Gotcha! Behavioural Validation of the Gullibility Scale

Word count: 5000

Abstract

Every year online scams cause substantial emotional and financial adversity. A recently developed self-report measure of gullibility has the potential to provide insight into how individual differences in gullibility are related to susceptibility to scams. The current study investigated the behavioural validity of the Gullibility Scale and explored individual differences expected to be related to this construct. Undergraduate psychology students ($N =$ 219) initially rated example phishing emails, and completed the HEXACO personality factors, Need for Cognition, Need for Closure, Sense of Self, and the Gullibility Scale. After six weeks, they were sent simulated phishing emails. Respondents who clicked on a link within the simulated phishing emails scored significantly higher on the Gullibility Scale compared to those who chose not to click, providing the first evidence for the behavioural validity of the Gullibility Scale. In addition, gullibility was associated with favourable ratings of the example emails, higher levels of emotionality, and a weaker sense of self. These findings provide further clarification of the psychometric properties of the Gullibility Scale and point to its utility in identifying those at risk of being scammed.

Keywords: Gullibility, Phishing Scams, Vulnerability, Behavioural Validity, Emotionality, Sense of Self

1. Introduction

Exponential growth in the popularity of online platforms has seen a recent increase in the number of online financial scams, and one of the most common methods used in these scams is *phishing*. A phishing scam is a method by which personal information, such as passwords and credit card details, are obtained fraudulently. Often, a phishing scam involves an indiscriminate, mass email approach purported to be sent by well-known, trustworthy organisations (Stay Smart Online, 2019). In 2018, such scams cost Americans over US$2.7 billion with over 350,000 individuals lodging a complaint (Federal Bureau of Investigation Internet Crime Complaint Center, 2018). These alarming statistics highlight the importance of identifying why some people have a greater propensity to fall victim to scams than others.

The tendency to be caught in phishing or other scams might reflect stable individual differences in gullibility. The empirical literature investigating this construct has been limited (e.g., Greenspan, Loughlin, & Black, 2001; Mercier, 2017; Teunisse, Case, Fitness, & Sweller, 2020; Yamagishi, Kikuchi, & Kosugi, 1999), however, Teunisse et al. (2020) recently developed a self-report measure of gullibility, which they defined as "an individual's propensity to accept a false premise in the presence of untrustworthiness cues" (Teunisse et al., 2020, p. 2). Their 12-item Gullibility Scale is reliable and has demonstrated construct validity[1].

In one study, Teunisse et al. (2020) asked respondents to review a series of example scam emails. Gullibility Scale scores reliably predicted the estimated likelihood of responding, the persuasiveness, but not the trustworthiness of the emails. These results suggest that the Gullibility Scale is a useful instrument for measuring the *intention* to engage with unsolicited phishing emails. However, it is unclear whether this intention translates into

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[1] The Gullibility Scale consists of two subscales: Persuadability and Insensitivity. All the analyses in the present paper were conducted using both the full scale and the subscales. However, as the results did not differ, only the results from the full scale are presented.

behaviour, especially since behavioural intentions are thought to be generally poor at predicting an actual change in behaviour (Sheeran & Webb, 2016). This study is a first attempt to investigate the relationship between self-report gullibility and behaviour. Specifically, we investigate whether those who click on a link in a series of simulated phishing emails are more gullible than those who refrain.

The second aim of this study was to extend understanding of the underlying personality facets associated with gullibility. Judges, Gallant, Yang, and Lee (2017) found that older adults who had been victims of fraud were less humble, less honest, and less conscientious than non-victims. They suggested that those lower in honesty-humility may be more susceptible to scams as they are less inclined to negatively appraise unfair situations, and possibly view it as an opportunity to get ahead financially. While these results have important implications for understanding fraud victimisation there has not yet been any attempt to replicate these findings in samples beyond older adults.

Other individual differences such as the need for cognition and the need for closure, may also be related to gullibility. The need for cognition refers to an individual's tendency to enjoy and regularly take part in effortful cognitive activity (Cacioppo & Petty, 1982). An individual with a higher need for cognition will actively seek out and carefully examine information, while an individual with a lower need for cognition will tend to use other strategies to make sense of their environment, such as heuristics (Lins de Holanda Coelho, H. P. Hanel, & Wolf, 2018). Thus, high gullibility is expected to be associated with low need for cognition. Similarly, individuals with a high need for closure exhibit cognitive impulsivity and impatience, and will often rush to a conclusion in an effort to seek out certainty, whereas individuals with a lower need for closure appear to enjoy ambiguity and resist committing to a definitive answer (Kruglanski & Webster, 1996). Accordingly, insensitivity to cues of

untrustworthiness (gullibility) may be related to a high need for closure, as there is a stronger reliance on cognitive shortcuts.

Lastly, those with a weak sense of self might also have a tendency to be gullible. Flury and Ickes (2007) conceptualise a weak sense of self as (a) lack of understanding of oneself, (b) sudden shifts in feelings, opinions, and values, (c) the tendency to confuse one's feelings, thoughts, and perspectives with those of other people, and (d) the feeling that one's existence is fragile. Consistent with the expectation that weak sense of self might be associated with gullibility, Cuperman et al. (2014) found that a low sense of self was associated with a tendency to accept overly inclusive Barnum personality feedback as accurate.

1.1 The Present Study

The primary aim of this study is to determine whether the Gullibility Scale can be behaviourally validated. The second aim is to investigate whether general personality facets, need for cognition, need for closure, and sense of self are associated with gullibility. It was expected that gullibility will be positively associated with not only favourable ratings of a list of example scam emails (as in Teunisse et al., 2020), but also with a tendency to actually engage with simulated phishing emails. It was also predicted that higher scores on measures of need for closure and sense of self will be positively correlated with gullibility, while high scores on the need for cognition will be negatively correlated with gullibility. Finally, we explored the relationship between gullibility and the facets of a general measure of personality (HEXACO-PI-R).

2. Method

2.1 Participants

Approximately 700 undergraduate psychology students were invited to complete the study. Of the 345 students who responded to the study, 117 students were excluded due to

incomplete data. A further nine cases were excluded because they failed attentiveness items. The mean age of the remaining 219 participants was 21.37 years ($SD = 5.52$) and ranged from 17 to 54 years. There were 174 females, 40 males (five did not indicate their gender). Although there is an imbalance of gender, Teunisse et al. (2020) tested for measurement invariance using Multigroup CFA across multiple samples and found no differences in gullibility between genders.

2.2 Measures

2.2.1 Example Phishing Email Stimuli. Twelve example phishing emails selected from a set developed by Williams and Polage (2018) were presented in random order. These emails incorporated content and layout based on actual phishing emails. Respondents rated how likely they would be to respond to each example email ($\alpha = 0.85$), how trustworthy ($\alpha = 0.85$), and how persuasive they found the email ($\alpha = 0.88$), on a scale from 1 (*Very Unlikely/Very Untrustworthy/Not Persuasive at all*) to 7 (*Very Likely/Very Trustworthy/Very Persuasive*).

2.2.2 Gullibility. The 12-item Gullibility Scale (Teunisse et al., 2020) was included to measure gullibility. Each item was scored on a 7-point scale wherein participants rated how true they believed each statement was of them from 1 (*strongly disagree*) to 7 (*strongly agree*). High scores indicated a higher level of gullibility ($\alpha = 0.83$).

2.2.3 HEXACO Personality Traits. The 60-item HEXACO-PI-R Scale (Ashton & Lee, 2009) was included as a general measure of personality. Participants responded on a 7-point scale for each item where they rated how true they believed each statement was of them from 1 (*strongly disagree*) to 7 (*strongly agree*). High scores indicated a stronger presence of that trait (honesty-humility $\alpha = 0.75$, emotionality $\alpha = 0.77$, extraversion $\alpha = 0.83$, agreeableness $\alpha = 0.74$, conscientiousness $\alpha = 0.69$, and openness to experience $\alpha = 0.80$).

2.2.4 Need for Cognition. Cacioppo, Petty and, Kao's (1984) 18-item Need for Cognition Scale was included to measure individual preferences of thinking styles. Participants responded to each item on a 7-point scale by rating how true they believed each statement was of them from 1 (*strongly disagree*) to 7 (*strongly agree*). High scores were indicative of a stronger preference for activities requiring complex cognition ($\alpha = 0.81$).

2.2.5 Need for Closure. Roets and Van Hiel's (2011) 15-item Need for Closure Scale was used to assess the strength of an individual's desire for infinite knowledge on some issue. Participants scored each item on a 7-point scale where they rated how true they believed the statement was of themselves from 1 (*strongly disagree*) to 7 (*strongly agree*). High scores indicated a stronger desire for infinite knowledge ($\alpha = 0.85$).

2.2.6 Sense of Self. The 12-item Sense of Self Scale (Flury & Ickes, 2007) was used to investigate the sense of self. Each item was scored on a 7-point scale where participants rated how much they believed each statement was true of them from 1 (*strongly disagree*) to 7 (*strongly agree*). High scores represented a poorer sense of self ($\alpha = 0.88$).

2.2.7 Demographic Information. Information on age, gender, level of education, and identity (including first and last name, student identification number, and email address) were collected at the end of the survey.

2.2.8 Simulated Phishing Emails. Four simulated phishing emails were adapted from stimuli developed by Williams and Polage (2018); however, they did not appear in our set of example phishing emails. We selected the most commonly used bank for Australian university students and the most commonly used streaming service. Also, Facebook usage is still popular in this demographic and everyone has engaged with the Taxation Office. One email was presented as if it was sent from Netflix with the subject line *"Failed Verification,"* one from the Commonwealth Bank with the subject line *"Incoming Funds Blocked,"* one from Facebook with the subject line *"Your account will be disabled,"* and one from the

Australian Taxation Office with the subject line *"Tax Refund Notification."* Each email contained a personalised greeting, a few sentences outlining an account issue (e.g., "this is to inform you that your account with us has been blocked for receiving payments"), and a prompt to click on a URL to update their details.

2.2.9 Follow-Up Survey. After receiving the last of the four phishing emails, all participants were contacted and invited to provide retrospective ratings. Respondents were presented with an image of each simulated phishing email and asked if they: (a) noticed each of the four emails in their inbox, (b) opened any of the emails, (c) clicked on the link in the emails, and (d) entered personal details. Participants were required to respond *"yes"* or *"no"* to each question.

2.3 Procedure

After receiving ethical approval, the study was conducted over three stages during the university semester. In stage one, the link to the personality survey was posted on an undergraduate psychology course online discussion board. All respondents were required to complete the task of rating 12 example phishing emails, presented in a random order. Then, to reduce the potential for respondent rating fatigue, they were randomly allocated to complete only one of two subsets of personality questionnaires. Half of the respondents completed the Gullibility Scale and the HEXACO-PI-R Scale, while the remaining respondents completed the Gullibility Scale, the Need for Cognition Scale, the Need for Closure Scale, and the Sense of Self Scale[2]. Both the order of the scales as well as the items within each scale were randomised. Demographic information was collected after the personality measures were completed.

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[2] Participants in this group also completed a measure of religious fundamentalism by Altemeyer and Hunsberger (2004). However, this measure was not relevant to the aims of the study. Therefore, the results are not presented here, but are available upon request.

In stage two, approximately six weeks after the initial survey, four simulated phishing emails were sent out and completed via GuidedTrack, an online system that facilitates creation of web applications, surveys, and online experiments. This system allowed us to record the email address of every participant who clicked on the link provided within each phishing email and identify them as "Responders" in our analyses. These emails were sent out approximately 10 days apart in the following order: (1) Netflix, (2) Commonwealth Bank, (3) Facebook, and (4) Australian Taxation Office. If participants opened the email, they were invited to click on a link to update their account details. Those respondents who did were redirected to a landing page that revealed the nature of the deception and reassured them that their personal data would remain confidential. In stage three, approximately two weeks after the last simulated phishing email was sent, participants were invited to complete the follow-up survey[3].

3. Results

3.1 Preliminary Analyses

An analysis of the individual difference measures identified three variables with non-normal distributions: gullibility was positively skewed, honesty-humility was both negatively skewed and leptokurtic, and agreeableness was both negatively skewed and leptokurtic. The methods used to address these non-normal distributions are described in the relevant analyses below. Regarding the simulated phishing emails, there were six responses to the Netflix email, 8 responses to the Commonwealth Bank email, 18 responses to the Facebook email, and 11 responses to the Australian Taxation Office email. There were 37 responses in total: 32 responded to only one email, four responded to two emails, and one responded to three emails.

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[3] The data from this study are available upon request from the corresponding author.

3.2 Intercorrelations for the Personality Measures

Given the non-normal distribution of some of the variables, Spearman's correlations revealed that five measures were significantly correlated with gullibility: emotionality, need for closure, sense of self, conscientiousness, and need for cognition. See the results in Table 1.

Table 1

Zero-Order Correlations between Personality Measures

	Gull.	H	E	X	A	C	O	Cognition	Closure	Sense of Self
Gullibility	-	.042	.255*	-.144	.127	-.307*	-.088	-.215*	.193*	.544**
H		-	.228*	-.022	.387**	.159	.117	-	-	-
E			-	-.024	.028	.012	-.009	-	-	-
X				-	.212*	.120	.168	-	-	-
A					-	-.183	3.207*	-	-	-
C						-	.044	-	-	-
O							-	-	-	-
Cognition								-	-.183	-.217*
Closure									-	.281*
Sense of Self										-

*Note. *p<.05, **p<.0005,* H=Honesty-Humility, E=Emotionality, X=Extraversion, A=Agreeableness, C=Conscientiousness, O=Openness, Cog=Need for Cognition, Closure=Need for Closure.

3.3 Gullibility Scale and Example Phishing Emails

Consistent with the prediction that gullibility is associated with receptivity to scam emails, scores on the Gullibility Scale were correlated with responses to composite ratings of the 12 example phishing email stimuli. Using Spearman's correlations, there were positive correlations between the Gullibility Scale and how persuasive participants found the emails, $r=.19$, $p=.004$, how trustworthy the participants found the email, $r=.18$, $p=.008$, and how

likely participants would consider responding to such emails, $r=.21$, $p=.002$. Scores on these three variables were combined and people who responded to the *simulated* phishing emails ($n=37$) were compared to those who did not respond to those emails ($n=182$). On average, people who responded to the simulated phishing emails rated the example phishing emails significantly higher ($M=95.18$, $SD=29.96$), than those who did not respond to the simulated phishing emails ($M=82.44$, $SD=32.06$, BCa 95% CI: 2.36, 24.05, $t(217)=2.338$, $p=.018$, $d=.04$).

3.4 Gullibility and Responding to the Simulated Phishing Emails

Whereas the above analysis of the example email stimuli suggests that those who are high in gullibility anticipated that they would be receptive to scam emails, we now investigate actual behaviour. Three independent samples t-tests with bootstrapping were conducted to test the hypothesis that respondents who engaged with at least one of the four simulated phishing emails (by clicking a hyperlink) would score higher on the Gullibility Scale than those who did not engage with any of the simulated phishing emails. The first test used the entire sample (Total) which included participants in the non-responders group who might have deleted the simulated phishing email before opening it. As such, the analysis of the entire sample was imprecise and unlikely to reveal any influence of gullibility on engagement with the simulated phishing emails; however, it is included for the purpose of comparison.

The second test investigated mean differences in only those who responded to the follow-up survey (Follow-Up), which was still imprecise, as some responders might not have remembered receiving some of the emails. The third analyses investigated mean differences between those who completed the follow-up survey and had confirmed receiving all four phishing emails (Confirmed Receipt). This third test was expected to have the best chance of

discovering a difference in gullibility between those who engaged with the simulated phishing emails and those who noticed them, but who chose not to respond.

Table 2 displays the number of responders (i.e., a person who engaged with the simulated phishing emails) and non-responders (i.e., a person who did not engage with the simulated phishing emails) in each analysis and the results of each t-test. The first two independent samples t-tests revealed that for the Total sample and the Follow-Up sample, the mean difference was not significant. However, for the Follow-Up sample, the p-value approached significance and it had a medium-sized effect (Field, 2018). For the test Confirmed Receipt group, those who responded to the simulated phishing emails were reliably more gullible than those who did not respond.

Table 2

T-Tests comparing Gullibility of Responders and Non-Responders for the Simulated Phishing Email by Sample

Sample		Group Means					BCa 95% Confidence Interval		
	N	Responder (SD)	N	Non-Responder (SD)	t	p	Low	High	d
Total	37	36.57 (14.24)	182	33.73 (12.29)	1.245	.270	-2.15	7.68	.21
Follow-Up	17	38.88 (13.76)	88	32.31 (11.69)	2.062	.066	-.26	13.78	.52
Confirmed Receipt	6	42.50 (12.18)	34	29.06 (9.72)	3.013	.008*	3.47	24.20	1.22

*Note. *p<.05.*

3.5 Individual Difference Predictors of Gullibility Scale Scores

To investigate which individual difference predicted gullibility, two multiple linear regressions were performed on the data. As two combinations of measures were administered

to two separate groups, they could not be analysed in a single regression. The assumption of normality appeared to have been violated upon inspection of the normal probability plot of the residuals and the Shapiro-Wilk test, $p=.008$. Therefore, bootstrapping was performed for both multiple linear regressions (Field, 2018). Bonferroni adjustments were performed for both analyses with alpha set at .05. Note that the small sample size obtained for each set of personality measures precluded analysis of the relationship between personality and response to the simulated phishing emails.

3.5.1 HEXACO Personality Factors. Scores on the Gullibility Scale were significantly predicted by a combination of the six HEXACO personality factors, $R^2=.17$, $F(6, 103)=3.68$, $p=.002$. Higher scores on the emotionality items were associated with an increase in gullibility of 0.40 points per unit increase in emotionality, controlling for all other variables in the model (BCa 95% CI: 0.139, 0.649, $p=.003$). Scores on the other HEXACO factors did not significantly predict gullibility scores (see Table 3).

Table 3

Regression Analysis Summary for HEXACO Predicting Gullibility

	Beta Coefficients			Bootstrap				
Variable	Unstan.	Stan.	Bias	Std. Error	p	BCa 95% CI		
						Lower	Upper
(Constant)	34.982		0.111	1.129	.000*	32.610	37.584
Honesty-Humility	-0.032	-.023	0.009	0.152	.850	-0.309	0.259
Emotionality	0.401	.283	-0.002	0.127	.003*	0.139	0.649
Extraversion	-0.080	-.060	0.000	0.127	.537	-0.338	0.163
Agreeableness	0.152	.096	-0.012	0.149	.316	-0.135	0.408
Conscientiousness	-0.437	-.256	0.003	0.166	.008	-0.774	-0.099
Openness to Experience	-0.089	-.069	0.004	0.127	.479	-0.345	0.191

Note. p=<.008, Unstan=Unstandardized, Stan=Standardized*

3.5.2 Need for Cognition, Need for Closure, and Sense of Self. Scores on the

Gullibility Scale were significantly predicted by a combination of need for cognition, need

for closure, and sense of self, $R^2 = .29$, $F(3, 104)=14.39$, $p=<.001$. Higher scores on the Sense

of Self Scale were associated with an increase in gullibility of 0.48 points per unit increase in

sense of self, controlling for all other variables in the model (BCa 95% CI: 0.282, 0.572,

$p=<.001$). Scores on the measures of need for cognition and need for closure did not

significantly predict gullibility scores (see Table 4).

Table 4

Regression Analysis Summary for Need for Cognition, Need for Closure, and Sense of Self
Predicting Gullibility

| Variable | Beta Coefficients | | Bias | Bootstrap | | BCa 95% CI | |
	Unstan.	Stan.		Std. Error	p	Lower	Upper
(Constant)	33.611		0.038	1.000	.000*	31.708	35.639
Need for Cognition	-0.088	-.087	0.003	0.091	.331	-0.270	0.094
Need for Closure	0.079	.081	0.002	0.082	.336	-0.092	0.248
Sense of Self	0.423	.479	-0.001	0.075	.000*	0.282	0.572

*Note. p=<.017**

4. Discussion

This study provided the first behavioural validation of the Gullibility Scale: those who

were high in gullibility were more likely to engage with simulated phishing emails than those

who were low in gullibility. In addition, weak sense of self and high emotionality were

identified as important personality facets of gullibility. These findings add to the personality

profile of the gullible person and demonstrate the power of the self-report Gullibility Scale to

predict susceptibility to being gulled.

In terms of the behavioural validity evidence, those high (vs. low) in gullibility were

more likely to click a hyperlink in the content of simulated phishing emails and enter their

details. Whereas intentions are often poor predictors of behaviour (e.g., Sheeran & Orbell,

2000), the results of this study demonstrate that the Gullibility Scale predicts both intention to respond to scam emails (supporting Teunisse et al., 2019) and actual behaviour. Further, gullibility predicted how persuasive and trustworthy the list of hypothetical emails was rated. Finally, although only around 20% of respondents fell for the simulated phishing emails in this study (see Table 2), the differences in gullibility between those who clicked on the hyperlink contained in the simulated phishing emails and those who did not was reliable.

The findings for personality revealed that emotionality (i.e., higher levels of anxiety, fearfulness, emotional reactivity), but not other HEXACO factors, was a significant predictor of gullibility. Those high in emotionality also tend to be more persuadable (Rocklage, Rucker, & Nordgren, 2018), which is a key component of the Gullibility Scale. These results highlight that people who are naturally inclined to be more emotionally reactive are consequently more likely to be persuaded by scam material.

Although Judges et al. (2017) obtained evidence that scam victims were more likely to be low in honesty-humility and conscientiousness, we did not observe any reliable relationship between these facets of personality and the Gullibility Scale. It is possible that this might reflect the inclusion of exclusively older adults in Judges et al.'s sample. While not reliable, the relationship between gullibility and both honesty-humility and conscientiousness in this study was still in the expected direction using a younger sample.

Consistent with expectations, those with a weaker sense of self also tended to have higher scores on the Gullibility Scale. This suggests that the relationship between a weaker sense of self and the tendency to believe false information extends beyond use of the Barnum paradigm (Cuperman et al., 2014) to include a more general proclivity to be gullible, providing further evidence of the construct validity of the Gullibility Scale.

Unexpectedly, neither need for cognition nor need for closure were related to gullibility in this study. We reasoned that the greater reliance of heuristics, in those low in

need for cognition and in those high in need for closure, might increase gullibility. However, heuristic thinking might serve as a way to identify untrustworthiness cues, and consequently dismiss deceptive material without further critical analysis. Consistent with this, people with a higher need for closure have been found to show an aversion to material that is lacking in sincerity (de Dreu, Koole, & Oldersma, 1999). While substantive processing (associated with higher need for cognition or low need for closure) is likely to protect individuals from missing false information or untrustworthiness cues, it is possible that reliance on heuristics serves a different protective function through quick identification of ambiguous or factitious content. This protective function may explain why a reliable relationship between gullibility and need for cognition or need for closure was not found in this study.

4.1 Limitations and Future Directions

One potential limitation of this study is that the initial stage of the study, which included rating a set of example phishing emails and completing the Gullibility Scale, might have influenced responses to the subsequent simulated phishing emails. We think this is unlikely because there was a substantial delay (at least six weeks) between completing the first stage of the study and receiving the simulated phishing emails. Moreover, respondents were not told how many simulated phishing emails they would receive, nor were they told when these would be sent. Accordingly, most respondents likely forgot that they were to receive a phishing email as part of the study. Also, there were no cues in the simulated phishing emails that they were sent as part of the study, and there was no overlap between the emails in the example and simulated sets. Furthermore, if it were obvious to many participants (including those who scored high on the Gullibility Scale) that the simulated phishing emails were part of the initial study, it would have worked against our hypothesis, weakening the behavioural validity results; notwithstanding, the results were reliable.

Although it would have been ideal to present the incremental validity of the Gullibility Scale by including the other variables measured (i.e., HEXACO, Need for Cognition, Need for Closure, and Sense of Self) in the analysis regarding engagement and responding to scam emails, it was not practical with the current sample. Half the sample completed the HEXACO and the other half completed the remaining measures. As the number of participants who engaged with the scam emails was quite small (as this is typically a low incidence behaviour), halving that in order to test the incremental validity would then affect our ability to detect an effect (possibly resulting in the Type 2 error). However, this would be vital to test in future studies. Lastly, the final group we analysed had a small sample size. Although this is not ideal, engaging with scam emails is a low incidence event with most people simply deleting such emails before even opening them. Thus, it would be difficult to get a sufficiently large sample with roughly even numbers in both groups.

The findings of this study provide the first evidence the Gullibility Scale predicts responding to phishing emails. One clear direction for future research is to investigate whether those scoring high on the Gullibility Scale are also susceptible to other scams (e.g., financial scams, romance scams etc.). To the extent that a scam involves discernible untrustworthiness cues, the Gullibility Scale should serve as a reliable measure of susceptibility, regardless of the specific type of scam.

4.2 Conclusions

Overall, this study provided further clarification of the psychometric properties of the Gullibility Scale, including evidence that it can predict behaviour. With the proliferation of online scams, there is an urgent need for psychological research directed towards understanding the factors that make some people more prone to scams than others. The Gullibility Scale is proving to be a useful self-report measure for identifying those who are

most susceptible to scams; a crucial first step in combatting the emotional and financial

consequences of fraud.

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