 1): CMIN = 100.909;  $df = 12$ ;  $p = .000$ ; GFI = .974; CFI = .990; RMSEA = .052; Pclose = .325.

Figure 1

The Model of the Scale of Ambiguity Intolerance



The correlations between variables in the model and the latent factor, as well as between errors of the variables are at a high level of significance (Table 4).

Table 4

**Model Regression Coefficients: Results of the Confirmatory Factor Analysis**

|         | Estimate | S.E. | C.R.   | <i>p</i> |
|---------|----------|------|--------|----------|
| S2 ← F1 | 1.024    | .039 | 26.447 | ***      |
| S3 ← F1 | .499     | .029 | 17.297 | ***      |
| S4 ← F1 | .869     | .035 | 24.504 | ***      |
| S5 ← F1 | .760     | .033 | 22.738 | ***      |
| S6 ← F1 | .540     | .031 | 17.592 | ***      |
| S7 ← F1 | .534     | .031 | 17.065 | ***      |
| S1 ← F1 | 1.000    |      |        |          |

\*\*\*  $p \leq 0.0001$ .

The next stage of the study was to verify the reliability of the scale. The results showed an acceptable level of reliability: Cronbach's Alpha = .748, with none of the items being removed significantly improving the reliability of the questionnaire.

Then, in order to check the convergent validity of the scale, a correlation analysis was carried out with the indicators of life satisfaction, tolerance to uncertainty and personality traits (Big Five). The analysis shows signs of the convergent validity of the scale on the Russian sample. This is evidenced by the correlations with all scales of the MSTAT-I, and especially strong – with the final subscale of the tolerance to uncertainty. Ambiguity intolerance is negatively related to positive attitude towards new ( $r = -.130, p = .000$ ), to complex tasks ( $r = -.321, p = .000$ ) and uncertain situations ( $r = -.332, p = .000$ ), as well as to preference for uncertainty ( $r = -.137, p = .000$ ) and tolerance to uncertainty ( $r = -.439, p = .000$ ).

Analysis of the correlations with the Big Five (TIPI-RU) scales showed a direct relationship to emotional stability ( $r = .064, p = .001$ ) and a reverse one – to openness to new experiences ( $r = .096, p = .000$ ). This result suggests a relatively stable psychological nature of the ambiguity intolerance and the possibility to consider it as a personal trait.

Weak significant links with subjective income and life satisfaction were found. The need for simplicity and clear logic is more pronounced in respondents who are more satisfied with their financial situation ( $r = .097, p = .000$ ) and more satisfied with their life in general ( $r = .049, p = .011$ ).

We then tried to determine the place of this phenomenon among the socio-demographic variables. For this purpose, a comparative analysis was carried out of the ambiguity intolerance among the respondents of different gender, different family status, living in different cities. In addition, the analysis of the correlation with age, level of education and religion was performed. The analysis did not reveal differences in ambiguity intolerance between men and women ( $p = .96$ ), or

between people with different levels of religiosity ( $p = .876$ ). It was also found that the levels of ambiguity intolerance do not differ among people living in different cities and towns ( $p = .25$ ).

There were differences in ambiguity intolerance among people with differences in marital status ( $F = 10,295$ ,  $p = .000$ ). The lowest ambiguity intolerance was found in the respondents who were in unregistered marriage ( $M = 2.95$ ), followed by people who are not married ( $M = 3.20$ ), then married people ( $3.38$ ). The highest levels of intolerance for ambiguity are recorded in those who have lost a spouse (divorced  $M = 3.44$  and widows  $M = 3.35$ ). The ambiguity intolerance is significantly higher in those who are married than unmarried ( $p = .000$ ). People who are divorced are significantly more intolerant to ambiguity than those who are not married ( $p = .000$ ). However, it should be borne in mind that the groups compared are uneven in volume, and the data must be checked in additional studies. Nevertheless, these facts make it possible to consider the phenomenon studied as largely due to social experience.

The correlation with age ( $r = .118$ ,  $p = .000$ ) also supports this explanation. The older a person becomes, the more he or she is intolerant to ambiguous information, ambiguous relationships and behavior. This may be explained by the reduction of the mental flexibility with age, which makes it difficult to adapt to the ambiguities of the surrounding world and dictates the need for simplicity and certainty. On the other hand, there is a weak significant relationship with levels of education ( $r = .060$ ,  $p = .000$ ): in respondents with higher educational levels, the levels of ambiguity intolerance are higher. These contradictions highlight the need to study this phenomenon in the context of cognitive and metacognitive formations.

## Discussion

Summarizing the results of the psychometric data verification of the Short Ambiguity Intolerance Scale (SAIS-7) on a Russian sample, it is possible to state its reliability, as well as the validity of the data obtained. The factor analysis confirms the adequacy of the single-factor structure of the SAIS-7 on a sample of Russians. The scale also showed satisfactory values of Cronbach's Alpha coefficient, which indicates the internal reliability of the diagnostic tool.

The convergent validity is confirmed by the existence of negative correlations with a positive attitude towards new, complex tasks and uncertain situations, as well as with a preference for uncertainty and tolerance to uncertainty. These data indicate that ambiguity intolerance and intolerance to uncertainty arise and are experienced as very close phenomena. At the same time, the fact that people of a higher socio-economic status and more satisfied with life show greater ambiguity intolerance (as opposed to uncertainty, Osin, 2010) indirectly indicates certain differences in their impact on personality. Besides, these differences can be explained by the changes of the socio-economic and geopolitical situation of the world, an increase in contradictory and false information, including due to the development of the artificial intelligence technologies. This result, which contradicts some theoretical and empirical data, updates further research and discussion about the relations

between uncertainty and ambiguity (Zvolensky et al., 2010; Grenier et al., 2005; Zlobina & Krasnoryadtseva, 2023a).

The results of the correlation analysis actualize the idea of ambiguity intolerance as a personality trait (Carleton, 2016; McLain et al., 2015) emerging in the social environment. In particular, the links with emotional stability, openness to new experiences (negative) (Jach & Smillie, 2019), satisfaction with financial status and life in general (Strout et al., 2018), as well as the association with the family status, age (Abe, 2018) and education (DeForge & Sobal, 1989) support this concept.

On the other hand, the data obtained open the possibility of considering the phenomenon of ambiguity intolerance as a shaped cognitive strategy (Grenier et al., 2005) — a way of selecting and structuring information, which then forms a strategy of the attitude towards reality (Zlobina & Krasnoryadtseva, 2023a; Ladouceur et al., 2000). The findings that ambiguity intolerance increases with age and higher levels of education reveal the need for further research into this phenomenon in the context of cognitive and metacognitive phenomena. Probably, over-abundance of information can gradually cause resistance to blurred and ambiguous reality, reinforcing the ambiguity intolerance.

Attention should be paid to the socio-demographic characteristics of the ambiguity intolerance. The SAIS-7 indicators differ according to marital status, age and level of education, which is consistent with scientific data and confirms the suitability of the methodology for working with various socio-demographic groups (Pedović et al., 2022). Differences in ambiguity intolerance by characteristics such as gender, place of the residence, religiosity were not found. This fact may indicate the existence of cultural features of ambiguity intolerance. For example, in comparison with the Russians, gender differences were found in a sample of a Greek population: women showed higher levels of ambiguity intolerance than men, that the authors associate with women's higher cognitive perceptions of the threat (Parlapani et al., 2020). An Austrian-German study of an English-speaking sample showed that reflections on religion caused by semantic and contextual priming reinforce participants' intolerance for ambiguity (Sagioglou & Forstmann, 2013), which is not the case in this study. An Australian sample shows differences in the level of ambiguity intolerance among urban and rural residents: the latter show higher levels of ambiguity tolerance and lower levels of concern about mistakes (Eley et al., 2017). Thus, the study updates the problem of cross-cultural differences in the phenomenon being studied, and an adapted scale on a Russian sample may help to advance this issue.

The limitations of the study can be attributed to the insufficient representativeness of the sample and the remote data collection format, which could have led to the errors in the statistical calculations. In future studies, the theoretical construction of the ambiguity intolerance needs to be further elaborated and more clearly distinguished from related phenomena, such as intolerance to uncertainty.

## **Conclusion**

This study represents evidence of the reliability and validity of the Russian version of the Short Ambiguity Intolerance Scale (SAIS-7) that makes it recommendable as

a research tool. The results broaden the psycho-diagnostic base and contribute to the development of population and cross-cultural studies of the ambiguity intolerance, as well as raise the question of the need for further research on similarities and differences in the phenomena of ambiguity and uncertainty in psychology.

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## SAIS-7 [Шкала нетерпимости к неоднозначности]

**Instruction:** “You need to evaluate the proposed statements on the scale of five points, where 1-complete disagreement with the statement, 3 – something in between, 5 – complete agreement with the statement” **[Инструкция:** «Вам необходимо оценить предложенные утверждения по пятибалльной шкале, где 1 – полное несогласие с утверждением, 3 – нечто среднее, 5 – полное согласие с утверждением»].

| №  | Statements                                                                                                                                                                                              |           |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | I dislike questions which could be answered correctly in many different ways [Мне не нравятся вопросы, на которые можно ответить правильно разными способами].                                          | 1 2 3 4 5 |
| 2. | Poems with contradictions are annoying [Меня раздражают двусмысленные стихотворения].                                                                                                                   | 1 2 3 4 5 |
| 3. | I like stories that have consistent characters [Мне нравятся рассказы, в которых герои действуют последовательно].                                                                                      | 1 2 3 4 5 |
| 4. | Vague and impressionistic pictures really have little appeal for me [Мне не нравятся размытые, импрессионистские картины].                                                                              | 1 2 3 4 5 |
| 5. | I don't like to work on a problem unless there's a possibility of coming out with a clear-cut answer [Мне не нравится работать над задачей, если нет возможности прийти к точно определенному решению]. | 1 2 3 4 5 |
| 6. | It's annoying to listen to someone who cannot seem to make up his or her mind [Меня раздражают люди, которые никак не могут сделать выбор].                                                             | 1 2 3 4 5 |
| 7. | I hate it when you can't solve a problem right away [Ненавижу, когда не получается решить проблему сразу].                                                                                              | 1 2 3 4 5 |