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Jelka Stojanov[1]
Sara Stanisavljević
Višnja Tatić
Aleksa Pantić

Department of Psychology, Faculty of Philosophy, University of Belgrade

CONSPIRACY THINKING INVENTORY (CTI) – CONSTRUCTION AND VALIDATION STUDY[2]

Conspiracy thinking is defined as a form of reasoning about events and situations of personal, social, and historical significance, where "conspiracies" are a dominant factor. This research aims to construct and validate Conspiracy Thinking Inventory (CTI), which purpose is to measure general propensity for conspiracy thinking, rather than beliefs in specific conspiracy theories. Study 1 (*N* = 356), a preliminary version of CTI consisting of 93 items, was constructed and subsequently shortened to 23 items arranged in 4 facets: Control of Information, Government Malfeasance, Threat towards One's Own Country, Threat towards Personal Well-being. In Study 2 (*N* = 180), factor structure and validity of CTI were tested, resulting in a two-factor solution: Conspiracy Thinking Aimed at Health and Well-being (CT), and Attitudes towards the Government Institutions and Representatives (AtGI). The pattern of correlations between CT and relevant constructs confirmed its convergent validity, and CT was also shown to be a good predictor of beliefs in specific conspiracy theories. Previously confirmed convergent and criterion validity and its psychometric characteristics show that CTI may be used as an indicator of conspiracy thinking. Nevertheless, divergent validity has yet to be confirmed by using other constructs (e.g., personality traits). Despite not having been foreseen, extraction of the second factor might be the consequence of using items with predominantly political content. This factor was not correlated with any external criteria which indicate that it does not reflect conspiracy thinking.

Key words: conspiracy theories, Conspiracy Thinking Inventory, construction, validation

[1] Corresponding author e-mail: stojanov.jelka@gmail.com

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Introduction

Conspiracy thinking is defined as a form of reasoning about circumstances of personal, social, and historical significance, in which conspiracy theories, plots concerning ill-intentioned individuals or organizations (Douglas & Sutton, 2008), are a dominant factor (Zonis & Joseph, 1994). Oliver and Wood (2014) conceptualize conspiracy thinking as a particular form of public opinion which emerges from two basic psychological predispositions: (a) tendency to attribute unexplained circumstances to unseen, powerful forces; and (b) propensity to endorse simplified narratives which interpret history as a constant battle between good and evil. In line with this conceptualization, Van Prooijen, Krouwel, and Pollet (2015) provide initial evidence that political extremists are more susceptible to conspiracy beliefs, and that this susceptibility can be at least partially explained by their tendency to accept simplified, black-and-white explanations of societal events. Since political extremism and out-group conspiracies have led to some of the greatest tragedies in human history (e.g., Holocaust), understanding psychological processes, underlying conspiracy thinking, and designing adequate instruments to measure it, are crucial to prevent such destructive consequences from occurring ever again. Additionally, conspiracy theories have been linked to other negative outcomes and alarming behaviours: a reduced interest to engage in politics (Jolley & Douglas, 2014), vaccine hesitancy (Mitra, Counts, & Pennebaker, 2016), reduced trust in well-established sources of knowledge (Imhoff, Lamberty, & Klein, 2018), which further attests to the need for a deeper understanding of this phenomenon.

Conspiracy Thinking and Related Constructs

A characteristic of conspiracy thinking is suspicion and proneness to believe that other people have hostile intents, making it similar to paranoia (Candido & Romney, 1990; Combs et al., 2009). This similarity has been supported by previous studies reporting positive correlations between the two constructs (ranging from .36 to .58) (Cichocka, Marchlewska, & Zavala, 2016; Grzesiak-Feldman & Ejsmont, 2008; Imhoff & Lamberty, 2018). However, conspiracy thinking is not considered to be an independent psychological disorder, while paranoia is, nor do conspiracist beliefs necessarily originate from paranoia (Gray, 2008). Conspiracy thinking is also characterized by the belief that dangerous events are happening on a global scale, which is one of the components of the authoritarian personality termed *projectivity* (Adorno, 1950). Previous studies suggest that authoritarianism and general conspiracy thinking are correlated (correlations from .28 to .42) (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013; Grzesiak-Feldman & Irzycka, 2009), and recent research confirms this finding with the association between authoritarianism and beliefs in conspiracies about malicious out-groups which threaten the current social structure being equal to .52 (Wood & Gray, 2019). One of the consequences of such beliefs is the feeling of vulnerability and intolerance

towards groups in power. On the other hand, social dominance orientation is generally associated with a positive attitude towards influential groups (Imhoff & Bruder, 2014). Earlier research (Bruder et al., 2013) has shown only a weak correlation between conspiracy thinking and social dominance orientation (r = .15), whereas more recent findings (Wood & Grey, 2019) suggest a stronger correlation between social dominance orientation and conspiracy theories about powerful out-groups threatening a relevant in-group (r = .43). The correlation between social dominance orientation and conspiracies about ill-intentioned in-group members is significantly weaker (r = .17).

Additionally, people who endorse conspiracy theories often turn to supernatural forces as possible explanations of real-life events. Belief in extraordinary causes of everyday phenomena that are discarded by conventional standards is referred to as magical ideation, which is one of the key features of schizotypy (Eckblad & Chapman, 1983). Van Der Tempel & Alcock (2015) have hypothesized that schizotypy is correlated with conspiracist beliefs about supernatural forces, and subsequently reported the correlation of .38 between the two constructs on a sample of visitors of online conspiracy-related forums. This correlation has been replicated in recent studies (r = .32, r = .34) (Barron, Morgan, Towell, Altemeyer, & Swami, 2014; Georgiou, Delfabbro, & Balzan, 2019). Another construct related to supernatural explanations are religious beliefs, conceptualized as a highly structured form of reasoning, which provides a tool for individuals to make sense of day-to-day, societal phenomena (Park, 2005). Similarly, conspiracy theories offer alternative interpretations of daily events which might match an individual's set of opinions and help creating a coherent worldview (Douglas, Sutton, & Cichocka, 2017). Both types of beliefs have a function of maintaining a stable worldview, and also mark powerful, usually unattainable subjects responsible for particular events. With religious beliefs, the responsible subject is God, and with conspiracist beliefs, the main actors are influential groups. Previous research (Bruder et al., 2013) has provided evidence for the correlation between the two constructs (r = .25).

Existing Approaches towards Measuring Conspiracy Thinking

The vast majority of instruments which aim to measure conspiracy thinking include only existing conspiracy theories about real-life actors and events (e.g., Moon landing), and participants are asked to assess to which degree they believe in each one of them (Darwin, Neave, & Holmes, 2011; Leman & Cinnirella, 2007). Brotherton et al. (2013) have addressed the problem of poor psychometric properties of these instruments, and emphasized the necessity to develop a scale of general conspiracy thinking, which is not based on specific actors and events, and which allows greater comparability of results and a possible generalization of conclusions.

Present Study

Taking the shortcomings of existing instruments into account, as well as the lack of their psychometric verification, the aim of this study was to construct and validate a short version of Conspiracy Thinking Inventory (CTI) for measuring individual differences in general propensity for conspiracy thinking, as opposed to specific beliefs in conspiracy theories. CTI was constructed in a multistep process: firstly, indicators of conspiracy thinking were identified, then the items that reflected these indicators were created, and finally, the instrument as a whole was validated, making it the first of this kind in the region.

Study 1

In Study 1 93-item, pilot version of CTI was constructed with the aim to select the best items for the final version of the instrument to be validated in Study 2. The selection was done on the grounds of psychometric properties computed by using the RTT10G macro for SPSS (Knezević & Momirović, 1996), and Item Response Theory analysis conducted in the R package ltm (Rizopoulos, 2006).

Construction of the Instrument

Considering all the limitations associated with instruments dealing with specific conspiracy theories, we decided to construct CTI in a way that did not refer to specific circumstances. *Generic Conspiracist Beliefs Scale* (GCB), as an example of a decontextualized instrument (Brotherton et al., 2013), was taken as a model for the item construction.

The longer version of the GCB scale consisted of 75 items grouped in 5 indicators: government malfeasance, extraterrestrial cover-up, malevolent global conspiracies, personal well-being, and control of information. Before constructing CTI items, content analysis of forums and websites about conspiracy theories was also performed[3]. We concluded that conspiracy theories about extraterrestrials were not widespread in this region, so this indicator was left out. The indicator „malevolent global conspiracies" in GCB was used as an inspiration for generating items of other indicators, as its content overlapped with the content of other indicators to a great extent. In the pilot version of CTI, items were organized in 4 indicators: control of information, government malfeasance, the threat towards one's own country and threat towards personal well-being.

Control of Information. This indicator consisted of 26 items referring to situations in which organizations or individuals in the position of power deceived

[3] 50 articles and posts in social networks were inspected, out of which only 3 were about extraterrestrial activity.

the public and misused the information in line with their interests (*Official explanations of some events only disguise the fact that they were organized by secret organizations*.).

Government Malfeasance. This indicator included 16 items referring to immoral acts of government representatives aiming to control the occurrence of some events in the country (*Members of the government change the law to legalize their previously illegal actions.*)

Threat towards One's Own Country. This indicator was an innovation in comparison to GCB. It was added based on the content analysis, where we noticed a great sensitivity of commentators towards topics of national importance (out of 50 analyzed posts, 32% could have been interpreted as this indicator). This indicator consisted of 30 items referring to activities of powerful groups with a sinister goal to cause damage to Serbia and its citizens (*Certain countries conspire to destroy my nation.*).

Personal Well-being. This indicator included 21 items about events and circumstances, having a direct impact on the psychological and physical well-being of the citizens. (*I believe that chemicals harmful for health are deliberately put in GM foods*.).

Method

Sample and Procedure. The sample was gathered through convenient sampling (N = 356), and it consisted of participants aged from 15 to 63 (M = 22.72; Mdn = 20), 70.8% of which were female. The survey was administered by using the *Google Forms* platform. All the participants were told that the CTI items referred to general social attitudes since conspiracy thinking was not considered to be socially desirable, and mentioning it could potentially bias participants' responses.

Instrument. The pilot version of CTI consisted of 93 items. The total number of reverse coded items was limited to 23, to make sure that items reflected conspiratorial meaning (*Stories about powerful organizations controlling human lives via the Internet are a complete nonsense.*). Answers were given on a five-point Likert scale (1 - *completely disagree* and 5 - *completely agree*).

Results

Descriptive Analyses. The values of standardized skewness and kurtosis were both under 1.96 (zSk = -1.82; zKu = 0.51), which led to the conclusion that the distribution was normal, and that the test discriminability was satisfactory, which was also confirmed with Kolmogorov-Smirnov Test (z = .65; p = .80). T-test showed that there was not a significant difference between genders (t(354) = 0.28, p > .05).

Data Analysis. Cronbach's alpha coefficient (α) was equal to .97, and *KMO* index of sampling adequacy was .99. Homogeneity index H5 had the value of .51,

the range of item sampling adequacy was .92 - .99, while the item reliability range was .34 - .76. Range of validity determined with Hotelling procedure was .24 - .69 and with Bart's procedure .25 - .68, which suggested that the majority of items were correlated with the first principal component and the sum score.

Exclusion of Items. The items were dropped by using a combination of psychometric criteria. In the RTT10G, items with the best properties were chosen with all of them having values above .9 for item sampling adequacy, .5 for item reliability, .5 for Hotelling's and Bart's validity measure. In IRT analysis, multiple criteria for excluding items were combined: (a) the value of average unweighted misfit should not fall outside the range of 0.7 – 1.3; (b) discrimination of items should be high or very high, as defined by Baker (2001), leading to the selection of items which carried substantial information about the underlying trait (Partchev, 2004).

In order to choose an adequate IRT model, preliminary factor analysis, using Principal Axis Factoring and Promax rotation, was conducted revealing four underlying factors in line with initially hypothesized facets, which explained 38.23% of variance. Additionally, higher-order principal component analysis revealed one factor explaining 68.58% of variance, which was ultimately termed Conspiracy Thinking. First-order inter-factor correlations and higher-order loadings can be seen in Table 1. This factor structure was confirmed by using Horn's parallel analysis (Horn, 1965). Based on these results, graded response model with generalized partial credit model constraint was chosen and applied to items loading on every individual lower-level factor. These criteria led to the selection of the final 23 items for the final version of CTI, out of which 5 were reverse coded. Test information function for all 23 items revealed that the short version of CTI was highly informative in the range of -2 to +2 of the latent trait (TFI > 10, Embretson & Reise, 2000), which was expected due to the lack of participants scoring close to the minimum of maximum value.

Table 1
Inter-factor correlations and higher-order factor loadings

	Government Malfeasance	Threat Towards One's Own Country	Control of Information	Conspiracy Thinking
Personal Well-Being	.49**	.58**	.45**	.79
Government Malfeasance		.54**	.64**	.85
Threat towards One's Own Country			.51**	.84
Control of Information				.84

Note. ** $p < .01$.

Descriptive Statistics and Psychometric Properties after the Items Exclusion. Final 23 items were chosen for the shorter version of CTI (Appendix A). The value of arithmetic mean was now 70.26, standard deviation was 18.03, and standardized skewness had the value of .47, while -1.17 was the value of the standardized kurtosis. Apart from the values of skewness and kurtosis, which indicated the presence of normal distribution, this was also confirmed with Kolmogorov-Smirnov Test (z = .04; p = .23). Psychometric properties of the shorter version of CTI can be found in Table 2.

Table 2
Psychometric properties of the 23-item CTI

Cronbach's Alpha	.94
Kaiser-Meyer-Olkin index (KMO)	.95
H5 homogeneity index	.57
Item sampling adequacy range	.94 - .97
Item reliability range	.26 - .59
Hotelling's validity measure range	.42 - .64
Bart's validity measure range	.45 - .73

Due to a smaller number of items, Cronbach's alpha decreased, but it was still an indicator of high reliability. The KMO index remained almost the same, while the value of the H5 homogeneity index increased, which implied that CTI items referred to a more narrowly defined topic than it was initially the case.

Discussion of Study 1

A 93-item self-report inventory of conspiracy thinking was constructed in Study 1. Factor analysis was conducted, and four factors were extracted in line with the initially hypothesized indicators. This finding was also in line with the previous study used as a model for the construction of CTI, where a five-factor-solution was extracted (Brotherton et al., 2013). The difference in the number of factors in the two studies originated from the fact that the *extraterrestrial cover-up* indicator (Brotherton et al., 2013) was excluded in this study. In addition, higher-order factor analysis was conducted in order to test the assumption of unidimensional structure of conspiracy beliefs that relied on Ted Goertzel's (1994) concept of *monologic belief system*. Such system was defined as a self-sustaining system in which each belief provided evidence of the next one, meaning that those who believed in one conspiracy theory would easily accept other ones. This assumption was confirmed as one factor was extracted and ultimately interpreted as conspiracy thinking.

Based on its psychometric properties (discriminability, reliability, homogeneity, validity), as well as on item response theory analysis, we decided that 23 items should be kept in the final version of the instrument. Psychometric properties of the 23-item Conspiracy Thinking Inventory (CTI) were shown to be satisfactory. Cronbach's alpha (α = .95) decreased in comparison to the pilot version of CTI, but its value still testified to the internal consistency of the instrument. The value of the Kaiser-Meyer-Olkin index of sampling adequacy remained high, while the value of the H5 homogeneity index significantly increased suggesting the potential underlying unidimensionality. The 23-item CTI was further examined and validated in Study 2.

Study 2

The aim of Study 2 was to validate CTI by using an independent sample through examining its factor structure, convergent and divergent validity.

Method

Sample. A total of 180 students from the University of Belgrade participated in Study 2. They were recruited from three faculties: Faculty of Sport and Physical Education (47.8%), Faculty of Music and Fine Arts (6.1%), and Faculty of Philosophy (Department of Pedagogy - 20%, Department of History - 26.2%). The participants aged 19 to 34 (*M* = 21), and 70.8% of them were female.

Instruments. The following questionnaires, scales, and measures were applied in Study 2:

Conspiracy Thinking Inventory (CTI). This instrument was validated in this study. The shorter version consisted of 23 items grouped in 4 indicators: Control of Information, Government Malfeasance, Threat towards One's Own Country, and Personal Well-being. Answers were given on a five-point Likert scale (1 - "*completely disagree*" and 5 - "*completely agree*").

Delta-10 (Knežević, Opačić, Kutlešić, & Savić 2005). Facets of paranoia and magical thinking, both consisting of 12 items, were chosen from the Delta-10 Inventory. The responses were given on a five-point Likert scale, and the sum score was subsequently calculated. In this study, reliability index for the facet paranoia was .75, and for the facet magical thinking .80.

Right-Wing Authoritarianism Scale (Altemeyer, 1996; Serbian adaptation: Petrović, 2001). This scale consisted of 30 items out of which 15 were pro authoritarian, while the other 15 were reverse coded. The responses were given on a five-point Likert scale. Scale reliability was satisfactory (α = .90).

Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth, & Malle, 1994; Serbian adaptation: Mihić, 2009). This scale consisted of 16 items followed by a five-point Likert scale. Reliability for this scale was .88.

Religiousness Scale (Strayhorn, Weidman, & Larson, 1990; Serbian adaptation: Todorović & Knežević, 2006). This scale included 12 items accompanied by a five-point Likert scale. The reliability, as measured by Cronbach's alpha, was very good (α = .83).

Specific Conspiracist Beliefs Scale (Lukić & Žeželj, 2017). This scale was composed of 12 items referring to specific conspiracy theories present in this region (e.g., *Slobodan Milošević did not die of natural causes, he was murdered in Hague*.). The answers were given on a four-point Liker scale. Internal consistency in this study was .86.

Procedure. The approximately 45-minute testing sessions took place during the lectures in the three faculties. After induction and consenting, participants completed the battery of instruments in the same order.

Results

Construct Validity. Exploratory factor analysis, using Principal Axis Factoring and Promax rotation, was conducted to examine the internal structure of the 23-item measure of conspiracy thinking. We chose Principal Axis Factoring as a factor extraction method since it was commonly recommended when the assumption of normality was violated (Costello & Osborne, 2005), which was the case with all CTI items. Promax rotation was used to achieve more natural associations between latent factors. Two-factor solution explaining 36.79% of the variance was extracted with the first factor accounting for 24.69% of the total variance, and the second factor accounting for 12.09%. A small correlation was observed between the two factors ($r = .29$, $p < .01$).

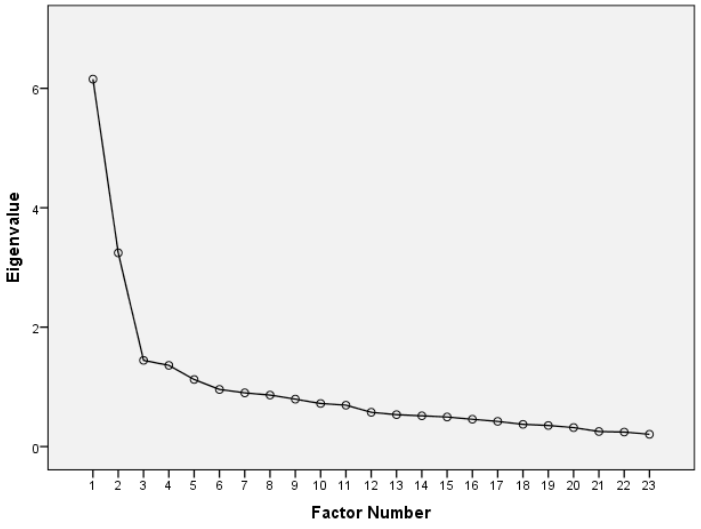

Figure 1. Scree plot after Promax rotation.

Horn's parallel analysis (Horn, 1965), using Principal components as a factor extraction method, and upper 95th percentile of the distribution as a criterion for factor retention (Glorfeld, 1995), was also applied to rigorously test the conclusion about the number of relevant extracted factors. This analysis was carried out by using an SPSS macro *parallel.sps* (O'Connor, 2000). The initial conclusion about the number of factors was supported as it was shown that only two factors had a higher Eigenvalue than the ones obtained on randomly generated data (Figure 2).

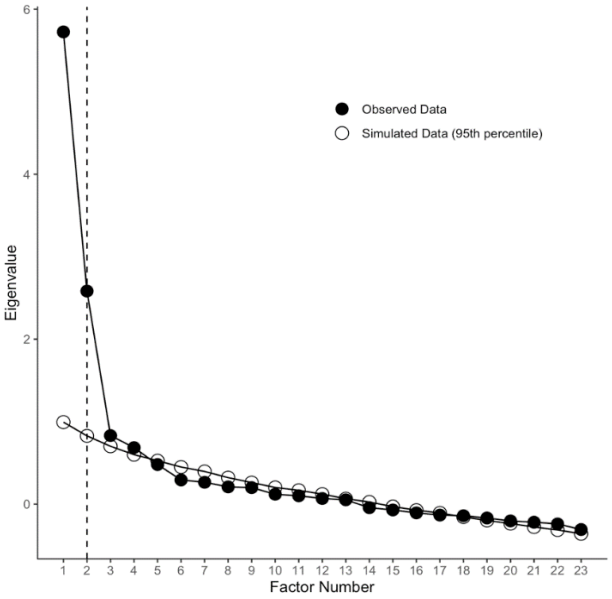

Figure 2. Scree plot for parallel analysis (Study 2).

A total of 3 items did not satisfy the two pre-set conditions: (a) a meaningful loading must be greater than .30, and (b) cross-loadings were not allowed, and were subsequently dropped. The remaining pattern of loadings reflected conceptually meaningful groupings (see Table A in Appendix A). The first factor was interpreted as conspiracy thinking aimed at circumstances threatening to personal health and well-being (*I believe that sterility is deliberately caused by vaccination in order to decrease the number of people on the planet.*), whereas the second factor reflected the control of information and malicious activities undertaken by government representatives (*I believe that members of the government have faked some events in order to distract the public from current problems.*).

Descriptive Statistics for CTI. Descriptive statistics and psychometric properties of factor scores can be seen in Table 3. Cronbach's alpha and *KMO* test of sampling adequacy were satisfactory, whereas H5 homogeneity measure was high for both factors. This implied that the items loading on each of these factors pertained to a narrowly defined topic, which might further suggest the item redundancy. Descriptive statistics and psychometric properties of other instruments used in this study can be found in Appendix A (Tables B and C).

Table 3
Descriptive statistics and psychometric properties of CTI factor scores

	M	*SD*	*zSk*	*ZKu*	*KS*	α	*KMO*	*H5*
CT	2.88	0.74	-0.22	0.83	0.07	0.88	0.97	0.83
AtGI	3.69	0.71	-3.82**	1.23	.10**	0.80	0.94	1

Notes. CT - Conspiracy Thinking; AtGI - Attitudes towards government institutions; *KS* - Kolmogorov-Smirnov test statistic.
* $p < .05$. ** $p < .01$.

Convergent and Divergent Validity. Correlations between extracted factors and constructs of interest can be found in Table 4.

Table 4
Convergent and divergent validity correlations

	P	MT	RWA	R	SDO	SCB
CT	.27**	.21**	.43**	.28**	.29**	.58**
AtGI	-.10	.05	.07	-.02	.10	.37**

Notes. CT - Conspiracy Thinking; AtGI - Attitudes towards Government Institutions; P - Paranoia; MT - Magical thinking; RWA - Right-wing Authoritarianism; R - Religiousness scale; SDO - Social Dominance Orientation Scale; SCB - Specific Conspiracist Beliefs Scale.
* $p < .05$. ** $p < .01$.

Correlations between the first factor (Conspiracy Thinking) and the constructs of interest were in line with initial expectations, whereas no correlations with the second factor (Attitudes towards the government institutions) were found, which supported the possibility that the second factor did not reflect conspiracy thinking. The only unexpected correlation in this study was the correlation between conspiracy thinking and social dominance orientation, where opposite results were expected.

Regarding the Specific Conspiracist Beliefs Scale (SCB) (Lukić & Žeželj, 2017), based on the assumption that general conspiracy thinking could predict specific conspiracist beliefs (Swami, Chamorro-Premuzic, & Furnham, 2010), both extracted factors were used to predict the score on this scale, which consisted of 12 widely known regional and global conspiracy theories. In multiple linear regression, both extracted factors were significant predictors of Specific Conspiracist Beliefs score accounting for 36.8% of the total variance, with conspiracy thinking explaining 33.2%, and attitudes towards government institutions explaining 3.6% of variance ($\beta_1 = .51$, $t_1(164) = 7.78$, $p < .01$; $\beta_2 = .202$, $t_2(164) = 3.08$, $p < .01$). This finding confirmed the initial hypothesis that the higher CTI score was followed by a higher SCB score.

Replicability of the Factor Structure. Even though the factor structure of a preliminary 93-item version of CTI did not represent a criterion for the item

selection *per se*, the factor structure of a 23-item CTI was subsequently tested on a sample from Study 1. This was done to gain an insight into the factor replicability in two independent samples. After the two-factor solution was extracted in the Horn's parallel analysis yet again (Figure 3), the factor loadings from Study 1 and Study 2 were used to calculate Tucker's congruence coefficient. For both factors, Tucker's congruence coefficient had the value of .99 and .97 respectively, which indicated that this factor could be considered identical in both samples (Lorenzo-Seva & Ten Berge, 2006).

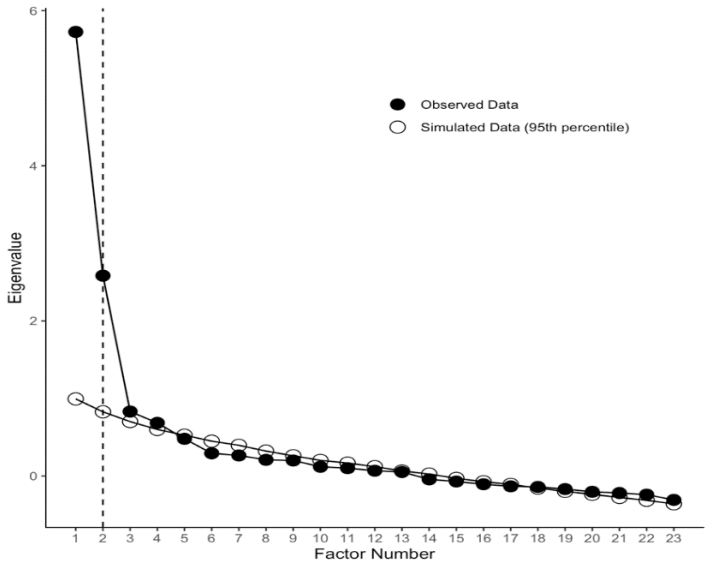

Figure 3. Scree plot for parallel analysis (Study 1).

Discussion of Study 2

Factor analysis revealed two underlying dimensions. The first factor was interpreted as conspiracy thinking directed towards personal well-being, specifically, circumstances and individuals threatening to it, while the second factor was shown not to reflect conspiracy thinking, but rather attitudes towards government institutions and representatives, as participants might have found it difficult to distance themselves from the familiar actors and events in their own country. This interpretation was supported by the absence of correlations between this factor and any other construct used to test convergent validity. The final version of Conspiracy Thinking Inventory should consist of 20 items, 12 of which loaded high on the first factor.

Selection of instruments for testing convergent and divergent validity was not straightforward, since previous research yielded inconsistent results. Previously reported correlations varied significantly in intensity, which could at least partially be attributed to the usage of different instruments. However, in accordance with the majority of previous findings, a meaningful pattern of correlations

was observed between conspiracy thinking and paranoia, magical thinking, authoritarianism, and religious beliefs, confirming its convergent validity.

Positive correlation between conspiracy thinking and paranoia was expected due to the fact that paranoid ideation was characterized by believing in other people's hostile intentions. Additionally, a positive association between magical and conspiracy thinking was not surprising since magical thinking, similar to conspiracy thinking, included beliefs in alternative explanations that were not widespread (Eckblad & Chapman, 1983). Nonetheless, the low intensity of this correlation could be explained in terms of psychopathology. Conspiracy thinking was considered a subclinical construct, while magical thinking was one of the main characteristics of schizotypy, which classified it in the domain of psychopathology (Eckblad & Chapman, 1983).

A strong positive correlation was also found between conspiracy thinking and the right-wing authoritarianism. Previous research explained this correlation in terms of authoritarian aggressiveness, shifting the guilt for unfortunate events to out-group members, towards whom one had hostile feelings (Abalakina-Paap, Stephan, Craig, & Gregory, 1999). An alternative explanation could be based on authoritarian submissiveness and a blind faith in superior individuals or groups that had the power to influence events directly connected to one's safety and well-being. Since the strongest correlation was found between conspiracy thinking and authoritarianism, future studies should examine this relationship in more depth. In regards to religious beliefs, the common characteristic that could explain their correlation with conspiracy thinking was the belief that factors beyond people's control could influence their lives (Douglas et al., 2017).

Convergent validity of CTI was further confirmed as both factors were good predictors of beliefs in specific conspiracy theories. This finding was expected on the premise that individuals with general conspiracy ideation would be more prone to accept a wide range of available contents characterized by malicious acts and protagonists (Swami et al., 2010). The contribution of the first factor was significantly larger in comparison to the second factor, which attested to its interpretation as conspiracy thinking. The small contribution of the second factor could likely be attributed to the fact that some SCB items referred to prominent political events and actors. Thus this pattern of results could be interpreted in line with correlation findings to suggest that the second factor did not include conspiracist ideation, but rather narrowly defined political attitudes.

Divergent validity was, however, not confirmed in this study, and the adequacy of social dominance orientation for testing this type of validity was questionable. Previous studies found correlations of varying intensity between social dominance orientation and conspiracy thinking, depending on the instruments employed in the study (Bruder et al., 2013; Swami, 2012; Wood & Grey, 2019), but no study showed an absolute absence of correlation. Future research should consider using other constructs, consistently shown not to correlate with conspiracy thinking, to test divergent validity (e.g., personality traits) (Goreis & Voracek, 2019).

Also, alternative theoretical explanations can be offered to explain the observed positive correlation. According to social dominance theory, individuals who strongly express this orientation tend to perceive the world as a competitive

place where 'the strongest ones survive', and are also inclined to commit malicious acts out of self-interest (Duckitt, 2006). Thus, people with a hierarchical view of society might also be prone to believe that individuals in higher positions commit suspicious acts threatening to others, but might simultaneously perceive these acts as appropriate means of climbing the social ladder. In other words, individuals with strong social dominance orientation might regard malicious activities as just another way to success, but might also be afraid of such deeds done by someone else, as they can endanger them. This fear can manifest itself through belief in conspiracy theories. However, additional research is needed to provide stronger empirical support for this explanation.

General Discussion

Based on the present study, Conspiracy Thinking Inventory (CTI) can be considered a valid measure of conspiracy thinking, since one of the extracted factors can be interpreted as conspiracy thinking aimed at circumstances threatening to personal health and well-being. At the same time, the unexpected extraction of the second factor (attitudes towards the government institutions) can be explained by predominantly political content of some items. It is highly likely that when responding to these political items, the participants have found it difficult to dissociate themselves from their attitudes towards current government institutions and representatives in their country, and consequently, they have not focused on their attitudes towards malicious acts of powerful people in general. However, further research is warranted to create more abstract items that will not induce any associations to specific events and actors.

If using the current version of CTI in future research, we recommend not to include items which load high on the second factor, in order to obtain results that will more reliably reflect conspiracy thinking. Additionally, since CTI has been created on the basis of the specific conspiracy beliefs in this region, it is not advisable to use it in a different cultural context without prior adaptation.

Appendix A

Table A

Pattern matrix for CTI

Item	CT	AtGI
I believe that sterility is deliberately caused by vaccination to decrease the number of people on the planet.	.75	
Vaccines are deliberately made in a way to cause developmental disorders.	.73	
Modern technology is deliberately produced in a way to cause sterility among young people.	.71	
Substances which hinder normal development of children are deliberately put in food and drinks available in supermarkets.	.68	
Health professionals consciously allow the use of vaccines for which they know are causing developmental disorders among children.	.66	
Military forces are spreading radioactive substances across my country to cause malignant diseases and exterminate the population.	.61	
There is a plan to destroy my nation with radioactive substances.	.61	
I believe that deliberate causing of climate change is a simple way to destroy agriculture and impoverish my country.	.60	
The purpose of vaccination is only disease prevention. *	.53	
I believe that chemicals harmful for health are deliberately put in food.	.47	
Powerful countries are trying to impose their deviant values on my country.	.41	
Certain countries actively conspire to destroy my nation.	.41	.36
Saying that toys containing toxic substances are deliberately imported in my country is ridiculous. *	.39	
I believe that members of the government have faked some events to distract the public from current problems.		.81
The governments faked some important events to gain a greater number of votes.		.80
Members of the government secretly change the law to legalize their previously illegal actions.		.68
Results of public opinion research are faked to correspond to governments' interests.		.61
The governments pay scientists to publicly present information corresponding to their interests.		.58
Loans that my country receive from other countries are only a way to extend their influence over my country and take control of its resources.		.58
I believe that the voters are the only ones deciding on the results of the elections. *		.37
Official explanations of some events only disguise the fact that they were organized by secret organizations.		.31
I believe that rumors about spying ordinary citizens are unfounded. *		
Stories about powerful organizations controlling human lives via the Internet are a complete nonsense.		

Note. CT - Conspiracy thinking; AtGI = Attitudes towards Government Institutions.

Table B
Descriptive statistics of used scales in Study 2

	M	*SD*	*zSk*	*zKu*
Paranoia	24.56	6.69	3.76	-0.82
MT	31.64	8.96	0.82	-1.39
RWA	86.26	18.14	-0.63	0.96
SDO	41.18	11.34	1.17	-0.35
R	29.63	8.78	1.04	-0.83
SCB	30.32	7.57	-2.51	0.19

Note. MT - Magical thinking; RWA - Right-wing Authoritarianism; SDO - Social Dominance Orientation Scale; R - Religiousness scale; SCB - Specific Conspiracist Beliefs Scale.

Table C
Psychometric properties of instruments used in Study 2

	Paranoia	MT	RWA	SDO	R	SCB
KMO	0.8852	0.9061	0.9622	0.95	0.9622	0.9505
H5	0.6432	0.6707	0.5029	0.6814	0.5029	0.8416

Note. MT - Magical thinking; RWA - Right-wing Authoritarianism; SDO - Social Dominance Orientation Scale; R - Religiousness scale; SCB - Specific Conspiracist Beliefs Scale.

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Jelka Stojanov
Sara Stanisavljević
Višnja Tatić
Aleksa Pantić

Odeljenje za psihologiju, Filozofski fakultet, Univerzitet u Beogradu

KONSTRUKCIJA I VALIDACIJA TESTA ZAVERENIČKOG MIŠLJENJA

Zavereničko mišljenje predstavlja način razumevanja okolnosti od ličnog, društvenog i istorijskog značaja u kome je zavera dominantan faktor. Cilj ovog rada je konstrukcija i validacija Testa zavereničkog mišljenja (TZM) koji teži merenju opšte sklonosti ka zavereničkom mišljenju, nasuprot verovanjima u specifične teorije zavere. U Studiji 1 (N = 356) konstruisana je verzija TZM sa 93 stavke, kasnije skraćena na 23 stavke u okviru faceta Kontrola informacija, Malverzacije na vlasti, Pretnja po sopstvenu državu i Pretnja po ličnu dobrobit. U Studiji 2 (N = 180) proverena je faktorska struktura i validnost finalne verzije TZM. Ekstrahovana su dva faktora: zavereničko mišljenje usmereno na zdravlje i dobrobit osobe (ZM) i stav prema institucijama i predstavnicima vlasti (SPV). U skladu sa očekivanjima, obrazac korelacija između zavereničkog mišljenja i relevantnih konstrukata je potvrdio njegovu konvergentnu valjanost. Takođe, ZM se pokazao kao dobar prediktor verovanja u konkretne teorije zavere. Konvergentna i kriterijumska valjanost, kao i psihometrijske karakteristike sugerišu da se TZM može koristiti kao indikator zavereničkog mišljenja, pri čemu je neophodno proveriti divergentnu valjanost oslanjanjem na druge konstrukte poput crta ličnosti. Pojava drugog faktora može se objasniti korišćenjem stavki čiji je sadržaj bio prevashodno politički. Ovaj faktor ne korelira ni sa jednim od spoljnih kriterijuma što govori u prilog tome da ne odražava zavereničko mišljenje.

Ključne reči: konstrukcija testa, teorije zavere, Test zavereničkog mišljenja, validacija testa