# Myths in psychology: Psychological misconceptions among Spanish psychology students

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Myths in Psychology are beliefs that are widely spread and inconsistent with the empirical evidence available within this field of knowledge. They are characterized by being relatively stable, resistant to change, and prevalent both among the non-academic population and among students and professionals within this discipline. The aim of this study was to analyse the prevalence of these myths among Spanish psychology students and the influence of three variables: the type of university, face-to-face (UAM) and online (UNED), the academic year in which participants were enrolled and familiarity with scientific dissemination. Results show that participants from the face-to-face university, enrolled in higher academic years and that reports familiarity with scientific dissemination believe less in myths than those from the online university, enrolled in lower years and that report no familiarity with scientific dissemination.

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5 Psychological misconceptions among Spanish psychology students

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18                                  **Abstract**

19    Myths in Psychology are beliefs that are widely spread and inconsistent with the empirical evidence

20    available within this field of knowledge. They are characterized by being relatively stable, resistant to

21    change, and prevalent both among the non-academic population and among students and professionals

22    within this discipline. The aim of this study was to analyse the prevalence of these myths among Spanish

23    psychology students and the influence of three variables: the type of university, face-to-face (UAM) and

24    online (UNED), the academic year in which participants were enrolled and familiarity with scientific

25    dissemination. Results show that participants from the face-to-face university, enrolled in higher

26    academic years and that reports familiarity with scientific dissemination believe less in myths than those

27    from the online university, enrolled in lower years and that report no familiarity with scientific

28    dissemination.

29    **Keywords**: myths in psychology, higher education, academic year, scientific dissemination.

30  Myths in Psychology are defined as beliefs about human behavior that are inconsistent with the

31  available scientific evidence but that exhibit great social support (Lilienfeld et al., 2010;

32  Stanovich, 1992). Contrary to certain expectations, these misconceptions are not only believed

33  by people outside of Psychology, but also prevail among professionals within this discipline

34  (Fasce & Adrián-Ventura, 2020; Furnham & Hughes, 2014; Galassi & Gersh, 1993; Hooper,

35  2006; Houben et al., 2019; Lilienfeld et al., 2013; Torres, Boccacini & Miller 2006). Although

36  some studies show that university studies reduce the belief in myths (Bensley, Lilienfeld &

37  Powell, 2014; Hughes et al., 2015; Sibicky, Klein & Embrescia, 2020), it has also been shown

38  that having university studies does not eliminate the belief in myths nor are these beliefs fully

39  replaced with explanations from scientific psychology (Hughes et al., 2015; Lyddy & Hughes,

40  2012; Root & Stanley, 2017). On many occasions, students who begin their studies in

41  Psychology have imprecise and contradictory information about human behavior (Hughes,

42  Lyddy & Lambe, 2013). The resistance to change that characterizes these ideas is due to a

43  history of intermittent and repeated exposure to these false facts through socializing agents such

44  as the media, family or peers (Furnham & Hughes, 2014; Kowalski & Taylor, 2004). This favors

45  the creation of a confirmation bias when presented with new information (Furnham & Hughes,

46  2014; Kowalski & Taylor, 2004). In this way, most popular knowledge is not disproven and

47  cannot be replaced by more adjusted beliefs (Lilienfeld et al., 2010; Stanovich, 1992), which

48  leads, in many cases, to its consequences reaching the professional practice of those students

49  who complete this stage of education (Furnham & Hughes, 2014).

50  Believing that some erroneous statements in psychology are true is not a trivial phenomenon and

51  can lead to serious negative effects, such as the implementation of harmful practices in

52  educational or clinical areas, for example (Lilienfeld et al., 2010). The belief in myths also

53    hinders the development of learning content related to the discipline and critical thinking within

54    and outside of Psychology (Lilienfeld et al., 2010). It can even legitimize existing inequalities in

55    society, such as the differences between men and women, the stigma towards people with mental

56    health problems, or the consequences that derive from the naturalistic fallacy (i.e., where

57    everything natural is desirable and, therefore, unchangeable) (Lester, Strunk & Hoover, 2020;

58    Lilienfeld et al., 2010).

59    The study of misconceptions in Psychology began in the second decade of the 20th century (e.g.,

60    Nixon, 1925, see also Tupper & Williams, 1986). Since then, numerous studies have been

61    carried out, either by reviewing myths in different general areas of Psychology (e.g., Lilienfeld et

62    al., 2010) or by focusing on more specific aspects of the discipline, such as myths about

63    schizophrenia (Furnham & Bower, 1992), ontological development and neuropsychology

64    (Furnham, 2018; Furnham & Grover, 2019), intelligence (Warne, Astle & Hill, 2018) or

65    behavior analysis (Lamal, 1995). However, the study of myths is not limited to behavioral

66    science. The prevalence of myths has been studied in fields such as Education (Ferrero, Garaizar

67    & Vadillo, 2016), Medicine (Kaufman et al., 2013) or public health policies (Viehbeck,

68    Petticrew & Cummins, 2015), as well as in science as a knowledge system (McComas, 1996),

69    and the practical consequences that they entail, such as those caused by the myths of

70    mathematics in their students (Powell & Nelson, 2021).

71

## Relevant factors in the belief in myths in Psychology

73    Several studies show that the progression of the students in psychology education. measured with

74    variables such as the academic year or the course credits earned, is related to the prevalence of

75  myths in the field of Psychology. For example, a positive relationship has been found between

76  academic history and the recognition of myths as such, in addition to a greater predisposition to

77  abandon this type of beliefs (Bensley, Lilienfeld & Powell, 2014; Gardner & Brown, 2013;

78  Gardner & Dalsing, 1986; Gaze, 2014). This effect has been found in pre-post (e.g., Taylor &

79  Kowalsky, 2004, 2009), cross-sectional (e.g., Amsel, Baird, & Ashley, 2011; Gardner & Dalsing,

80  1986) and longitudinal design (McCarthy & Frantz, 2016).

81  Some studies suggest that psychology students are better at recognizing the myths in this

82  discipline than the general population or students from other university degrees (Bensley,

83  Lilienfeld & Powell, 2014; Furnham & Hughes, 2014; Gardner & Dalsing, 1986; Hughes et al.,

84  2015; Sibicky, Klein & Embrescia, 2020). Reaching a higher academic year could indicate a

85  greater interest in the discipline, and with it, a greater desire to further delve into psychology

86  (Furnham & Hughes, 2014). However, although there is a decrease in the belief in myths

87  according to academic year these preconceptions do not always disappear completely

88  (Aleksandrova-Howell et al., 2020; Brown, 1983; Gaze, 2014). For example, Gardner and

89  Dalsing (1986) found that a change only occurs when the person has participated in psychology-

90  related courses to the subject of between 19 and 70 hours. In other cases, such as that of

91  Vaughan's study (1977), it was found that university students from different degrees started, on

92  average, defending 40% of a series of misconceptions about Psychology. Upon completion of an

93  Introductory Psychology Course at university, participants reduced their misconceptions by only

94  5.5% (Vaughan, 1977). Although none of the studies explicitly state the contents of these

95  introductory courses, which may be a relevant limitation, the results that indicate a relative

96  reduction of these misconceptions seem to be replicated in other studies (McCarthy & Frantz,

97  2016; Root & Stanley, 2017). This accumulation of evidence on the decline in myth belief is an

98    indication of the benefits, although limited, that formal education seems to grant as the student

99    progresses through the degree (Furnham & Hughes, 2014; Gardner & Dalsing, 1986; Hughes et

100   al., 2015).

101   The type of university can also be a relevant factor to consider. The different types of

102   universities can be differentiated, mainly, through their teaching modality: face-to-face or online

103   (Harmon & Lambrinos, 2006; Zhao et al., 2005). Each teaching modality can attract different

104   types of students. A common practice in the study of myths among the university population has

105   consisted in recruiting students without considering differences according to degree or university

106   in which these higher studies take place (e.g., see Furnham & Bower, 1992; Gardner & Brown,

107   2013; Vaughan, 1977), to maximize external validity. However, there may be more differences

108   than similarities between students from different university backgrounds. For example, the

109   profile of the average student in a face-to-face public university such as the Autonomous

110   University of Madrid (UAM) is usually that of a young adult between the ages of 18 and 24, who

111   is completing their first undergraduate program, without any added family or work

112   responsibilities (Autonomous University of Madrid, 2019). In contrast, the profile of the average

113   student from a public online learning university, such as the National Distance Education

114   University (UNED) responds to that of an adult, with full-time work, greater family

115   responsibilities and previous studies, who seeks to improve their professional skills (García

116   Aretio, 2006). Regarding age, undergraduate students between 23 and 49 years old tend to

117   choose online universities to pursue an undergraduate program (Stewart, Bachman & Johnson,

118   2010). Such students tend to work more hours weekly than those who choose face-to-face

119   education (Dutton, Dutton & Perry, 2002; Jenkins & Downs, 2003; Mattes, Nanney & Coussans-

120   Read, 2003) and tend to have children and family responsibilities (Conklin, 1997; Dutton, Dutton

121    & Perry 2002; Grimes & Antworth, 1996) In this way, each university could contribute a

122    different student profile and, therefore, could show differences in the belief in misconceptions

123    within Psychology. These variations have not been explored in previous studies and could be

124    relevant in the study of myths in Psychology.

125    Familiarity with scientific dissemination is another factor that may influence the belief in myths.

126    It can be understood as "the use of appropriate skills, media, activities and dialogue to produce

127    one or more of the following personal responses to science: awareness, enjoyment, interest,

128    opinion-forming and understanding" of scientific knowledge (Burns, O'Connor & Stocklmayer,

129    2003). There are various formats for its use, but not all of them or their contents are equally

130    adequate. While reading academic literature can help reduce belief in myths (Furnham, Callahan

131    & Rawles, 2003), familiarity with content on the Internet can be harmful (e.g., Putnam, 2011).

132    This is due, at least in part, to the absence of supervision mechanisms that guarantee that the

133    informative material on the internet transmits information following the scientific evidence

134    available (Lewandowsky et al., 2012). Also, non-expert psychologists could have difficulties

135    distinguishing scientific vs pseudo-scientific dissemination (see Lilienfeld, Ammirati and David,

136    2012) which could result not only to not reduce the belief in myths, but increaseing it. In

137    addition, scientific dissemination can oversimplify scientific facts to make them more accessible

138    to a non-specialized audience, which can lead to misunderstanding research advances and

139    promoting belief in myths (Lewandowsky et al., 2012; Cassany, López & Martí,2000). Finally,

140    disseminating false scientific information on social networks can increase its acceptance as

141    correct information simply due to the mere repeated exposure to it, as occurs in other more

142    conventional media (Begg Anas & Farinacci, 1992; Furnham, Callahan & Rawles, 2003).

143                    **The methodology used in the evaluation of myth belief**

144  To reduce the prevalence of belief in psychological myths, it is first necessary to adequately

145  detect what these myths are, who believes them and how much they believe in them. This is only

146  possible with valid and reliable evaluation methods. However, many studies in this line of

147  research do not report the psychometric properties of their tools, which may affect the

148  generalization of the results when it comes to reliability and validity (Prieto & Delgado, 2010).

149  When studying the prevalence of myths and misconceptions in Psychology, self-report

150  questionnaires have been the default choice as they are a set of tools that allow participants to

151  express both their (dis)agreement and the extent to which they believe that certain statements are

152  true (Bensley & Lilienfeld, 2017; Bensley, Lilienfeld & Powell, 2014; Hughes, Lyddy & Lambe,

153  2013). In this regard, previous literature discusses the relevance of methodological factors such

154  as the response format, content, and psychometric properties of the questionnaires, as well as the

155  characteristics of the samples used in the estimation of myths (Bensley & Lilienfeld, 2017;

156  Hughes, Lyddy & Lambe, 2013; Taylor & Kowalski, 2012). These methodological factors may

157  have influenced how the research was conducted so far, specifically in terms of potential biases

158  (Taylor & Kowalski, 2012).

159  The dichotomous response format (true/false) has been, for many years, the chosen by

160  researchers (Basterfield et al., 2020; Brown, 1983; Ferrero, Garaizar & Vadillo , 2016; Furnham,

161  Callahan & Rawles, 2003; Gardner & Dalsing, 1986; Hughes, Lyddy & Lambe, 2013; Kowalski

162  & Taylor, 2004; Lamal, 1995; Taylor & Kowalski, 2004, 2012; Torres, Boccacini & Miller ,

163  2006; Vaughan, 1977). This format is associated with a series of limitations (Bensley &

164  Lilienfeld, 2017; Griggs & Ransdell, 1987; Hughes, Lyddy & Lambe, 2013). One of them is the

165  acquiescence bias, where participants always respond with an affirmative answer (Bensley &

166  Lilienfeld, 2017), thus recommending that the formulation of the statements should be divided

167 into direct and inverse items to prevent response patterns (Taylor & Kowalski, 2004; Griggs &

168 Ransdell, 1987). If all items represent myths and are worded in such a way that the correct

169 answer is "true", the direct consequence is the overestimation of misconceptions in students as a

170 methodological artifact (Bensley & Lilienfeld, 2015; Griggs & Ransdell, 1987; Taylor &

171 Kowalski, 2012). However, not all studies have carried out this reversal process on items'

172 wording (e.g., see Gardner & Dalsing, 1986; Vaughan, 1977). When the presentation of the items

173 is balanced (i.e., it is established that approximately half of the items are direct and the other,

174 inverse), the resulting prevalence of believing in myths is lower (Brown, 1983).

175 Another limitation of the T/F format is the impossibility of distinguishing between those

176 responses that represent believing in myths and those that are the product of randomly answering

177 one of the two possible responses (Taylor & Kowalski, 2004). One way to control this

178 shortcoming has been to add "I don't know" as a third response option (Furnham, 2018;

179 Furnham, Callahan & Rawles, 2003; Gardner & Brown, 2013; Gardner & Dalsing, 1986;

180 Hughes, Lyddy & Lambe, 2013; Lamal, 1995). Although this can add some bias when evaluating

181 those who are not motivated to answer, its introduction makes it possible to discriminate what

182 the students do not know from what they assume as facts and obtain an answer instead of,

183 perhaps, not answering the item - blank (Furnham & Hughes, 2014; Furnham, Callahan &

184 Rawles, 2003). The introduction of 'I don't know' response option comprises around 12-13% of

185 the responses (Gardner & Brown, 2013; Gardner & Dalsing, 1986) and reduces the estimate of

186 the prevalence of myths by 8%, which generates a closer and more realistic view of the

187 phenomenon (Gardner & Dalsing, 1986). However, there are still limitations to be solved

188 (Hughes, Lyddy & Lambe, 2013).

189    As an alternative to dichotomous T/F scales, the use of Likert-type scales is proposed in this type

190    of research (Gardner & Brown, 2013; Gardner & Dalsing, 1986; Furnham & Hughes, 2014). By

191    representing different levels of response, it is possible to discriminate with greater certainty the

192    degree of confidence that the participant has in the veracity of the statements. Several authors

193    (Furnham & Hughes, 2014; Gardner & Brown, 2013) use questionnaires with scales that frame a

194    gradient of options from "*completely false*" to "*completely true*", allowing for a greater range of

195    answers and not reducing it to a dichotomous choice. Thus, what is being measured is what the

196    participants believe in a more nuanced way than with the dichotomous response format. One

197    problem with this kind of scale is how participants use the central scores. One way is that they

198    use it to report that they do not know if statemet is true or false. However, also participants could

199    used it to report that the sentence is half true. In our view, it is important to give participants the

200    option to report that they don't know about the sentence. Because this reason, we labelled the

201    central value of the scale as "don't know". As commented above, that allow a more accurate

202    measure of the participants' belifs.

203    Others more critical with the methodology have highlighted the content of the questionnaires.

204    The inclusion of myths that are unrepresentative or irrelevant to the discipline, that are not

205    covered by introductory texts, or those that cannot be identified as such, given the available

206    evidence, can bias, in the same way, the estimation of the belief in myths (Bensley & Lilienfeld,

207    2017; Gardner & Dalsing, 1986; Griggs & Ransdell, 1987; Taylor & Kowalski, 2012).

208    Regarding the samples used, the general sample size in this type of study ranges between 100

209    and 200 participants (eg, see Bensley & Lilienfeld, 2015; Brown, 1983; Furnham & Bower,

210    1992; Gardner & Brown, 2013; Taylor & Kowalski, 2012; Vaughan, 1977). In studies that

211    involve the use of questionnaires, the use of a sample size of between 200 and 400 participants is

212  recommended to carry out an adequate psychometric analysis (Abad et al., 2011). However, their

213  characteristic, so far, has been their low homogeneity in terms of participants' population

214  (Bensley & Lilienfeld, 2015, 2017; Furnham & Hughes, 2014). The participants in this type of

215  research are usually university students from different fields of knowledge who enrol in some

216  Introductory Psychology courses (e.g., see Furnham & Hughes, 2014; Gardner & Brown, 2013;

217  Kowalski & Taylor, 2009). This may favor the generalization of the results to the general

218  population, which is a relevant objective, but makes it difficult to study the evaluation of these

219  ideas among psychology students throughout their academic career - and it is relevant to know

220  what happens within formal education. A consequence of this could be the variability presented

221  in the systematic reviews carried out so far. Hughes, Lyddy and Lambe (2013) suggest that

222  students who begin Introductory Psychology courses accept between 28% and 71% of these

223  myths. Other studies indicate a recognition that ranges between 30% to 39% of misconceptions

224  (Taylor & Kowalski, 2012).

225  Despite the extensive research on myths in Psychology in other countries -see, for example,

226  Russia (Aleksandrova-Howell et al., 2020), North America (Basterfield et al., 2020; Bensley &

227  Lilienfeld, 2017; Brown, 1983; Gardner & Brown, 2013), United Kingdom (Furnham, Callahan

228  & Rawles, 2003; Furnham & Hughes, 2014; Furnham & Grover, 2019), India (Kishore et al.,

229  2011)-, a study of the same characteristics has not yet been carried out in Spain.

### The present study

231  The present study aims to provide empirical evidence regarding the belief in myths related to

232  Psychology among students enrolled in the Psychology undergraduate program, considering the

233  previously mentioned variables: the academic year, the university in which they are enrolled and

234  the familiarity with scientific dissemination. To do so, an adaptation of one of the available

235   methodological tools with a Likert scale format and with adequate psychometric guarantees is

236   used, in addition to a large sample size to ensure the representativeness of the phenomenon.

237                                              **Method**

238   **Participants**

239   A sample composed of 916 students from the Degree in Psychology from two Spanish

240   universities was used: Autonomous University of Madrid (UAM) (face-to-face, n = 364, 86%

241   women, aged between 17 and 55 years, $M$ = 20.03, $SD$ = 3.58) and National Distance

242   Education University (UNED) (online, n = 552, 77% women, aged between 18 to 78 years; $M$ =

243   35.8, $SD$ = 11.6) (see Table 1 in the supplemental materials to consult the number of participants

244   by year and university).

245   **Procedure and Materials**

246   Data were collected through participation in the *PsInvestiga* participant recruitment system at the

247   UAM (n = 238) and dissemination by institutional email in both universities (n = 678). All

248   participants completed an online informed consent before the questionnaire.

249   An online questionnaire was sent to participants . This questionnaire measured the demographic

250   data and the belief in Psychology myths. Participants had to fill out the questionnaire

251   individually and their responses were completely anonymous. Before carrying out the task, the

252   student was informed of its purpose and the voluntary nature of their participation. A *demo* of the

253   questionnaire used can be found at this link: https://forms.gle/6J1EkTT7S9G1iLBH7. The

254   realization of this project, as well as the treatment of the collected data, has been approved by

255   both the Research Ethics Committee of the Autonomous University of Madrid (code CEI-95-

256   1758) and by the Ethics Subcommittee of the Faculty of Psychology from the same university.

257 **Demographic measures.** We collected the following data of each participant: age, gender, any

258 other degree previously obtained, the university in which he/she is currently studying

259 Psychology, the highest year of the degree being studied and his/her familiarity with scientific

260 dissemination. Finally, through an open-ended question, participants specified examples of

261 dissemination sources they consult.

262 **Myths in Psychology**. An adaptation of the 55-item questionnaire developed by Gardner and

263 Brown (2013) was carried out. The authors received permission to use this instrument from the

264 copyright holders. Five items were eliminated as they were considered to have little relevance or

265 representativeness for the study and 24 new items were added so that the final questionnaire

266 consisted of 74 items (see Table 2 in the supplemental materials for items excluded and included

267 in the questionnaire). The 74 items, both those used by Gardner and Brown (2013) and those

268 added by authors, were Psychologyextracted statements taken from the book *50 Great Myths of*

269 *Popular Psychology* (Lilienfeld et al., 2010) accompanied by a five-point Likert-type scale,

270 ranging from 1 (*completely sure it is false*) to 5 (*completely sure it is true*), with 3 as the central

271 category (*I don't know*). To control for response bias, some items were reversed: 55.4% of the

272 items (41) were direct and the remaining 44.6% (33) were reversed. Therefore, some items were

273 formulated directly with the statement that is false according to scientific evidence and, in others,

274 the wording indicated the statement was supported by the available evidence. The content of the

275 test sampled different areas of Psychology in a balanced way. When it was presented in Spanish,

276 the standard procedure was followed for its adaptation to the language: translation from English

277 to Spanish by one of the authors, reverse translation by another co-author -from Spanish to

278 English- and a final check carried out by a native expert (independent from the study) to ensure

279 that the two English versions (the original and the back translation) were equivalent. A

280    psychometric analysis of this tool revealed a Cronbach's alpha indicator of 0.85, which indicates

281    acceptable reliability (Abad et al., 2011).

282                                  **Design and data processing**

283    In the present study, a cross-sectional descriptive between-subjects design was used, where the

284    dependent variable was the total score of the "Myths in Psychology" scale. This variable is

285    calculated through the sum of all the scores of each participant's responses with the recoded

286    items (those in which such transformation is required). The higher the scores on the

287    questionnaire, the greater the belief in the myths of this discipline. Three independent variables

288    were taken into account: academic year (with four levels: 1, 2, 3, & 4), type of university (with

289    two levels: face-to-face and online) and familiarity with scientific dissemination (with two

290    levels: Yes / No).

291    To explore the effect of the academic year achieved and of the profile of the Psychology student

292    on the belief in myths, a two-factor ANOVA was performed for independent samples (4x2) on

293    the DV "total score" with "year" and "type of university" as factors. On the other hand, a

294    Student's t-test was performed to analyze the effect of the familiarity with scientific

295    dissemination on the prevalence of these beliefs. It was not incorporated into the previous

296    analysis of variance because of the limitations associated with the number of participants who

297    indicated familiarity with scientific dissemination and the impact it has on the assumptions of the

298    statistical model.

299    Following the recommendations on the dissemination of scientific data (e.g., see Björk et al.,

300    2010; Frankenhuis & Nettle, 2018), the database obtained and used in this study is published on

301    the Open Science Framework platform and is available to any researcher who wishes to consult

302    them at the following link: https://osf.io/tazg9/.

303 **Results**

304 **Descriptives.** The descriptive statistics for the items of the *Myths in Psychology* questionnaire

305 can be found in Table 1, recoded and ordered from highest to lowest score. The graphs of the

306 relative frequencies of items in the total sample can be found in Figures 1-4 in the supplemental

307 materials. The mean of the assessment at item-level across the total sample was 2.62 ($SD = 0.16$).

308 If the data were differentiated according to the type of university, in the face-to-face one there

309 was a value of 2.39 ($SD = 0.82$) and, in the online one 2.79 ($SD = 0.15$).

310 As mentioned, each participant could evaluate each item on a 1-5 scale. We identified means

311 around 4 and 5 [>3.5] (*I think it is true* and C*ompletely sure it is true)* as misconceptions that are

312 accepted by participants. In the other hand, means around 1 and 2 [<2.5] (*Completely sure it is*

313 *false* and *I think it is false*) are considered as detected myths. Therefore, the total sample believed

314 in a total of 9 misconceptions (12.16%); the participants from face-to-face university in 10

315 (13.51%) and the students of online, in 13 (17.56%). Most of the responses revolved around the

316 central score, "I don't know" [2.5-3.5]: for 30 items (40.54%) in the total sample, for 22

317 (29.73%) in face-to-face and for 38 (51.36%) in online. On the other hand, in the total sample, a

318 total of 35 myths (47.3%) were recognized as such; with 42 (56.76%) at face-to-face, and 23

319 (31.08%) at online (see Table 1).

320 The range of total scores in the questionnaire goes from 74 (score 1 in all myths) to 370 (score 5

321 in all myths). The higher the score, the most belief in myths. For the total sample was obtained a

322 mean score of 194.82 points ($SD = 25.11$, *min.* = 128, *max.* = 275) (Figure 1). If the information

323 was analyzed according to the type of university, online presented a higher score ($M = 206.391$,

324 $SD = 22.15$, *min.* = 138, *max.* = 275), in relation to that obtained in face-to-face ($M = 177.274$,

325 $SD = 18.25$, *min.* = 128, *max.* = 240). Higher scores were found among first year students ($M =$

326    202.16; $SD = 24.84$) compared to those in the final year of the Degree ($M = 181.55$; $SD = 20.95$)

327    (see Table 3 in the supplemental materials to consult the means of the total score, according to

328    university and the academic year).

329    **Effects of type of university and academic year on belief in myths in Psychology.**

330    There was a statistically significant main effect of the type of university factor associated with a

331    large effect size, following Cohen's criteria (1988), $F(1,908) = 65.908$, $p < 0.01$, $\eta_G^2 = 0.216$.

332    This effect shows that face-to-face students believe to a lesser extent in this kind of myths, as the

333    mean total score of this university was lower ($M = 177.27$) than that found among the online

334    students ($M = 206.39$).

335    Although with small effect size, a statistically significant effect was found for the academic year

336    variable, which indicates that beliefs differ according to the year in which the participants are

337    enrolled $F(3,908) = 27.256$, $p < 0.01$, $\eta_G^2 = 0.083$. Multiple *post hoc* comparisons with the

338    Bonferroni correction indicated significant differences between the first and the rest of the

339    academic years ($p < 0.01$), as well as between the second and the first year and between the

340    second and the fourth year ($p < 0.01$) (see Figure 2).

341    There was a statistically significant effect of the interaction between these two variables. The

342    influence of the academic year on belief in myths was different for students from the two

343    universities participating in the sample, participants from the face-to-face university were less

344    prone than online one to believe in myths, while the latter benefited more from formal education.

345    Although the effect size found was small ($F(3,908) = 8.944$, $p < 0.01$, $\eta_G^2 = 0.029$) (Figure 2).

346    The summary of the ANOVA results can be found in Table 4 in the supplemental materials.

347    **Effect of familiarity with scientific dissemination**

348 A total of 23.62% (n = 86) of the face-to-face university participants claimed familiarity with

349 scientific dissemination. At the online, this figure rose to 27.17% (n = 150). In total, 236

350 participants (25.76%) reported performing this activity (see Table 5 in the supplemental

351 materials for a scientific dissemination sources classification).

352 The performance of a Student's *t-test* for independent samples with an associated statistic $t_{425,05} =$

353 3,301 ($p < 0.001$; *IC95%* = [2.470, 9.742]) indicates that there was a statistically significant

354 effect of familiarity with scientific dissemination compared to non-familiarity with the belief in

355 myths of Psychology. This effect favors those who claim to do so, by obtaining a lower mean in

356 the total score (Figure 3 and Table 6 in the supplemental materials). However, the effect size

357 found was small (Cohen's d = 0.244).

**Discussion**

359 The present study aimed to analyze the prevalence of psychology-related myths in Psychology

360 students in Spain and the influence of three variables on this prevalence: the academic year they

361 are enrolled in, the university in which they study (associated with different characteristic student

362 profiles) and their familiarity with scientific dissemination. The data analyzed sustained that,

363 within the sample used, the variables of academic year, type of university and familiarity with

364 scientific dissemination had a statistically significant effect on the belief in myths in Psychology.

365 The chosen sample size favored the external validity of the study and the generalization of its

366 results to similar populations. According to the data we obtained, it could be concluded that

367 students were capable of recognizing most of the myths that appeared in the questionnaire as

368 such, while they still lacked certain limited knowledge regarding certain aspects of the discipline.

369 Thereby, belief in misconceptions regarding Psychology in the chosen sample cannot be

370      considered high, compared to the values indicated in Hughes, Lyddy and Lambe's review (2013)

371      or compared to the original study by Gardner and Brown (2013).

372      The effects found concerning to the academic year within the Degree in Psychology and the

373      familiarity with scientific dissemination were statistically significant. However, the reported

374      effect sizes were small. This refers to a limitation of the benefits of the different educational

375      tools (formal, as is the case of the degree; informal, in the case of scientific dissemination),

376      which is consistent with the previous literature (e.g., see Furnham & Hughes, 2014; Hughes,

377      Lyddy & Lambe, 2013). Likewise, the trend that was already reflected in the scientific literature

378      was noted - that as the academic year progressed, the proportion of myths decreased (e.g.,

379      Gardner & Dalsing, 1986).

380      The effect of the type of university was also statistically significant, with an associated effect

381      size larger than that of the other two factors. Similarly, the academic year had a differential effect

382      on the belief in these myths depending on the university where the psychology studies were

383      carried out. Thus, the reduction in the prevalence of myths that was perceived through the

384      academic year was more prominent at online university. Perhaps it is because these students

385      started from a much higher level of misconceptions. This may be due to the different

386      demographic characteristics that separate these students into different groups as, for example,

387      age. While the face-to-face university, UAM, sample was composed of young people studying

388      their first university degree, the online, UNED, sample showed a mean age difference of one

389      decade. Also, participants from online use to have qualitatively higher familiar and working

390      responsibilities compared to face-to-face participants. City or country of residence could also

391      affect to these results, whereas face-to-face students are living in Madrid or near cities, the online

392      ones are spread all over the world. However, we are aware that our data by themselves cannot

393    explain these differences and more research must be conducted to study them and to find out

394    their causes.

395     Previous studies suggest that, in general, the higher the level of studies, the less belief in myths

396    (Furnham & Hughes, 2014; Gardner & Dalsing, 1986). With these data, it could be postulated

397    that online students should believe less in myths. However, these studies have been carried out in

398    comparison with the general population, and not within the Psychology student body itself.

399    Having accumulated prior knowledge of different areas or the priority that the studies they are

400    studying have in their day to day can be examples of other variables that are influencing the

401    belief of myths, ensuring a higher score on this type of scales.

402    It is necessary to emphasize that the effect of formal education that we found is quite limited.

403    Possible explanations for this phenomenon would lie in the analysis of what happens in the

404    classroom. The refutational techniques on popularized ideas about Psychology have proven to be

405    effective in this case; however, they are underused or absent (Bensley & Lilienfeld, 2015;

406    Gardner & Dalsing, 1986). The illustration that is made in some subjects of Psychology as a set

407    of isolated plots of knowledge, without any relation to each other, can also be counterproductive.

408    This is consistent with what some studies pointed out: after discussing misconceptions in class,

409    belief in them decreases, but re-emerges when moving to a different topic (Lyddy & Hughes,

410    2012). It is the so-called *rebound effect* (Lewandowsky et al., 2012). That is, the explanations

411    that are given do not acquire the degree of generalization necessary for them to produce stable

412    modifications over time in the beliefs of the students. In addition, it is possible that belief in

413    myths could be enhanced within the universities. Some authors indicate that problems when

414    teaching introductory courses on the philosophy of science that supports Psychology can

415    influence the subsequent development of misconceptions in this regard (García García et al.,

416  2006). By not knowing the scope, implications, and characteristics of this discipline, it is difficult

417  to distinguish between what is valid and what is not.

418  In this study, familiarity with scientific dissemination proved to have a positive but limited

419  effect. Only a small proportion of the sample claimed to carry out such activity and it was more

420  frequent among the online participants. Two characteristics shared by some sources of

421  dissemination considered is that they are accessible and practical, which favors their propensity.

422  The journals that have the title "Psychology" and other complementary words, widely

423  disseminated without their recognition being due to the scientific quality of their contents, may

424  present partial truths or biased statements that, although well directed, are not completely correct.

425  As they are not reviewed by accredited specialists in the field, there is no possible filter. Part of

426  the reduced effect size found could be explained by this. As reported in Lewandowsky et al.

427  (2012), the fact that now people stopped having a passive role and have begun to create content

428  in the media (often online) can spread misinformation, rather than having an exclusively positive

429  side. Also, social media allow the possibility of creating a community between users with the

430  same interests is added. While the debates that take place online can be enriching, the effect that

431  can be obtained is the opposite when handling information that is not verified. Some studies have

432  already explored the possible advantages of using social networks such as Twitter in the

433  academic world (e.g., see Letierce et al., 2010). Students must be provided with the appropriate

434  tools that will allow them to make the most of these information options.

435  The present study has also some limitations to consider. Firstly, the item presentation order was

436  predefined by experimenters and the same for all participants. This could cause some undesirable

437  effects such as fatigue or practice effects, that affect to participants' responses. Future studies

438  may consider to randomize or counterbalance the order of item presentation to avoid these

439    effects and their influence on the measure of the believe in myths. Also, future studies could

440    measure, not only the belief in myths, but also the participants' knowledge of true ideas about

441    human behavior. That will allow researchers to compare these two approaches and explore if

442    there is a relation between them.

443    Another limitation of our study is related with the measure of the scientific dissemination

444    variable, what could negatively affect our results and make them less precises. While the

445    university and the academic year are easy to answer questions, measuring the familiarity with

446    scientific dissemination is less so. For example, participants may don't know what scientific

447    dissemination is or have an incorrect idea of it. Also, participants could be not able to distinguish

448    scientific vs pseudo-scientific dissemination, which not only will decrease the belief in myths but

449    could it makes increase. Finally, we did not distinguish how much participants are familiar with

450    scientific dissemination. Although our results pointed out that those participants that reported

451    scientific dissemination believing less in myths than those that do not in both universities, to

452    assess this factor more precisely and to delve deeper into how these two variables -being familiar

453    with scientific dissemination and how much so- are related, probably using more than one

454    question to do so, to obtain a more sensible measure.

455    As far we know, the authors of the original test we used did not analyze its construct and

456    convergent validity, neither we do. In order to provide more reliable information, this could be

457    analyzed and reported. Finally, it is recommendable to estimate the sample size needed to

458    achieve adequate statistical power. Here we did not estimate it, but we tried to obtain the most

459    participants as possible. Future research could calculate the minimun necessary sample size

460    following the recommendations for this kind of research (e.g., Hair et al. 2010).

461

462 **Conclusions**

463 The results of the present study offer a sample of the belief in myths in Psychology among

464 students of this discipline in Spain. Thus, there is no clear defense of myths as true statements by

465 psychology students, although a large number of responses were found to be around the mean

466 value of the scale ("*I don't know*"). The main conclusions of the study could be summarized in

467 these three: a) Students enrolled in higher academic years tend to believe less in myths than those

468 who coursing initial years; b) Familiarity with scientific dissemination is paired to a decrement in

469 the belief in myths, although its benefits seem restricted in scope; c) Prevalence of belief in

470 myths varies according to the characteristics of the universities of origin, in such a way that

471 students enrolled in a online university belief more than those who belong to a face-to-face one.

472 Another interesting finding is that participants of online university experience a greater reduction

473 in belief in this type of misconceptions through year, but they do not reach the level from which

474 students enrolled in face-to-face universities start.

475 It is known that accepting myths in psychology as true correlates with accepting other

476 misconceptions in other fields, such as the belief in paranormal events or in pseudoscientific

477 practices as true practices (Bensley, Lilienfeld & Powell, 2014). Given that this type of study is

478 beginning to be carried out in Spain, future lines of research should explore other possible

479 variables, beyond those analyzed in this study, for their connection with the belief in these types

480 of ideas. Identifying the myths currently held by students is the first step in establishing effective

481 interventions. Treating these misconceptions early is necessary to train professionals who, on the

482 applied side, provide the most effective services for their users and that, on the theoretical side,

483 do not compromise the advancement of behavioral science with these obstacles.

484

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692

693 **FIGURES CAPTION**

694     Figure 1. Histogram of the total score obtained in the questionnaire.

695     Figure 2. Effect of the interaction between university and academic year on the total score of the
696          questionnaire.

697     Figure 3. Effect of the familiarity with scientific dissemination on the total score (by type of
698          university).

# Figure 1

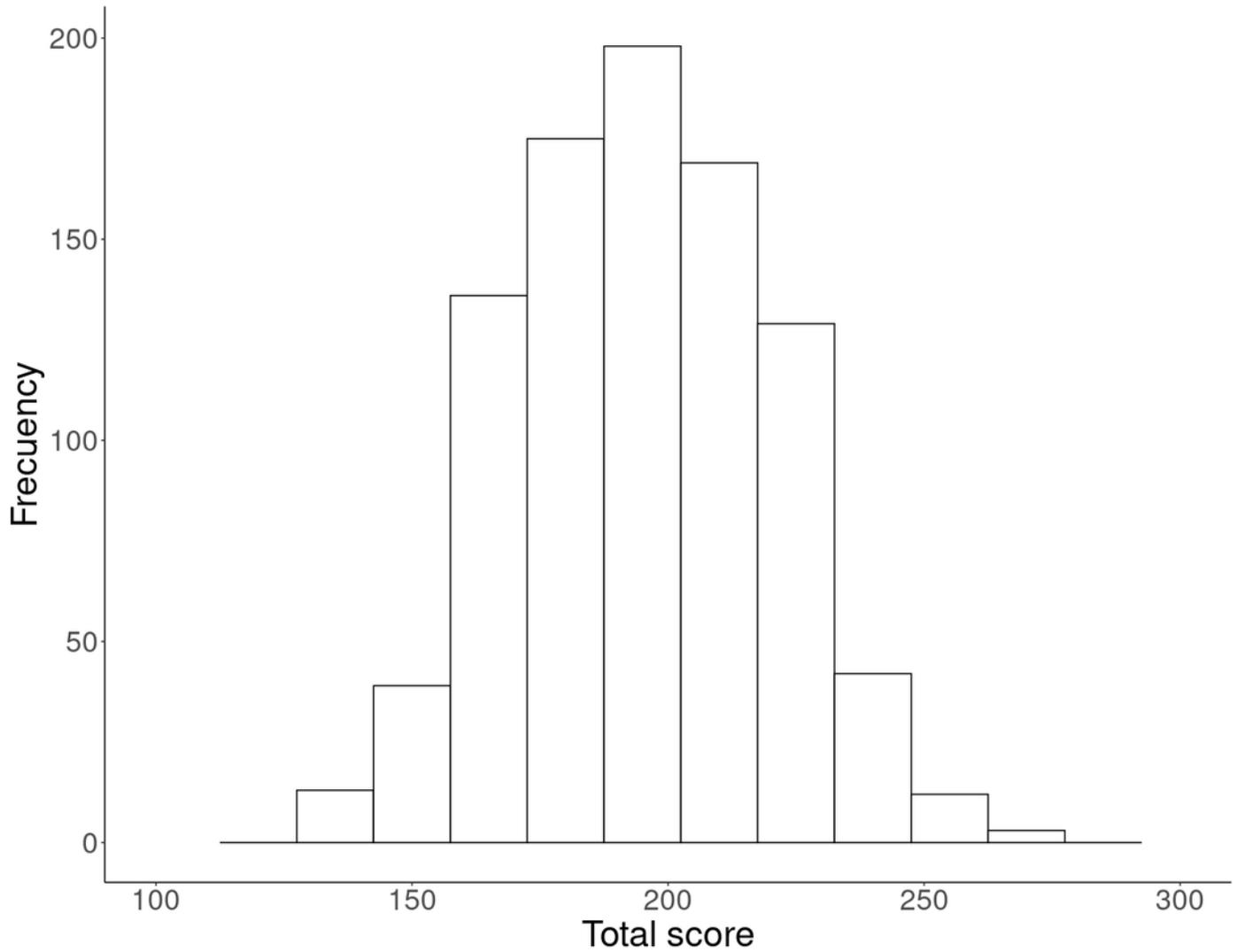
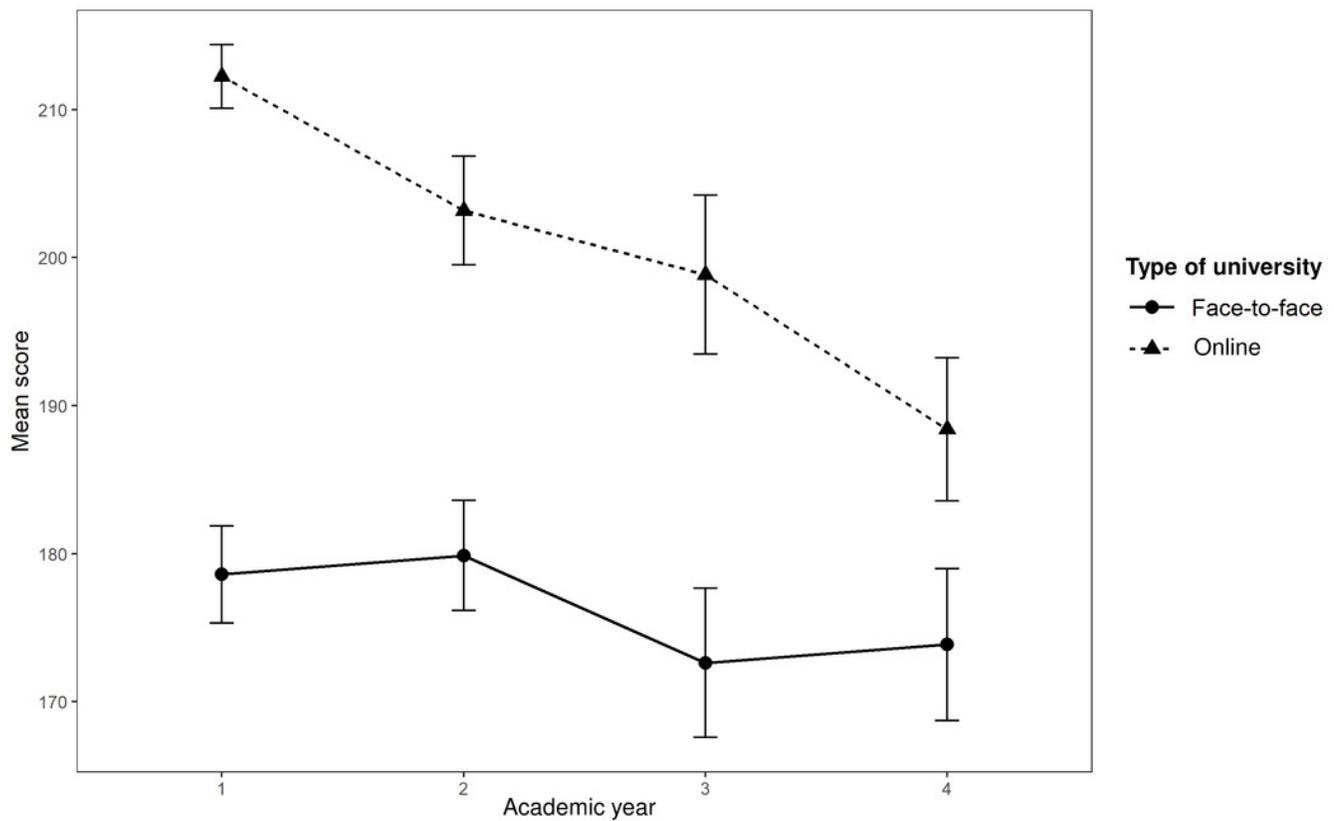
Figure 1. Histogram of the total score obtained in the questionnaire.

# Figure 2

Figure 2

Effect of the interaction between university and academic year on the total score of the
questionnaire.

# Figure 3

Effect of the familiarity with scientific dissemination on the total score (by university).

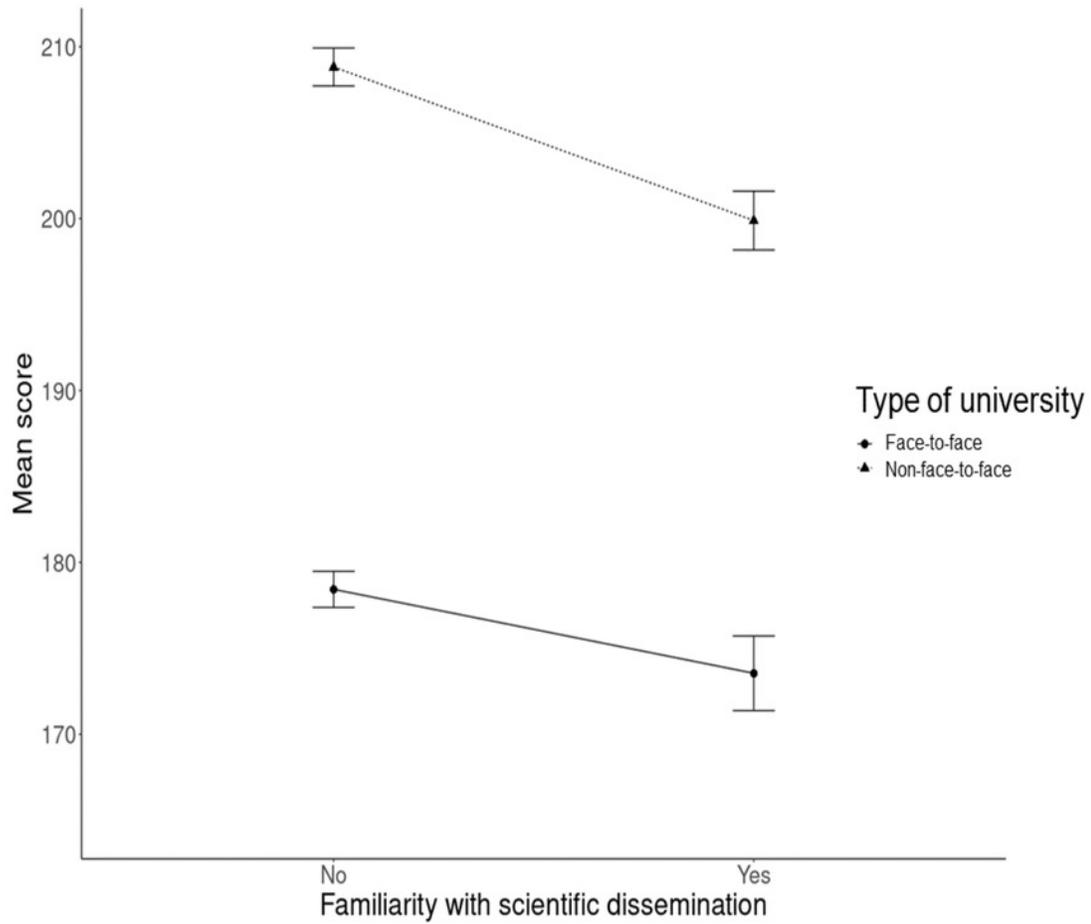



Table 1

Means and standard deviations (in parentheses) of the questionnaire items as a function of
the total and separated by university. Ordered from highest to lowest by the score obtained
in the total sample. Inverse test items are included, recoded, so that a higher mean indicates
greater belief in the misconception.

1    Table 1.

2    Means and standard deviations (in parentheses) of the questionnaire items as a function of the total and separated by

3    university. Ordered from highest to lowest by the score obtained in the total sample. Inverse test items are included,

4    recoded, so that a higher mean indicates greater belief in the misconception.

| ITEM | Total | Face-to-face | Online |
|---|---|---|---|
| | Mean (SD) | Mean (SD) | Mean (SD) |
| 13. Individuals commonly DON'T repress the memories of traumatic experiences. (*) | **4.27** **(1.04)** | **4.03** **(1.14)** | **4.44** **(0.94)** |
| 25. Students learn best when teaching styles are matched to their learning styles. | **4.22** **(0.9)** | **4.10** **(0.88)** | **4.30** **(0.90)** |
| 12. When dying, people DON'T pass through a universal series of psychological stages. (*) | **4.12** **(1.07)** | **3.83** **(1.13)** | **4.32** **(0.98)** |
| 5. Subliminal messages can't persuade people to perform some behaviors. (*) | **4.1** **(1.2)** | **3.95** **(1.23)** | **4.29** **(1.16)** |
| 17. Some people have true photographic memories. | **4.07** **(1.02)** | **3.75** **(1.12)** | **4.29** **(0.89)** |
| 58. Most people who experience severe trauma, (e.g., as in military combat) DON'T develop posttraumatic stress disorder (PTSD). (*) | **3.96** **(1.07)** | **3.80** **(1.11)** | **4.07** **(1.04)** |
| 68. More experienced therapists are generally NO more effective than those with little experience. (*) | **3.77** **(1.09)** | **3.76** **(1.06)** | **3.77** **(1.11)** |
| 28. Hypnotized people are aware of their surroundings and can recall the details of conversations overheard during hypnosis. (*) | **3.7** *(1.12)* | *3.32* *(1.15)* | *2.90* *(1.07)* |
| 72. Electroconvulsive therapy is rarely administered today. | **3.67** **(1.10)** | **3.7** **(1.09)** | **3.66** **(1.12)** |
| 26. Direct instruction is superior to discovery learning. (*) | *3.49* *(1.2)* | *3.41* *(1.14)* | **3.54** **(1.24)** |
| 46. People's attitudes are NOT highly predictive of their behaviors. (*) | *3.48* *(1.21)* | *3.25* *(1.26)* | **3.62** **(1.16)** |
| 21. There is a modest correlation between brain size and IQ in humans. (*) | *3.44* *(1.24)* | **3.55** **(1.31)** | *3.36* *(1.18)* |
| 67. Crowding consistently leads to more aggression. | *3.43* *(1.08)* | **3.61** **(1.03)** | *3.30* *(1.10)* |
| 38. Positive thinking is better than negative thinking for all people. | *3.38* | *2.95* | **3.67** |

| | | | |
|---|---|---|---|
| | *(1.31)* | *(1.28)* | **(1.25)** |
| 15. The memory of everything we've experienced is stored permanently in our brains, even if we can't access all of it. | *3.36* *(1.39)* | *2.91* *(1.42)* | **3.66** **(1.30)** |
| 64. Most people that plead insanity are NOT faking mental illness. (*) | *3.32* *(1.04)* | *3.08* *(0.95)* | *3.47* *(1.07)* |
| 33. Awakening a sleepwalker is NOT dangerous. (*) | *3.29* *(1.4)* | *3.16* *(1.42)* | *3.37* *(1.36)* |
| 7. People become increasingly satisfied with their lives in old age. (*) | *3.20* *(1.09)* | *3.22* *(1.08)* | *3.18* *(1.10)* |
| 50. Most children survive the divorce of their parents without much, if any, long-term psychological damage. (*) | *3.20* *(1.22)* | *2.88* *(1.23)* | *3.42* *(1.17)* |
| 35. Ulcers are caused primarily by stress. | *3.15* *(1.1)* | *3.08* *(1.04)* | *3.20* *(1.13)* |
| 39. Voice stress analyzers can help to detect lying. | *3.13* *(1.23)* | *2.53* *(1.21)* | *3.52* *(1.08)* |
| 23. Irregularly provided feedback best promotes long-term learning. (*) | *2.98* *(1.25)* | *3.02* *(1.27)* | *2.95* *(1.25)* |
| 60. Hallucinations are almost always a sign of serious mental illness. | *2.93* *(1.29)* | *2.54* *(1.20)* | *3.19* *(1.28)* |
| 31. Our brains rest during sleep. | *2.91* *(1.5)* | *2.57* *(1.41)* | *3.13* *(1.52)* |
| 36. Women are NO better than men at accurately guessing the feelings of others. (*) | *2.91* *(1.34)* | 2.4 (1.28) | *3.26* *(1.28)* |
| 4. Extrasensory perception is NOT a real phenomenon. (*) | *2.88* *(1.42)* | 2.38 (1.43) | *3.22* *(1.32)* |
| 44. The best way to change someone's attitude is to give them a large reward to do so. | *2.83* *(1.31)* | *3.08* *(1.34)* | *2.66* *(1.27)* |
| 42. Expressing anger directly toward another person or object makes us more aggressive. (*) | *2.81* *(1.17)* | *3.03* *(1.07)* | *2.67* *(1.20)* |
| 8. Most adopted children are psychologically healthy. | *2.8* *(0.99)* | *2.99* *(1.02)* | *2.71* *(0.96)* |
| 49. Most people who were physically abused as children DON'T go on to become abusers themselves. (*) | *2.8* *(1.21)* | *2.53* *(1.22)* | *2.98* *(1.18)* |
| 57. All clinically depressed people suffer from extreme sadness. | *2.78* *(1.32)* | *2.62* *(1.30)* | *2.89* *(1.33)* |
| 20. IQ scores are relatively unstable during childhood. (*) | *2.77* | *3.04* | *2.59* |

| | | | |
|---|---|---|---|
| | *(1.08)* | *(1.10)* | *(1.03)* |
| 61. Homicide is more common than suicide. | *2.73* | *2.72* | *2.74* |
| | *(1.24)* | *(1.22)* | *(1.26)* |
| 22. As a general rule. students typically recall only 10% of what they read. | *2.71* | 2.35 | 2.95 |
| | *(1.1)* | (1.04) | (1.07) |
| 71. Taking a placebo (i.e. sugar pill) can change brain functioning and its chemistry. (*) | *2.68* | *2.66* | *2.70* |
| | *(1.38)* | *(1.39)* | *(1.37)* |
| 24. Negative reinforcement is a type of punishment. | *2.65* | 1.88 | 3.16 |
| | *(1.61)* | (1.37) | (1.55) |
| 55. People with schizophrenia DON'T have multiple personalities. (*) | *2.65* | 2.31 | 2.88 |
| | *(1.3)* | (1.23) | (1.30) |
| 11. Playing classic music to infants DON'T boosts their intelligence. (*) | *2.63* | 1.82 | 3.16 |
| | *(1.4)* | (1.19) | (1.27) |
| 29. It is impossible to lie under hypnosis. | *2.52* | 2.34 | *2.64* |
| | *(1.01)* | (1.03) | *(0.98)* |
| 27. Hearing material while we are asleep (sleep learning) can be an effective aid to learning. | 2.42 | 1.8 | *2.84* |
| | (1.25) | (1.07) | *(1.20)* |
| 63. The words "insanity" and "sanity" are purely legal NOT psychological terms. (*) | 2.4 | 2.23 | *2.52* |
| | (1.16) | (1.08) | *(1.19)* |
| 73. Expert judgment and intuition are the best means of making clinical decisions. | 2.39 | 2.11 | *2.58* |
| | (1.22) | (1.16) | *(1.24)* |
| 37. Unfamiliarity breeds contempt: We dislike things we have less exposure to. (*) | 2.37 | 2.19 | *2.50* |
| | (1.12) | (1.09) | *(1.13)* |
| 45. Men and women communicate in completely different ways. | 2.3 | 1.81 | *2.61* |
| | (1.18) | (0.98) | *(1.19)* |
| 53. People's responses to inkblots tell us a great deal about their personalities. | 2.29 | 1.52 | *2.80* |
| | (1.29) | (0.97) | *(1.22)* |
| 43. Groups tend to make less extreme decisions than individuals. | 2.28 | 1.94 | *2.52* |
| | (1.4) | (1.23) | *(1.45)* |
| 9. Married couples enjoy more marital satisfaction after they have children. | 2.23 | 2.29 | 2.18 |
| | (0.94) | (0.95) | (0.94) |
| 18. Human memory works like a tape recorder, and accurate records events we've experienced. | 2.16 | 1.54 | *2.57* |
| | (1.23) | (0.94) | *(1.33)* |
| 40. We are most romantically attracted to people who are similar to us. (*) | 2.15 | 1.93 | 2.30 |
| | (1.15) | (1.11) | (1.15) |
| 74. Most modern therapies are NOT based on the teachings of Freud. (*) | 2.14 | 1.92 | *2.29* |

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|  | (1.14) | (1.06) | *(1.17)* |
| 59. Psychiatric hospital admissions and crimes DON'T increase during full moons. (*) | 2.12 | 1.46 | *2.56* |
|  | (1.39) | (1.07) | *(1.41)* |
| 56. There has recently been a massive epidemic of childhood autism. | 2.08 | 2.03 | 2.11 |
|  | (1.10) | (1.09) | (1.12) |
| 1. Most people use only about 10% of their brain power. | 2.07 | 1.24 | *2.62* |
|  | (1.38) | (0.76) | *(1.43)* |
| 6. Humans have an invisible body energy that can cause psychological problems when blocked. | 2.04 | 1.44 | 2.44 |
|  | (1.25) | (0.75) | (1.36) |
| 62. Most rapes are committed by strangers. | 1.99 | 1.96 | 2.02 |
|  | (1.02) | (1.04) | (1.02) |
| 19. Rote memorization is NOT the best way to retain information. (*) | 1.97 | 1.86 | 2.05 |
|  | (1.13) | (1.05) | (1.18) |
| 34. The polygraph (lie detector) test is NOT an accurate means of detecting dishonesty. (*) | 1.96 | 1.36 | 2.35 |
|  | (1.16) | (0.81) | (1.19) |
| 66. Rehabilitation programs have NO effect on the recidivism rates of criminals. | 1.96 | 1.87 | 2.02 |
|  | (0.96) | (0.87) | (1.02) |
| 41. The more people present at an emergency, the greater the chance that someone will intervene. | 1.95 | 1.84 | 2.03 |
|  | (1.34) | (1.35) | (1.32) |
| 14. People with amnesia can still recall some details of their earlier lives. (*) | 1.88 | 1.78 | 1.95 |
|  | (0.97) | (0.93) | (1.00) |
| 16. With effort, we can remember events back to the time of our birth. | 1.86 | 1.46 | 2.13 |
|  | (1.05) | (0.72) | (1.16) |
| 2. Almost all color-blind people can see at least some colors. (*) | 1.84 | 1.85 | 1.84 |
|  | (1.06) | (1.026) | (1.08) |
| 47. We CANNOT tell a person's personality by merely looking at their handwriting. (*) | 1.84 | 1.23 | 2.24 |
|  | (1.19) | (0.72) | (1.26) |
| 52. The fact that a trait is heritable means we CAN'T change it. | 1.83 | 1.64 | 1.96 |
|  | (1.1) | (1.02) | (1.14) |
| 69. Most psychotherapy involves a couch and exploring one's early past. | 1.8 | 1.66 | 1.89 |
|  | (1.15) | (1.11) | (1.17) |
| 51. Obese people are more cheerful ("jolly") than thin people. | 1.71 | 1.6 | 1.87 |
|  | (0.92) | (0.82) | (0.96) |
| 65. Most psychopaths are violent. | 1.68 | 1.52 | 1.80 |
|  | (0.88) | (0.77) | (0.93) |
| 3. Some people are exclusively left-brained while others are right- | 1.67 | 1.27 | 1.94 |

| | | | |
|---|---|---|---|
| brained. | (1.01) | (0.55) | (1.16) |
| 54. Only deeply depressed people commit suicide. | 1.64 | 1.47 | 1.75 |
| | (0.97) | (0.9) | (1.00) |
| 70. Antidepressants are much more effective than psychotherapy for treating depression. | 1.63 | 1.54 | 1.70 |
| | (0.85) | (0.81) | (0.87) |
| 30. Virtually all people dream. (*) | 1.6 | 1.64 | 1.58 |
| | (0.96) | (0.93) | (0.98) |
| 10. Infants establish attachment bonds only to their mothers. | 1.45 | 1.12 | 1.66 |
| | (0.87) | (0.44) | (1.01) |
| 48. Knowing a person's astrological sign predicts their personality traits at better than chance levels. | 1.42 | 1.18 | 1.59 |
| | (0.84) | (0.61) | (0.94) |
| 32. Researchers have demonstrated that dreams possess symbolic meaning. | 1.36 | 1.77 | *2.75* |
| | (1.3) | (1.09) | *(1.29)* |

6  *Note: In bold are those items that exceed the "myth" threshold established by the researchers (Mean*

7  *> 3.5). In italics, those items included in the "I don't know" category (2.5 ≥ Mean ≥ 3.5).*