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**RESEARCH ARTICLE**

# Measuring Belief in Conspiracy Theories: Validation of a French and English Single-Item Scale

Anthony Lantian\*, Dominique Muller\*, Cécile Nurra\* and Karen M. Douglas†

We designed, in French and in English, a single-item scale to measure people's general tendency to believe in conspiracy theories. The validity and reliability of this scale was assessed in 3 studies (total  $N = 555$ ). In Study 1 ( $N = 152$ ), positive correlations between the single-item scale and 3 other conspiracy belief scales on a French student sample suggested good concurrent validity. In Study 2 ( $N = 292$ ), we replicated these results on a larger and more heterogeneous Internet American sample. Moreover, the scale showed good predictive validity—responses predicted participants' willingness to receive a bi-monthly newsletter about alleged conspiracy theories. Finally, in Study 3 ( $N = 111$ ), we observed good test-retest reliability and demonstrated both convergent and discriminant validity of the single-item scale. Overall these results suggest that the single-item conspiracy belief scale has good validity and reliability and may be used to measure conspiracy belief in favor of lengthier existing scales. In addition, the validation of the single-item scale led us to develop and start validating French versions of the *Generic Conspiracist Beliefs scale*, the *Conspiracy Mentality Questionnaire*, and a 10-item version (instead of the 15-item original version) of the *Belief in Conspiracy Theories Inventory*.

**Keywords:** Conspiracy theories; single-item scale; individual differences; validation

In a survey conducted in 2011, 25% of American respondents answered “strongly agree” or “agree” to the statement “The current financial crisis was secretly orchestrated by a small number of Wall Street bankers to extend the power of the Federal Reserve and further their control of the world's economy” (Oliver & Wood, 2014, p. 956). Similarly, according to a recent Ipsos survey for *Fleuve Editions* conducted in France in 2014 ( $N = 1500$ ), 20% of respondents believed that the *Illuminati* are pulling the strings of international economic activity (Longuet, 2014). Another survey resulting from a collaboration between *Counterpoint*, *Political Capital*, the *Center for Research on Prejudice*, the *Institute for Public Affairs*, and the *Zachor Foundation* showed that in France, Hungary, and Slovakia, respectively 51%, 42%, and 63% of respondents answered “totally agree” or “rather agreed” to the statement “Actually, it is not the government that runs the country: we don't know who pulls the strings” (Gombin, 2013; Gyárfášová, Krekó, Mesežnikov, Molnár, & Morris, 2013).

Questions like these are intended to measure what is known as belief in *conspiracy theories*. This category of belief is defined as an “unverified and relatively implausible allegation of conspiracy, claiming that significant events are the result of a secret plot carried out by a preternaturally sinister and powerful group of people” (Brotherton & French, 2014, p. 238). Some scholars have argued that conspiracy belief may be empowering, allowing people to confront social hierarchies and offer alternative understandings of social reality (Gray, 2010; Sapountzis & Condor, 2013). However, conspiracy belief is also known to negatively affect political and pro-environmental intentions (Jolley & Douglas, 2014a), intentions to vaccinate (Jolley & Douglas, 2014b), and is positively related to the rejection of scientific findings, such as the established link between smoking and lung cancer (Lewandowsky, Gignac, & Oberauer, 2013). Emerging evidence of the potential consequences of conspiracy belief therefore means that it is important for researchers to have reliable and valid measures of the extent to which people are inclined toward conspiracist thoughts.

It is also worth noting that belief in conspiracy theories constitutes more than simple beliefs about isolated events, and instead forms a higher-order belief system (Dagnall, Drinkwater, Parker, Donovan, & Parton, 2015). Specifically, the extent to which a person endorses one specific conspiracy theory is a good predictor of the extent to which that person will endorse others, and this finding is one of the most robust in the literature (Goertzel, 1994;

\* Université Grenoble Alpes, UFR SHS, 1251 Avenue Centrale, BP 47 38 040 Grenoble Cedex 9 – France Cedex, FR  
Anthony.Lantian@hotmail.fr,  
Dominique.Muller@univ-grenoble-alpes.fr  
Cecile.Nurra@univ-grenoble-alpes.fr

† University of Kent, School of Psychology, Keynes College, University of Kent, Canterbury, Kent CT2 7NP, United Kingdom  
K.Douglas@kent.ac.uk

Corresponding author: Anthony Lantian / Dominique Muller

Sutton & Douglas, 2014; Swami et al., 2011). This *conspiracist ideation* has been interpreted as a manifestation of an underlying *conspiracy mentality* (Moscovici, 1987; Imhoff & Bruder, 2014) or a *monological belief system* of mutually supportive beliefs (Goertzel, 1994). More broadly, it means that conspiracy belief is generally considered as a unidimensional construct and can be seen as a more general indicator of cognitive functioning or *conspiratorial mindset* (Dagnall et al., 2015).

This mindset is sometimes characterized as a thinking disposition, involving lower levels of analytic thinking (Swami, Voracek, Stieger, Tran, & Furnham, 2014). Moreover, empirical evidence shows that people who believe in conspiracy theories have a specific personality profile. Indeed, a significant body of empirical work has explored the relationships between various individual differences variables and conspiracy belief (e.g., Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013; Goertzel, 1994; Swami, Chamorro-Premuzic, & Furnham, 2010; Swami et al., 2011). To name just a few, people who hold conspiracy beliefs are characterized by lower agreeableness (Swami et al., 2010, 2011), lower interpersonal trust (Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Goertzel, 1994; Wagner-Egger & Bangerter, 2007), and higher openness to experience (Swami et al., 2011; Swami et al., 2013).

To build knowledge about the association between personality variables and conspiracy belief, researchers have developed a number of scales designed to measure the extent to which people endorse conspiratorial explanations (Brotherton, French, & Pickering, 2013; Bruder et al., 2013; Douglas & Sutton, 2011; Swami et al., 2010; Wagner-Egger & Bangerter, 2007). Some of these scales measure belief in conspiracy theories about only one specific event, such as the NASA moon landings (Swami et al., 2013), the *Da Vinci code* (Newheiser, Farias, & Tausch, 2011), or even fictitious conspiracies (Swami et al., 2011). Others measure belief in a wider range of well-known conspiracy theories such as those associated with the World Trade Center 9/11 attacks, the death of Princess Diana, the NASA moon landings, and the assassination of President John F. Kennedy (e.g., Douglas & Sutton, 2008; Swami et al., 2010). Other scales still measure what is known as a generalized conspiratorial mindset where more general conspiracist views are examined rather than belief in specific conspiracy theories (e.g., Brotherton et al., 2013; Bruder et al., 2013). Although they take different approaches, all of the existing scales that have been developed to measure conspiracy belief could be, in certain contexts (e.g., in a study where time or the number of questions is limited), reasonably lengthy—all involve participants answering a number of questions and range from 5 questions (Bruder et al., 2013) to 15 questions long (Brotherton et al., 2013; Swami et al., 2010).

Although these scales have proven very fruitful in extending knowledge of the psychological factors that are associated with conspiracy belief, we feel that they may be not suited for all situations. More generally, the choice to include or not to include a scale could be based on pragmatic considerations such as space in a questionnaire or mean time of completion (Konrath, Meier, &

Bushman, 2014). Due to its limited space and short completion time, a single-item measure can increase the likelihood of being included and, by extension, contributing to the knowledge of the personality traits associated with conspiracy belief. Moreover, longer scales can increase the fatigue, boredom, and noncooperation of the respondent (Robins, Hendin, & Trzesniewski, 2001; Robinson, Shaver, & Wrightsman, 1991) and can decrease the response rate compared to shorter scales (Edwards, Roberts, Sandercock, & Frost, 2004). Also, if conspiracy belief needs to be assessed on more than one occasion, lengthier scales pose significant demands on respondents. Finally, a single-item scale could easily be included as a control of the baseline level of the general trend to believe in conspiracy theories or used as a prescreening test. Indeed, answering just one question about conspiracy belief may lead to less suspicion than answering several questions about it. For all these reasons, we propose, through three studies, to validate a single-item scale designed to assess people's tendency to believe in conspiracy theories. To the best of our knowledge, no single-item scale has yet been proposed.

At first glance, it may seem provocative to argue that one can measure a complex construct like conspiracy belief with a single item, especially because there are an immense number of existing conspiracy theories about a vast range of distinct events (Knight, 2003). However, as we already mentioned, knowing the level of people's belief in one specific conspiracy theory helps to somewhat estimate their belief in other conspiracy theories, and belief in conspiracy theories is largely seen to be a general construct rather than a set of separate beliefs. Consistent with this logic, endorsing a specific conspiracy theory has been found to predict the degree to which people endorse even mutually incompatible conspiracy theories (Wood, Douglas, & Sutton, 2012), as well as fictional conspiracy theories (Swami et al., 2011). It is therefore not unreasonable to attempt to tap into a general propensity to believe in conspiracy theories with just a single-item measure.

More generally, it is also important to keep in mind that a number of well-established constructs in psychology have been successfully measured with single-item scales, such as self-esteem (Robins et al., 2001), anxiety (Davey, Barratt, Butow, & Deeks, 2007), and more recently narcissism (Konrath et al., 2014). One could argue, however, that a crucial shortcoming of single-item measures is the increased vulnerability to random measurement errors (Konrath et al., 2014; Schmidt & Hunter, 1996), compared to longer measures that can compensate for accidental errors committed by participants when they answer questions. The answer to this concern is twofold. First, sometimes the primary goal of a researcher is to benefit from the advantages of single-item measures, such as ease of administration, time, and energy savings, even if there is a reasonable reduction in reliability. Second, it is not always the case that single-item scales are associated with poor psychometric properties (Rammstedt & Beierlein, 2014).

## Construction of the Single-Item Conspiracy Belief Scale

Rather than shortening one of the existing scales, which typically use several questions to examine conspiracy belief, our goal was to create a single-item conspiracy belief scale tapping into the general propensity to believe in conspiracy theories. That is, we sought to capture the breadth of conspiracy mentality with a single question. To ensure good face validity, we developed the general instructions of the single-item conspiracy belief scale by modeling it on the instructions given in the introductions to two other conspiracy belief scales (Brotherton et al., 2013; Swami et al., 2010). Notably, we tried to insist on the idea of the existence of debates and controversies about the origin of certain events and allegations of cover-ups. These ideas refer directly to influential definitions of conspiracy belief (Douglas & Sutton, 2008; Keeley, 1999). More specifically, our instructions give examples of political and social events (e.g., the assassination of President John F. Kennedy) that have been the source of numerous conspiracy theories. As in other research, we deliberately chose not to mention the word “conspiracy theory” (Douglas & Sutton, 2008; Wood & Douglas, 2013), knowing that the term may be negatively connoted (Husting & Orr, 2007). The item specifically asked to what extent people think the authorities frequently hide the truth regarding the real origin of some events. Although in the instructions we designate the potential conspirators as “powerful individual or organizations (for example secret services or government)”, we chose to focus the question on attitudes toward the version of the events given by authorities. We did so because the authorities are generally those who establish and disseminate the official explanation. Moreover, systematically questioning the official version provided by authorities is a critical feature of belief in conspiracy theories (Keeley, 1999; Wood & Douglas, 2013). Furthermore, the authorities are easily accused of either being involved, infiltrated, or at least manipulated by the conspirators (Melley, 2002). Like Swami and colleagues (2010), we used a nine-point scale (1 = *Completely false* to 9 = *Completely true*), which allows participants to express a relatively nuanced answer. As a first step, we designed the French version of the scale and this version served as the basis for the English version (see **Appendix A**).

### Overview

The purpose of Study 1 was to assess the concurrent validity of the French version of the single-item conspiracy belief scale by studying the correlations between this new scale and three other scales known to measure conspiracy belief. In Study 2, we replicated the test of the concurrent validity with a larger and more heterogeneous sample, but now using an English version of the scale. In addition, Study 2 examined the predictive validity of the scale. Finally, we designed Study 3 to assess test-retest reliability, as well as the convergent and discriminant validity of the single-item conspiracy belief scale<sup>1</sup>.

## Study 1

### Participants and Procedure

Participants were 152 students from a masters course in education (125 female and two respondents did not indicate their gender), with a mean age of 22.88 years ( $SD = 3.53$ ). During class time, participants completed a booklet containing all of the measures, administered in a counterbalanced order (four possible orders<sup>2</sup>).

### Materials

The single-item conspiracy belief scale was introduced by a short paragraph (see **Appendix A**). It was followed by a single item consisting of the affirmation: “I think that the official version of the events given by the authorities very often hides the truth.” (1 = *Completely false* to 9 = *Completely true*), with a higher score reflecting higher belief in conspiracy theories.

The other scale is the *Generic Conspiracist Beliefs scale* (GCB; Brotherton et al., 2013), which is a 15-item scale (each measured from 1 = *Definitely not true* to 5 = *Definitely true*) that measures conspiracist ideation using 15 generic statements (e.g., “Certain significant events have been the result of the activity of a small group who secretly manipulate world events”). To produce a French version of this scale, three researchers independently translated the scale (with the instructions) from English to French and agreed on a single version. Then, a bilingual researcher back-translated this version from French to English. Finally, one of the three original English-to-French translators plus two other researchers compared the equivalences between the last back-translated version to the original. The few discrepancies were resolved after discussion (see **Appendix B**). The internal consistency of the scale was high ( $\alpha = .85$ ). All of the items were averaged to form a single score, with higher scores indicating higher belief in conspiracy theories<sup>3</sup>.

We also included the *Belief in Conspiracy Theories Inventory* (BCTI; Swami et al., 2010; Swami et al., 2011). Although this scale was originally composed of 15 items (each answered from 1 = *Completely false* to 9 = *Completely true*), we chose, guided by face validity, to present only items referring to events that French people would know about<sup>4</sup>. Thus, we chose 10 items and translated them into French using the same procedure as above. For convenience, hereafter we will refer to this short version of the BCTI scale as the BCTI-10. All of the items were averaged to form a single score ( $\alpha = .83$ ), with higher scores representing higher belief in conspiracy theories (see **Appendix C**).

We also included, the *Conspiracy Mentality Questionnaire* (CMQ; Bruder et al., 2013), a five-item scale (each answered from 0 = *Certainly not* to 100% = *Certain*) intended to measure what the authors refer to as a general conspiracy mentality (e.g., “there are secret organizations that greatly influence political decisions”). We translated all of the items to French with the same procedure as above, and we averaged them to form a single score ( $\alpha = .79$ ), with higher scores

corresponding to higher belief in conspiracy theories (see **Appendix D**).

Finally, participants indicated their gender and age, and were orally debriefed and thanked at the end of the study. No compensation was offered for their participation.

## Results

As can be seen in **Table 1** and as expected, the single-item conspiracy belief scale was positively correlated with the three other conspiracy belief measures. The Pearson's  $r$  correlation coefficients ranged from .41 to .50. More generally, these results seem to indicate a relative stability and homogeneity between all of the bivariate correlations we examined, whichever conspiracy belief scale was used. It is also noteworthy that the relationships between the single-item and the three critical measures were not moderated by order ( $ps > .58$ ). This was also the case in Study 2 ( $ps > .09$ ) and will therefore not be mentioned further.

## Discussion

Study 1 was the first step in examining the validity of our new single-item measure of conspiracy belief. We assessed the concurrent validity of this new scale by exploring its relationship with three other measures of conspiracy belief that are commonly used in the literature. As expected, we found positive correlations between our single-item measure and each of the three other conspiracy belief scales. These correlations are not as high as one

could expect. It is worth noticing, however, these correlations are similar in size to what we found between the other validated conspiracy scales.

In sum, Study 1 has shown that the single-item conspiracy belief scale shares satisfactory variance with other validated instruments intended to capture belief in conspiracy theories. However, two possible weaknesses could be the relative homogeneity of our sample—who were all students from a masters course in education and predominantly women—as well as the modest size of this sample ( $N < 200$ ). We addressed these two weaknesses in Study 2.

## Study 2

Study 2 was conducted on Amazon Mechanical Turk (MTurk), which is a crowdsourcing service that enables researchers to reach a more diverse sample than the traditional samples used in psychology (Berinsky, Huber, & Lenz, 2012; Buhrmester, Kwang, & Gosling, 2011). Because participants on MTurk are mostly American citizens (or people from India, but we restricted our sample to Americans) it also allows us to generalize our results to an American sample. Finally, to test the predictive validity of the single-item measure, we added a quasi-behavioral measure intended to examine if responses on the single-item conspiracy belief scale could predict a subsequent decision related to conspiracy theories—in this case the decision to subscribe to a bi-monthly newsletter about alleged conspiracy theories.

	1. Single-item conspiracy belief	2. GCB <sup>1</sup>	3. BCTI-10 <sup>2</sup>	4. CMQ <sup>3</sup>	5. Age	6. Gender <sup>4</sup>
1.	—					
2.	.50*** [.37, .61]	—				
3.	.50*** [.37, .61]	.66*** [.56, .74]	—			
4.	.41*** [.27, .54]	.55*** [.43, .65]	.38*** [.24, .51]	—		
5.	.01 [−.15, .18]	.01 [−.15, .17]	−.05 [−.21, .11]	.02 [−.14, .18]	—	
6.	.03 [−.13, .19]	.10 [−.07, .25]	.03 [−.13, .19]	.06 [−.10, .22]	.06 [−.10, .22]	—
<i>M</i>	6.32	2.82	3.68	7.19	22.88	—
<i>SD</i>	2.03	0.64	1.42	1.31	3.53	—
<i>N</i>	151 <sup>5</sup>	152	151 <sup>5</sup>	152	149 <sup>5</sup>	150 <sup>5</sup>

**Table 1:** Bivariate Correlations (With 95% Confidence Intervals) Between all the Variables (Study 1).

Notes:

\*\*\* =  $p < .001$ .

<sup>1</sup> GCB = Generic Conspiracist Beliefs scale.

<sup>2</sup> BCTI-10 = Belief in Conspiracy Theories Inventory, 10-items version.

<sup>3</sup> CMQ = Conspiracy Mentality Questionnaire.

<sup>4</sup> Gender is coded −0.5 for woman ( $n = 125$ ) and 0.5 for man ( $n = 25$ ). Values represent point-biserial correlations.

<sup>5</sup> Variation in sample size is due to missing values.

### Participants

We recruited 292 American participants on MTurk. In total, 25 participants were excluded from the sample (although it should be noted that the main findings remain the same when including these participants in the analyses). Of these, 18 were excluded because they made two or more errors on three attention check items explained below (a criterion fixed before the study), two because their answers were considered as being not serious (their answers were the same for every single question), one because they participated twice, two because they were not Americans, one because their data were not correctly recorded, and one because they expressed suspicion about the authenticity of the newsletter. In total, our final sample was composed of 267 participants (161 women,  $M_{age} = 34.69$ ,  $SD_{age} = 12.55$ ). Participants were paid US\$ 0.30 for their participation.

### Materials and Procedure

The materials and procedure of Study 2 were the same as Study 1 with four exceptions: (1) all of the material was in English, (2) because we no longer used a French sample, we provided the complete version of the BCTI (15-item version) instead of the 10-item version, (3) three attention check items were added throughout the study to detect non-diligent participants, such as “so we can be sure that you are reading the questions carefully, please answer “Completely True” to this question” (Jolley & Douglas, 2014b), (4) thanks to Qualtrics software options (<http://www.qualtrics.com/>), all of the possible order combinations of the four measures of conspiracy belief could be presented, giving a total of 24 possible orders.

After the four conspiracy belief measures, we added a quasi-behavioral measure (see **Appendix E**). This measure gave participants the possibility of registering for a newsletter (with the frequency of two private messages a month) about alleged conspiracy theories. To respect the anonymity of participants and avoid a floor effect, participants did not need to enter their email, but simply to choose between “yes” or “no” to receive this newsletter *via* private messages on MTurk. Importantly, we specified that their decision regarding this newsletter would have no impact on their payment. At the end of the procedure, just after entering demographic information as in Study 1, participants were thanked and debriefed about the true objective of the study and the fact that the newsletter was bogus.

### Results

All the results are presented in **Table 2**. The single-item conspiracy belief scale was again significantly and positively correlated with the three other conspiracy belief scales measured<sup>5</sup>. All three bivariate Pearson's  $r$  correlation coefficients fell within a range of .66 to .72. Unexpectedly, by comparing the three bivariate correlations between the previous French sample and the American sample (by using Fisher  $r$ -to- $z$  transformations) we observed that the effect sizes were significantly stronger in the American sample (Study 2) than in the French sample (Study 1).

Regarding the quasi-behavioral measure, 27.72% ( $n = 74$ ) of the participants agreed to register for the newsletter about alleged conspiracy theories. More important, a point-biserial correlation between the single-item conspiracy belief scale and the decision to register for the newsletter revealed a significant relationship between these two variables (note that a logistic regression also revealed a significant relationship,  $p = .008$ ) such that higher responses on the single-item measure predicted greater willingness to receive the newsletter. It must also be mentioned that the three other conspiracy belief measures were also significant predictors of agreement to register for the newsletter.

### Discussion

Study 2 provides additional support for the concurrent validity of the single-item conspiracy belief scale by successfully showing that it shares a substantial amount of variance with the other lengthier measures of conspiracy belief. It is also noteworthy that in Study 2, we found large correlations (with small confidence intervals) while some of the correlations were only modest in Study 1. These differences could be due to cultural differences or to other factors that varied between our two studies, such as the mode of administration (internet versus pencil-and-paper studies) or differences in sample homogeneity. For instance, one might wonder whether the gender imbalance in Study 1 (with a majority of women in the sample) could be responsible for these differences. This seems unlikely, however, because in Study 1 (with a majority of women in the sample) the sizes of these correlations were descriptively larger for women. Again, this result adds evidence for the convergent validity of the single-item scale.

Finally, we were also able to provide evidence for the predictive validity of the single-item conspiracy belief scale by showing that responses on this scale predicted who agreed to receive a newsletter about alleged conspiracies (even if the size of the effect is only small-to-medium, see Cohen, 1992). Because this decision was also predicted by the other three measures, this adds to both to the validation of our scale (by showing that our scale as well as previous scales predicted the same behavior) and to the other scales. Indeed, it should be emphasized that so far, the predictive validity of conspiracy belief at the behavioral level has not been well investigated. With the exception of a small number of studies that have measured behavioral intentions (e.g., Jolley & Douglas, 2014a, 2014b), little is known about how conspiracy belief may influence people's decision-making and then their actual behaviors. Thus the present findings also represent a contribution regarding the extent to which conspiracy belief may translate at least into low level action (i.e., asking for more information about conspiracies).

### Study 3

In Study 3, we aimed to assess the test-retest reliability, as well as the convergent and discriminant validity of the single-item conspiracy belief scale. Because it was necessary to test the same participants on two separate

	1. Single-item conspiracy belief	2. GCB <sup>1</sup>	3. BCTI <sup>2</sup>	4. CMQ <sup>3</sup>	5. Newsletter <sup>4</sup>	6. Age	7. Gender <sup>5</sup>
1.	–						
2.	.72*** a (z = 3.49) [.66, .77]	–					
3.	.66*** a (z = 2.55) [.59, .72]	.83*** a (z = 3.85) [.79, .86]	–				
4.	.70*** a (z = 4.20) [.64, .76]	.75*** a (z = 3.46) [.70, .80]	.65*** a (z = 3.65) [.58, .72]	–			
5.	.16** [.05, .28]	.20*** [.09, .32]	.17** [.05, .28]	.16** [.04, .27]	–		
6.	–.04 [–.16, .08]	–.14 <sup>(†)</sup> [–.26, –.02]	–.08 [–.19, .04]	–.06 [–.18, .06]	.07 [–.05, .19]	–	
7.	–.04 [–.16, .08]	–.03 [–.15, .09]	–.00 [–.12, .12]	–.11 <sup>(†)</sup> [–.23, .01]	–.14 <sup>(†)</sup> [–.26, –.02]	–.04 [–.16, .08]	–
<i>M</i>	5.87	2.78	4.01	6.96	–	34.69	–
<i>SD</i>	2.32	0.93	1.76	1.93	–	12.55	–
<i>N</i>	267	267	267	267	267	267	267
$\alpha$	–	.94	.92	.84	–	–	–

**Table 2:** Bivariate Correlations (With 95% Confidence Intervals) Between all the Variables (Study 2).

Notes:

<sup>†</sup> =  $p = .072$ . \* =  $p < .05$ . \*\* =  $p < .01$ . \*\*\* =  $p < .001$ .

The symbols <sup>(†)</sup> and <sup>(††)</sup> mean that these effects were not predicted and do not remain significant or marginally significant when correcting the alpha level with a Bonferroni correction.

<sup>1</sup> GCB = Generic Conspiracist Beliefs scale.

<sup>2</sup> BCTI = Belief in Conspiracy Theories Inventory.

<sup>3</sup> CMQ = Conspiracy Mentality Questionnaire.

<sup>4</sup> Newsletter is coded –0.5 for answer “no” ( $n = 193$ ) and 0.5 for answer “yes” ( $n = 74$ ). Values represent point-biserial correlations.

<sup>5</sup> Gender is coded –0.5 for woman ( $n = 161$ ) and 0.5 for man ( $n = 106$ ). Values represent point-biserial correlations.

<sup>a</sup> Indicates that the bivariate correlation found in Study 2 is significantly different ( $p < .05$ ) from the bivariate correlation found in Study 1. Comparisons have been made by using Fisher's  $r$ -to- $z$  transformations ( $z$  values are indicated in brackets). To be strictly comparable, comparisons involving BCTI variable have been made by taking only the 10 items from the BCTI 10-item version ( $M = 3.91$ ,  $SD = 1.85$ ,  $\alpha = .89$ ).

occasions, we went back to using a French sample (with a different sample from Study 1). To examine convergent validity, we measured paranormal belief, which is known to correlate positively with responses on existing conspiracy belief scales (Brotherton et al., 2013; Darwin, Neave, & Holmes, 2011; Lobato, Mendoza, Sims, & Chin, 2014). We also measured interpersonal trust which is known to correlate negatively with conspiracy belief (Abalakina-Paap et al., 1999; Goertzel, 1994; Wagner-Egger & Bangertner, 2007). We expected the same pattern of results using our single-item conspiracy belief scale. Regarding discriminant validity, we measured self-consciousness since there are no theoretical reasons to predict a substantial positive or negative relationship with conspiracy belief.

### Participants and Procedure

We recruited 111 French psychology undergraduate students (95 female, and one respondent who did not indicate their gender), with a mean age of 21.66 ( $SD = 5.34$ ). The study took place in two sessions separated by 14 days.

Level of belief in conspiracy theories was assessed at Time 1 ( $N = 96$ ) and re-assessed at Time 2 ( $N = 90$ , among which 75 had participated at both Time 1 and 2) with four additional measures detailed below. We administered these measures in a counterbalanced order (three possible orders), with the single-item conspiracy belief scale always in first position to avoid unwanted sources of variation.

### Materials

To assess test-retest reliability (only) the single-item conspiracy belief scale was assessed at both Time 1 and Time 2. At Time 2, we introduced the GCB scale (Brotherton et al., 2013) to have a reliable element of comparison. The internal consistency of this scale was high ( $\alpha = .86$ ).

To measure paranormal belief, we used the French version (Bouvet, Djeriouat, Goutaudier, Py, & Chabrol, 2014) of the *Revised Paranormal Belief Scale* (PBS-R, Tobacyk, 2004). The French version of this scale is composed of 24 items (e.g., “Black magic really exists”) with a seven-point rating scale (1 = *Strongly Disagree* to 7 = *Strongly Agree*).



This scale was originally composed of seven dimensions but as in previous investigations we chose to only use a single score, by summing all the items, to form a total paranormal belief score (Darwin et al., 2011; Tobacyk, 2004). Higher scores mean greater belief in paranormal phenomena ( $\alpha = .93$ ).

We also used a French version of the four-item trust scale (Wagner-Egger & Bangerter, 2007), adapted from Goertzel (1994). For example, participants were asked to indicate on a five-point scale (1 = *Not at all*, 5 = *Very much*) to what extent they could trust their neighbors. We averaged the items to create a mean score of trust. Higher scores were indicative of higher levels of trust ( $\alpha = .74$ ).

Self-Consciousness was assessed with a French version (Pelletier & Vallerand, 1990) of the *Revised Self-Consciousness Scale* (Scheier & Carver, 1985). The scale is composed of 22 items (two items are reverse-scored) on a four-point rating scale (0 = *Not at all like me*, 1 = *A little like me*, 2 = *Somewhat like me*, 3 = *A lot like me*). The Revised Self-Consciousness Scale is subdivided into three subscales: private self-consciousness (nine summed items, e.g., "I think about myself a lot", higher score indicates higher private self-consciousness,  $\alpha = .66$ ), public self-consciousness (seven summed items, e.g., "I'm usually aware of my appearance", higher score indicates higher public self-consciousness,  $\alpha = .79$ ), and social anxiety (six summed items, e.g., "I get embarrassed very easily", where higher scores indicate higher social anxiety,  $\alpha = .71$ ).

To ensure that we could connect the answers given by participants at Time 1 and Time 2, each participant was asked to provide a personal code (only known by them) at the beginning of the two sessions. At the end of the study, participants reported their gender and age, and were orally debriefed and thanked. No compensation was offered for their participation.

## Results

We found significant test-retest reliability of the single-item conspiracy belief scale ( $r = .75$ , **Table 3**). This result indicates that the single-item conspiracy belief scale has a good stability over a period of two weeks.

In **Table 3** we present the correlations between all variables (including the single-item scale at both Time 1 and Time 2). Inspection of this table reveals that, in accordance with what could be expected based on the literature, our single-item conspiracy belief scale (both in Time 1 and Time 2) was positively associated with paranormal belief (although only marginally so at Time 1) and negatively associated with interpersonal trust. This suggests good convergent validity of this scale. Additionally, the other conspiracy belief measure (i.e., the GCB) showed the same pattern of relationships with these two variables.

Finally, the non-significant relationship between the single-item conspiracy belief scale and the three sub-dimensions of self-consciousness indicates good discriminant validity. Again, the other conspiracy belief measure (i.e., the GCB) showed the same pattern.

## Discussion

Results of Study 3 show that the single-item conspiracy belief scale has good stability over time. Moreover, the fact that, in agreement with previous findings, this measure is positively related to paranormal belief and negatively related to interpersonal trust, suggests good convergent validity. We also provided evidence for the discriminant validity of the single-item scale by showing small and non-reliable correlations with an unrelated construct (i.e., self-consciousness). This evidence therefore suggests that the single-item conspiracy belief scale has good psychometrics properties.

## General Discussion

The purpose of these three studies was to test the validity of the single-item conspiracy belief scale. Despite its brevity and the limitations inherent to all single-item scales, the three current studies provide evidence that this is a valid and reliable measure of belief in conspiracy theories. More precisely, we demonstrated concurrent validity through the substantial shared variance between this new scale and three existing scales from the conspiracy theory literature. Moreover, Study 2 not only extends the external validity of the measure by using an American sample obtained from the Internet, but also revealed the predictive validity of the scale. We showed that this single-item conspiracy belief scale could predict a subsequent decision (having consequences outside the context of the study) regarding the registration for a bi-monthly newsletter about alleged conspiracy theories.

Study 3 provides further support for the scale by demonstrating that it has good stability over time. In line with good convergent and discriminant validities, this study showed that responses to the single-item scale were associated (or not associated) with measures of personality variables known to be related (or not related) to conspiracy belief. By showing that belief in conspiracy theories is positively associated with paranormal belief and negatively associated with trust, we made a contribution to the cumulative knowledge about the personality characteristics of people who display conspiracist thought.

Further information regarding the psychometric properties of the scale is obtained by collapsing all the data from the three studies ( $N = 514$ , taking only the T1 measure of Study 3,  $M = 6.04$ , 95% CI [5.85, 6.22],  $SD = 2.19$ ,  $Mdn = 6$ , mode = 7, min = 1, max = 9). We can observe that this unimodal distribution is approximately symmetric (skew = -0.51), although slightly negatively skewed. This trend can be additionally highlighted by the value of the mode and the fact that the confidence interval of the mean did not include the middle point of the scale (i.e., 5).

Another important contribution of our work is to provide French versions of three popular conspiracy belief scales: the *Generic Conspiracist Beliefs scale* (Brotherton et al., 2013), the *Conspiracy Mentality Questionnaire* (Bruder et al., 2013), and the *Belief in Conspiracy Theories Inventory* (Swami et al., 2010). As for the GCB, we included our French version of this scale in our two French studies (i.e., Studies 1 and 3). By doing so, our studies provide

	1. Single-item conspiracy belief T1	2. Single-item conspiracy belief T2	3. GCB <sup>1</sup>	4. PBS-R <sup>2</sup>	5. Trust	6. Private self-consciousness	7. Public self-consciousness	8. Social anxiety	9. Gender <sup>3</sup>	10. Age
1.	–									
2.	.75*** [.63, .84]	–								
3.	.50*** [.31, .65]	.54*** [.38, .68]	–							
4.	.22† [–0.01, .43]	.27* [.06, .45]	.36*** [.16, .53]	–						
5.	–.27* [–.47, –.05]	–.22† [–.41, –.02]	–.43*** [–.58, –.24]	–.08 [–.29, .13]	–					
6.	–.10 [–.33, .13]	.01 [–.20, .21] <sup>4</sup>	–.10 [–.31, .11]	.02 [–.19, .24]	.04 [–.17, .24]	–				
7.	–.10 [–.32, .14]	.03 [–.18, .24]	–.05 [–.26, .16]	–.03 [–.24, .19]	.09 [–.12, .29]	.25 <sup>(†)</sup> [.05, .44]	–			
8.	–.01 [–.23, .22]	.14 [–.07, .34]	–.08 [–.28, .13]	.05 [–.17, .26]	–.10 [–.30, .11]	.15 [–.06, .35]	.16 [–.05, .36]	–		
9.	–.22 <sup>(†)</sup> [–.40, –.02]	–.00 [–.21, .21]	–.02 [–.23, .19]	.14 [–.07, .35]	.07 [–.14, .28]	.22 <sup>(†)</sup> [.01, .41]	.17 [–.04, .37]	–.01 [–.21, .20]	–	
10.	–.04 [–.24, .16]	.25 <sup>(†)</sup> [.05, .44]	–.02 [–.23, .19]	.04 [–.18, .25]	.08 [–.13, .28]	–.13 [–.33, .08]	–.22 <sup>(†)</sup> [–.41, –.02]	–.04 [–.24, .17]	.06 [–.13, .24]	–
M	6.04	6.09	2.88	60.79 <sup>4</sup>	2.78	17.66 <sup>4</sup>	13.91 <sup>4</sup>	10.66 <sup>4</sup>	–	21.66
SD	2.02	1.57	0.64	25.18	0.74	3.84	3.71	3.69	–	5.34
N	96	90	90	86 <sup>5</sup>	90	89 <sup>5</sup>	89 <sup>5</sup>	90	110	110

**Table 3:** Bivariate Correlations (With 95% Confidence Intervals) Between all the Variables (Study 3).

Notes:

† =  $p < .064$ . \* =  $p < .05$ . \*\* =  $p < .01$ . \*\*\* =  $p < .001$ .

The symbol <sup>(†)</sup> means that these effects were not predicted and do not remain significant when correcting the alpha level with a Bonferroni correction.

<sup>1</sup> GCB = Generic Conspiracist Beliefs scale.

<sup>2</sup> PBS-R = Revised Paranormal Belief Scale.

<sup>3</sup> Gender is coded –0.5 for woman ( $n = 95$ ) and 0.5 for man ( $n = 15$ ). Values represent point-biserial correlations.

<sup>4</sup> These values do not indicate mean but the sum.

<sup>5</sup> Variation in sample size is due to missing values.



**English version**

Some political and social events are debated (for example 09/11 attacks, the death of Lady Diana, the assassination of John F. Kennedy). It is suggested that the “official version” of these events could be an attempt to hide the truth to the public. This “official version” could mask the

fact that these events have been planned and secretly prepared by a covert alliance of powerful individuals or organizations (for example secret services or government). What do you think?

To answer, please indicate to what extent the sentence below represents how you think about this:

	Completely false					Completely true			
	1	2	3	4	5	6	7	8	9
I think that the official version of the events given by the authorities very often hides the truth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix B**

French version of the *Generic Conspiracist Beliefs* scale (Brotherton, French, & Pickering, 2013).

Il est souvent question de savoir si oui ou non le grand public a accès à toute la vérité concernant diverses questions importantes. Cette brève étude a été conçue pour évaluer vos croyances sur certaines de ces questions. Veuillez indiquer sur l'échelle suivante, s'il vous plait, dans quelle mesure vous croyez que chaque déclaration est susceptible d'être vraie en fonction de l'échelle suivante : *certainement pas vraie, probablement pas vraie, indécis, probablement vraie, certainement vraie.*

1. L'État est impliqué dans le meurtre de citoyens innocents et/ou de personnalités célèbres, et le garde secret.
2. Le pouvoir détenu par les chefs d'État est secondaire comparé à celui de petits groupes inconnus qui contrôlent réellement la politique mondiale.
3. Des organisations secrètes communiquent avec les extraterrestres, mais cachent ce fait au grand public.
4. La propagation de certains virus et/ou maladies est le résultat d'actions délibérées et dissimulées de certaines organisations.
5. Des groupes de scientifiques manipulent, fabriquent ou suppriment des preuves pour tromper le grand public.
6. L'État permet et commet des actes de terrorisme sur son propre sol, camouflant son implication.
7. Un petit groupe secret de personnes est responsable de toutes les principales décisions qui sont prises dans le monde, comme entrer en guerre.
8. Des preuves de contacts extraterrestres sont dissimulées au grand public.
9. Des technologies permettant le contrôle de la pensée sont utilisées sur les gens à leur insu.
10. De nouvelles technologies de pointe qui pourraient nuire à l'industrie actuelle sont gardées secrètes.
11. L'État utilise des personnes comme boucs émissaires pour cacher son implication dans des activités criminelles.
12. Certains évènements importants ont été le résultat de l'activité de petits groupes qui manipulent secrètement les évènements mondiaux.
13. Certaines observations et rumeurs concernant les OVNI ont été planifiées ou organisées pour détourner

l'attention du grand public de véritables contacts extraterrestres.

14. Des expériences impliquant de nouvelles drogues ou technologies sont régulièrement menées sur le grand public à son insu ou sans son consentement.
15. Beaucoup d'informations importantes sont délibérément dissimulées au public pour préserver des intérêts personnels.

**Appendix C**

French version of the *Belief in Conspiracy Theories Inventory* (Swami, Chamorro-Premuzic, & Furnham, 2010).

De nombreuses discussions ont eu lieu concernant différents évènements historiques. Ces discussions suggèrent que la « version officielle » de ces évènements serait une tentative de dissimulation de la vérité au grand public. Ci-dessous, voici une liste d'évènements pour lesquels la version officielle a été contestée. Pour chacun de ces évènements, nous aimerions que vous indiquiez dans quelle mesure vous croyez que la version proposée des évènements (version non-officielle) est vraie ou fausse en cochant la case correspondant au numéro approprié.

1. Un groupe puissant et secret connu sous le nom du Nouvel Ordre Mondial, projette de diriger le monde à travers la mise en place d'un gouvernement autonome mondial qui viendrait remplacer le gouvernement souverain.
2. Les services américains ont intentionnellement créé l'épidémie du SIDA et l'ont administré aux Noirs et aux homosexuels dans les années 70.
3. L'assassinat de Martin Luther King est le résultat d'une conspiration organisée par les services gouvernementaux américains comme la CIA et le FBI.
4. L'atterrissage d'Apollo sur la lune ne s'est jamais passé et a été monté dans un studio de film à Hollywood.
5. La Zone 51 dans le Nevada, aux États-Unis, est une base militaire secrète qui abrite des vaisseaux extraterrestres cachés et/ou des corps d'extraterrestres.
6. Le gouvernement des États-Unis a laissé faire les attaques du 11 Septembre de façon à avoir une excuse pour réaliser leurs objectifs à l'étranger (par exemple les guerres en Afghanistan et en Irak) et nationaux (par exemple l'attaque des libertés civiles) qui ont été déterminés avant les attaques.

7. L'assassinat de John F. Kennedy n'a pas été commis par un tireur isolé, Lee Harvey Oswald, mais par une conspiration organisée pour tuer le Président. . . . les politiciens ne nous disent généralement pas ce qui motive réellement leurs décisions.
8. En Juillet 1947, les forces militaires des États-Unis ont récupéré les débris d'un vaisseau extraterrestre à Roswell, au Nouveau Mexique. Ils ont ensuite caché cet évènement. . . . les agences gouvernementales surveillent étroitement les citoyens.
9. La mort de la princesse Diana n'était pas un accident, mais plutôt un assassinat organisé par des membres de la famille royale britannique qui ne l'aimait pas. . . . des événements qui, en apparence, ne semblent pas avoir de lien sont souvent le résultat d'activités secrètes.
10. Des groupes d'intérêts suppriment, ou ont par le passé supprimé, des technologies qui pourraient produire de l'énergie à coût réduit ou à émission polluante réduite. . . . il existe des organisations secrètes qui influencent considérablement les décisions politiques.

## Appendix D

French version of the *Conspiracy Mentality Questionnaire* (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013)

Pour chacune de ces affirmations ci-dessous, veuillez cocher la case correspondant au chiffre approprié pour indiquer, selon vous, dans quelle mesure vous pensez que ces affirmations sont vraies. Il n'y a pas de réponse objectivement vraie ou fausse, nous sommes intéressés par vos opinions personnelles.

Je pense que :

. . . beaucoup de choses très importantes se produisent dans le monde dont le grand public n'est pas informé.

I am not interested in receiving this newsletter      I am interested in receiving this newsletter

○

○

## Notes

<sup>1</sup> All raw data and statistical scripts corresponding to all of the results presented in this paper are available at <https://osf.io/k6zxr/>.

<sup>2</sup> The four orders were: (1) CMQ/GCB/BCTI-10/single-item ( $n = 37$ ), (2) GCB/CMQ/single-item/BCTI-10 ( $n = 39$ ), (3) BCTI-10/single-item/GCB/CMQ ( $n = 38$ ), (4) single-item/BCTI-10/CMQ/GCB ( $n = 38$ ).

<sup>3</sup> The GCB scale could also be subdivided into five dimensions (Brotherton et al., 2013). Based on the initial structure of the scale, we computed the five dimensions of the GCB: government malfeasance (GM,  $n = 152$ ,  $M = 2.86$ ,  $SD = 0.93$ ,  $\alpha = .67$ ), extraterrestrial cover-up (ET,  $n = 151$ ,  $M = 1.78$ ,  $SD = 0.92$ ,  $\alpha = .86$ ), malevolent global conspiracies (MG,  $n = 152$ ,  $M = 3.05$ ,  $SD = 0.91$ ,  $\alpha = .74$ ), personal well-being (PW,  $n = 152$ ,  $M = 2.51$ ,  $SD = 0.87$ ,  $\alpha = .59$ ), and control of information (CI,  $n = 152$ ,  $M = 3.88$ ,  $SD = 0.73$ ,  $\alpha = .54$ ). The following results present the bivariate correlation coefficient ( $r$ ) between the single-item conspiracy belief scale and each of the GCB's five dimensions in Study 1: single-item/GM = .49, 95% CI [.35, .60],  $p < .001$ ; single-item/ET = .21, [.05, .36],  $p = .01$ ; single-item/MG = .33 [.18, .46],  $p < .001$ ; single-item/PW = .43, [.29, .55],  $p < .001$ ; single-item/CI = .40 [.26, .53],  $p < .001$ .

<sup>4</sup> We retained the item numbers 1-4-5-6-7-8-9-10-11-14 from the BCTI scale, to form the BCTI-10.

<sup>5</sup> Based on the initial structure of the scale, we computed the five dimensions of the GCB: GM ( $n = 267$ ,  $M = 2.90$ ,  $SD = 1.12$ ,  $\alpha = .85$ ), ET ( $n = 267$ ,  $M = 2.27$ ,  $SD = 1.19$ ,  $\alpha = .89$ ), MG ( $n = 267$ ,  $M = 2.68$ ,  $SD = 1.18$ ,  $\alpha = .89$ ), PW ( $n = 267$ ,  $M = 2.59$ ,  $SD = 1.06$ ,  $\alpha = .80$ ), and CI ( $n = 267$ ,  $M = 3.46$ ,  $SD = 0.92$ ,  $\alpha = .66$ ). The following results present the bivariate correlation coefficient ( $r$ ) between the single-item conspiracy belief scale and each of the GCB's five dimensions in Study 2: single-item/GM = .70, 95% CI [.63, .76],  $p < .001$ ; single-item/ET = .55, [.46, .63],  $p < .001$ ; single-item/MG = .65 [.57, .71],  $p < .001$ ; single-item/PW = .59, [.51, .67],  $p < .001$ ; single-item/CI = .54 [.45, .62],  $p < .001$ .

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