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Cross-Cultural Consistency and Relativity in the Enjoyment of Thinking Versus Doing

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continued

Which is more enjoyable: trying to think enjoyable thoughts or doing everyday solitary activities? Wilson et al. (2014) found that American participants much preferred solitary everyday activities, such as reading or watching TV, to thinking for pleasure. To see whether this preference generalized outside of the United States, we replicated the study with 2,557 participants from 12 sites in 11 countries. The results were consistent in every country: Participants randomly assigned to do something reported significantly greater enjoyment than did participants randomly assigned to think for pleasure. Although we found systematic differences by country in how much participants enjoyed thinking for pleasure, we used a series of nested structural equation models to show that these differences were fully accounted for by country-level variation in 5 individual differences, 4 of which were positively correlated with thinking for pleasure (need for cognition, openness to experience, meditation experience, and initial positive affect) and 1 of which was negatively correlated (reported phone usage).

Keywords: thinking, individual differences, cultural differences, replication

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People prefer to do almost anything over doing nothing (Hsee, Yang, & Wang, 2010; Wilcox, Laran, Stephen, & Zubcsek, 2016), which may explain why so many of us reach for our phones when we have a spare moment. But why do not we reach into our own minds instead, taking advantage of the opportunity to retrieve pleasant memories, savor future events, construct fantasies, or in some other way enjoy our thoughts? Thinking for pleasure, the act of intentionally directing thoughts to enjoyable topics, could, in principle, be a way to generate positive affect. Some people are able to do this successfully, so much so that it interferes with their everyday functioning, a phenomenon dubbed "maladaptive daydreaming" (Bigelsen, Lehrfeld, Jopp, & Somer, 2016; Somer, 2002). Many people, however, find thinking for pleasure to be effortful and not particularly enjoyable (Wilson et al., 2014).

Recent research has examined why thinking for pleasure is difficult and the conditions under which it can be done more effectively (Alahmadi et al., 2017; Westgate, Wilson, & Gilbert, 2017). Westgate et al. (2017), for example, found that participants instructed to spend a few minutes enjoying their thoughts were better able to do when given a simple thinking aid (a reminder of pleasant topics that they had generated). Alahmadi et al. (2017) found that participants reported greater enjoyment when given the goal to think for pleasure as opposed to thinking about whatever they wanted. The present study had a more basic purpose. Rather than examining the conditions under which people enjoy thinking, it reexamined a simple question investigated by Wilson et al. (2014): Which is more enjoyable—finding pleasure in one's internal world or engaging with the external world?

Wilson et al. (2014, Study 8) randomly assigned participants to either spend 12 min enjoying their thoughts in their own homes or spend the same amount of time on solitary external distractions, such as watching a video or surfing the web. Those in the former condition could choose to think about a virtually endless array of topics, by recalling pleasant events from their pasts, anticipating pleasurable events yet to occur, or fantasizing about events that might never occur. And yet, perhaps because intentional thinking involves mental effort (Westgate et al., 2017), participants found thinking for pleasure to be less enjoyable than performing the external activities. As a convenient shorthand, we will refer to this as a preference for "doing" over "thinking," although it should be kept in mind that these terms refer to specific kinds of both activities, not for all things that can be done or mental activity generally. In the former case, we use *doing* to stand in for doing everyday solitary activities, and in the latter case, we use *thinking* specifically for the act of intentionally trying to enjoy one's thoughts.

The present study had two goals: First, because the initial study demonstrating the preference for doing over thinking had a relatively small sample size, we assessed its replicability. Of more theoretical interest, we examined cultural variations in the preference for doing over thinking. To date, research on thinking for pleasure has been conducted solely with American participants; thus, it is important to assess the generalizability of the phenomenon (e.g., Henrich, Heine, & Norenzayan, 2010). We did so by conducting a direct replication of Study 8 by Wilson et al. (2014) in 11 countries.

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Our primary prediction was that the basic preference for doing over thinking would be robust across cultural contexts. The human mind evolved to engage with the world and to be vigilant for dangers and alert for opportunities (Fiske, 1992; James, 1890), suggesting that there may be a general preference for engaging in the world. In addition, research has found few cultural differences in the preference for action over inaction (Fulmer et al., 2010), suggesting that turning one's attention inward requires cognitive resources that most people—regardless of culture—do not particularly want to spend, especially when pitted against the allure of enjoyable activities such as reading, watching a video, or surfing the web.

Nonetheless, there may be cultural variation in the extent to which people prefer doing over thinking, and a second purpose of the present study was to explore such differences and the reasons for them. If such variation is found, it would increase our understanding of both the mechanisms responsible for the enjoyment of thinking and the nature of the cultural practices that promote them. Research on culture, thought, and personality does in fact suggest that there may be systematic differences in the degree to which people enjoy their own thoughts, but cases can be made for a number of different relationships. On the one hand, one might expect that East Asians would enjoy thinking more than Western participants do, given the dominant religious traditions of each culture. Christianity, in its practice (H. Smith, 1991) and texts (Tsai, Miao, & Seppala, 2007), endorses a more active stance toward the world, whereas Buddhism endorses a more contemplative approach; the latter might result in more experience and comfort with thinking for pleasure. Indeed, in previous studies, we have found that reported experience with meditation modestly predicts how much people enjoying being alone with their thoughts (Wilson, Westgate, Buttrick, & Gilbert, 2018b), suggesting that participants in countries where meditation is a common practice might have an easier time thinking for pleasure. Also consistent with this prediction, Americans strongly prefer doing things to sitting still (e.g., Fulmer et al., 2010; Tsai, Knutson, & Rothman, 2007) and prefer high-arousal positive emotional states such as excitement, whereas East Asians tend to prefer low-affect positive emotional states, such as calm (Tsai, Knutson, & Fung, 2006; Yoshioka, Nilson, & Simpson, 2002).

In addition, cultural differences in technology use, such as time spent on cell phones, might influence the amount of time people spend "just thinking." Americans often use their cell phones in public, for example, whereas such usage is frowned upon in Japan, so much so that Japanese bus drivers will not allow passengers to board if they are talking on their phones (Canton, 2012). The less that people use electronic devices, the more opportunities they may have to practice enjoying their own thoughts, thus suggesting that residents of countries that use phones less might enjoy thinking for pleasure more.

On the other hand, some studies have found systematic cultural differences in personality that might predict that East Asians may enjoy thinking for pleasure *less* than Westerners do. In particular, Schmitt, Allik, McCrae, Benet-Martinez, and Zupanèiè (2007) found that, of the 56 countries in their sample, residents of East Asian countries such as Japan, South Korea, and China had some of the lowest scores on openness to experience. Given that there is a modest positive correlation between openness to experience and the enjoyment of thinking for pleasure (Wilson et al., 2018b), East Asians might enjoy thinking for pleasure less than Westerners do. Another personality variable that correlates with the enjoyment of thinking for pleasure is the need for cognition (Wilson et al., 2018b), which is "the tendency for an individual to engage in and enjoy thinking" (Cacioppo & Petty, 1982, p. 116). We are unaware of any research on cultural differences in the need for cognition, but to the extent that such differences exist, we would expect corresponding differences in thinking for pleasure.

Research on how people actually spend their time suggests a different pattern of cultural differences in the enjoyment of thinking. The Multinational Time-Use Study, a harmonization of more than 60 daily diary studies from 25 countries across over 50 years, shows that Americans report experiencing roughly, on average, 18 min more of "relaxing/doing nothing" on a typical day than do residents of countries such as Israel and Australia (who report experiencing roughly 1 and 3 min, respectively) but less than residents of the United Kingdom (who report experiencing roughly 31 min) or South Africa (who report experiencing roughly 42 min; Gershuny & Fisher, 2013). These differences may be related to the pace of life in these countries: Running around without pause leaves few opportunities to retreat into one's own mind. Because Americans live at a relatively average pace of life (Levine & Norenzayan, 1999), citizens of countries with slower paces, such as Brazil, may have more opportunities to practice enjoying their thoughts and thus may enjoy doing so more than Americans do.

In short, there are a number of differences in practices and personality that might lead people in different cultures to experience different amounts of pleasure and displeasure when "just thinking," but past research makes no clear predictions about which areas of the world should enjoy thinking the most or the least. Indeed, prior studies lead to opposite predictions. Based on experience with meditation, for example, we would expect residents of East Asian countries to enjoy thinking for pleasure more than residents of Western countries, but based on differences in openness to experience, we would expect the opposite.

In the end, it may not be people's country of residence that matters as much as their standing on the specific variables that are correlated with thinking for pleasure. To the extent that these interpersonal differences are geographically clustered, they could result in regional differences. If residents of Country A meditate more often and are higher in openness to experience and need for cognition than residents of Country B, for example, then we might observe country-level differences in the enjoyment of thinking for pleasure (with higher levels in Country A than B). Many countries, however, are likely to be high on some predictors and low on others. An understanding of thinking for pleasure and what predicts it may best be advanced by an analysis of individual-level variables and how these variables cluster (or do not) in various cultures.

To address these questions, we conducted a direct replication of Wilson et al.'s (2014) Study 8 at 12 sites in 11 countries. In the original study, college student participants were asked to spend 10 to 15 min alone in their rooms either thinking for pleasure or doing an enjoyable solitary activity of their choice (such as reading, watching TV, or surfing the Internet). Those who were asked to think for pleasure reported less enjoyment ($M = 3.20$ on a 9-point scale) than did those who were asked to do an external activity ($M = 6.87$, $p < .001$, $d = 1.83$). Given the magnitude of this finding, and the finding that a preference for action over idleness

appears cross-culturally stable (Fulmer et al., 2010), we expected participants in all countries to enjoy thinking less than they enjoyed doing. However, we also expected that there would be cultural differences in the degree to which participants found thinking for pleasure to be unpleasant and that these would be related to differences in cultural practices and personality.

Method

Overview

In Study 8 by Wilson et al. (2014), 30 college student participants, while alone in their own rooms, were randomly assigned to spend 10 to 15 min either thinking for pleasure or doing an enjoyable solitary activity of their choice. We performed a direct replication of this study at 12 sites in 11 countries to explore possible cultural variations in this finding and to see whether such variations were related to reported use of technology or other cultural variables. We also included individual-difference variables that have been found to correlate with the enjoyment of thinking for pleasure, such as need for cognition (Cacioppo & Petty, 1982), to see whether they mediated any cultural differences that were observed. All materials, data, and analysis scripts can be found at https://osf.io/av2t9.

Institutional Review Board Statement

The research reported here was approved by the University of Virginia Institutional Review Board for the Social and Behavioral Sciences [U.S. & Japan] (Protocol #2014–0185, "Thinking & Doing"); by the Social and Societal Ethics Committee of the University of Leuven [Belgium] (Protocol #G- 2015 08 306, "Cross-Cultural Thinking Enjoyment"); by the Yonsei University Institutional Review Board [Korea] (Protocol #201508-SB-502–02, "Cross-Cultural Thinking Enjoyment"); by the HELP University Ethics Review Board for the Department of Psychology [Malaysia] (Protocol #N/A, "Cross-Cultural Thinking Enjoyment"); by the Institutional Review Board of the Faculty of Sport and Physical Education, University of Belgrade [Serbia] (Protocol #2014–2, "Cross Cultural Thinking Enjoyment"); by the Middle East Technical University Institutional Review Board for the Graduate School of Social Sciences [both sites in Turkey] (Protocol #2015-SOS-127, "Cross-Cultural Thinking Enjoyment"); and by the Institutional Review Board of the American University of Sharjah [UAE] (Protocol #351, "Cross-Cultural Thinking Enjoyment"). No formal IRB approval was deemed necessary by the departments at the Pontifical Catholic University of Rio de Janeiro [Brazil], the Universidad de Iberoamerica [Costa Rica], or the University of Porto [Portugal]. All studies were run in accordance with the Helsinki convention on human experimentation.

Procedure

Site selection. We recruited collaborators from 12 sites at 11 countries around the world using the Many Lab collaboration tool (https://osf.io/89vqh/). We aimed to recruit countries with different religious and cultural traditions from the United States, different paces of life, and different levels of economic development, but aside from directly recruiting collaborators in Japan and Korea to test theories about differences between Western and East Asian culture, we did not target any countries specifically. Information about the aims of the project, the requirements for authorship (translation, sample recruitment, data collection), and a timeline were posted to the Many Lab page for potential collaborators. All collaborators who agreed to these requirements were accepted into the project, resulting in teams from Belgium, Brazil, Costa Rica, Japan, Korea, Malaysia, Portugal, Serbia, the United Arab Emirates, the United States, and two teams from Turkey. Researchers from Nigeria and Tanzania dropped out before collecting data because of participant recruitment issues.

Participants. A power analysis based on the effect size of Wilson et al. (2014), Study 8, indicated that at least 91 participants would be needed at each site for 90% power to detect 50% of the original effect size of $d = 1.83$. Because we were interested in mediation analyses as well as between-conditions differences, we aimed to recruit at least 150 participants at each site. When the original recruitment goal proved infeasible at some sites, we lowered the threshold to 100 participants, which ultimately all but one site cleared. We included all collected data in our analyses, including data from one site that recruited fewer than 100 participants. Each site recruited participants from university participant pools, advertising to prospective participants that the study was about how people spend time when they are alone and that the study would take 20 to 25 min to complete, during which they would have to be alone. All participants received course credit for their participation. The final sample consisted of 2,557 college students attending universities at 12 sites in 11 countries. The number of participants at each site and their demographics are displayed in Table 1.

Translation. Researchers at each site were provided with the Qualtrics program that ran the study, which was identical to the one used by Wilson et al. (2014), with the addition of individual-difference measures. If translation was required, a member of each team translated the text in the program into the primary language of their country and then a different member back-translated the text into English. The back-translation was reviewed by the lead authors to ensure fidelity. In total, the program was available to all participants in English, Spanish, Portuguese, Brazilian Portuguese, Japanese, Korean, Serbian, Dutch, and Turkish.

Procedure. The procedures of Wilson et al. (2014, Study 8) were followed as closely as possible except for the following changes: In the original study, participants first attended a laboratory session in which they completed individual-difference measures and were instructed that they would receive a link to a program over e-mail, which they should open only when they were alone in their rooms, had at least 30 min to spare, and were free of distractions. Because the study has been successfully replicated using Amazon's Mechanical Turk participants who did not attend an initial session (E. N. Smith & Frank, 2015; $n = 81$, $d = 1.32$), we eliminated the initial session in our replications. Participants were instructed to open the link to the study at a time when they were alone and had at least 30 min to spare. They were presented with the study in the language of their web browser, with the opportunity to shift the translation to any of the other available options. The Qualtrics program used to run the study is available at https://goo.gl/BxR51v.

After giving consent, participants agreed to turn off all electronic devices and put away any possible distractors, such as paper

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Table 1
Participant Demographics

Site	*n*	Gender			Age		Religion					
		Females	Males	Other	Range	Mean (*SD*)	Christian	Muslim	Buddhist	Unaffiliated	Atheist	Other
Belgium	269	229	39	1	17–34	18.46 (1.62)	139	4	2	53	45	26
Brazil	177	141	35	1	17–52	22.43 (6.51)	100	0	0	22	20	35
Costa Rica	80	57	21	2	18–54	24.06 (7.26)	54	0	1	15	4	6
Japan	208	75	133	0	18–25	19.29 (1.18)	5	0	32	105	49	17
Malaysia	191	151	39	0	18–28	20.38 (1.52)	48	24	59	14	11	35
Portugal	120	103	17	0	17–67	25.57 (11.31)	75	0	1	14	17	13
Serbia	414	186	227	1	16–56	19.87 (2.60)	324	1	1	32	35	21
South Korea	184	112	71	1	19–32	22.35 (2.16)	58	0	10	85	17	14
Turkey	475	331	143	1	18–64	22.45 (5.31)	4	318	1	42	62	48
United Arab Emirates	266	172	94	0	17–25	20.31 (1.48)	11	230	0	3	3	19
United States	173	107	65	1	17–23	18.51 (.94)	101	3	1	21	21	26

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or pencils, and to close any other browser tabs. Once they confirmed that their distractors had been put away and that they were alone in their rooms, they were allowed to continue. Participants then filled out a mood index (using a 5-point scale from *1 = very slightly or not at all* to *5 = extremely*) to indicate how "Happy, Bored, Irritable, Stressed Out, Attentive, and Cheerful" they were currently feeling, and indicated how long they had slept the previous night (in hours, from "0" to "10 or more"). Mood items were collapsed into a measure of positive affect ("Happy, Attentive, and Cheerful"; $\alpha = .65$) and a measure of negative affect ("Bored, Irritable, and Stressed Out"; $\alpha = .62$). Participants then learned that they would be asked to sit by themselves in their room without falling asleep or getting up to walk around in a 10- to 15-min "Free Time" period.

Participants were randomly assigned either to the thinking condition or the doing condition and were given the same instructions used in Wilson et al. (2014), Study 8. Participants in the thinking condition were told that they could spend the Free Time period thinking about whatever they wanted but that they should spend the time entertaining themselves with their thoughts as best as they could, with the goal of having a pleasant experience, as opposed to spending the time focusing on everyday activities or negative things. They were told not to use any external devices during their time, including phones, tablets, TVs, or computers. Participants in the doing condition were told to entertain themselves during the upcoming Free Time period with activities from a list that included watching TV, reading a book or magazine, working on a puzzle, looking at the Internet, playing a videogame, or listening to music or the radio. They were told that they could switch activities whenever they wanted and that they could do multiple activities at once (e.g., listening to music while surfing the Internet). They were also told that their goal for the period was to have an enjoyable time and that they should not spend their time focusing on everyday activities or doing schoolwork. It was stressed in both conditions that the Free Time period should be experienced alone, without the presence of, or communication with, other people. After reading the instructions, the 12-min Free Time period began.

After a chime indicated the end of the period, participants were asked, on 9-point scale (from *1 = not at all* to *9 = extremely*, with a midpoint of *5 = somewhat*) how enjoyable, entertaining, and boring the Free Time period had been. Using similarly labeled 9-point scales, participants were also asked to what extent they found their minds wandering and how hard it was for them to concentrate. They were also asked to estimate the length of the Free Time period and to write about what they had thought or done, depending on the condition.

To assess whether participants faithfully followed the instructions or engaged in forbidden activities, we asked how long (including the option of "0 minutes = no time") they had performed each of 14 activities, such as "talked with someone," "watched television or a movie," and "opened other windows on my computer, such as Facebook." Participants were additionally asked whether anyone else had been in the room during their Free Time period, whether they had gotten up during the period, and whether they had timed the period with a watch.

To determine whether participants remembered what they were supposed to do during the Free Time period, we asked them to recall how long they had been told the Free Time period would last, what they were supposed to do during the Free Time period, and where they currently were.

Participants then provided demographic information and completed questions about their religion, religious histories, experiences with meditation, histories of residential mobility, the size of the cities in which they grew up, and the size of their current cities, followed by the individual-difference measures described next.

Big Five personality traits. The 10-Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003) assessed participants' level of openness, conscientiousness, extraversion, agreeableness, and emotional stability, using two items for each trait (αs = .47, .56, .67, .14, and .53, respectively).

Need for cognition. We used an abbreviated three-item version of the Need for Cognition scale (Cacioppo & Petty, 1982) using the items that loaded most strongly on the overall construct. Participants were asked whether or not the following were characteristic of them, on a 5-point scale, from *1 = extremely uncharacteristic of me* to *5 = extremely characteristic of me*: "Thinking is not my idea of fun," "I like to have the responsibility of handling a situation that requires a lot of thinking," and "I prefer complex to simple problems." α for the abbreviated scale = .56.

Time affluence. We used an abbreviated three-item version of the Time Affluence scale (Kasser & Sheldon, 2009) using the items that loaded most strongly on the overall construct. Participants were asked whether they agreed with the following statements, on a 5-point scale, from *1 = strongly disagree* to *5 =*

strongly agree: "I have enough time to do what I need to do," "I have been able to take life at a reasonable pace," and "I have felt like things have been really hectic." α for the abbreviated scale = .66.

Socioeconomic status. We measured socioeconomic status with two questions, asking where an individual would place themselves on a slider relative to the worst-off/best-off people in their communities and in their nations as a whole (Adler et al., 2008).

Life satisfaction. Life satisfaction was measured with the full five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). α = .83.

Locomotion. We measured participants' tendency toward action with an abbreviated four-item version of the Locomotion scale (Kruglanski et al., 2000) using the items that loaded most strongly on the original construct. Participants were asked, using a 6-point scale, where *1 = strongly disagree* and *6 = strongly agree*, whether they agreed with the following statements: "I enjoy actively doing things, more than just watching and observing," "When I decide to do something, I can't wait to get started," "By the time I accomplish a task, I already have the next one in mind," and "Most of the time my thoughts are occupied with the task I wish to accomplish." α for the abbreviated scale = .70.

Intrinsic religiosity. Intrinsic religiosity was measured with an abbreviated three-item version of the Intrinsic Religiosity scale (Hoge, 1972) using items that loaded most strongly on the original scale. Participants were asked to rate, using a 5-point scale, where *1 = strongly disagree* and *5 = strongly agree*, the following statements: "My faith involves all of my life," "My religious beliefs are what really lie behind my whole approach to life," and "Although I believe in my religion, I feel there are many more important things in life." α for the abbreviated scale = .57.

Phone use and spare-time activities. We also asked how often participants used their phones on a daily basis, using a 6-point scale from *1 = no time* to *6 = more than 2 hr per day*, and how likely they would be to read a book or magazine, to listen to music, to watch TV, to sit and think, to meditate, and to check their phone when they had time to spare, all on 7-point scales from *1 = very unlikely* and *7 = very likely*. We conducted a principal-components analysis with a promax rotation to reduce the number of items, which produced a three-component solution: one component indexing phone usage, one component indexing internal thought, and one component indexing media usage. Finally, participants were asked to describe their impressions of the study.

Country-level measures. In order to conduct nation-level analyses we included the following variables: each country's Gross Domestic Product Per Capita, country population, and population density (World Bank, 2014), as well as the four cultural measures (of the six possible) that were available for all 11 countries from Hofstede, Hofstede, and Minkov (2010). These were *masculinity* (how driven the culture is by competition, with higher scores indicating more achievement orientation and lower scores indicating more of a focus on quality of life and caring for others), *power distance* (cultural attitudes toward inequality, with higher scores indicating more acceptance and endorsement of inequalities by the less-powerful members of the culture), *uncertainty avoidance* (attitudes toward the future, with high scores indicating a stronger need to control the future and lower scores indicating a willingness to just let the future happen however it may), and *individualism* (the level of interdependence of individuals within the culture, with higher scores indicating a more individualistic mentality and lower scores indicating a more collectivistic mentality). Table 2 and Table S2 in the online supplemental materials provide country-level summaries of these variables.

Results

Forbidden Activities

A large proportion of participants (40%) reported that they had performed at least one forbidden activity during the Free Time period, with the most common being calling someone on their phone (16%) and checking their e-mail (12%). The proportion of people who "cheated" was significantly higher in the thinking condition than in the doing condition, 54% versus 26%, $\chi^2(1) = 208.2$, $p < .001$, perhaps because there were more ways to cheat in the thinking condition (i.e., all of the activities listed were forbidden to thinkers, but some, such as watching TV or a movie, were permissible for doers). Although these proportions are quite large, the total amount of time that people spent on forbidden activities was relatively small ($M = 3.38$ min [$SE = 4.43$] and 1.81 min [$SE = 3.24$] in the thinking and doing conditions, respectively). Perhaps because of this, the results are very similar regardless of whether cheaters are included or removed from the analyses. We therefore opted to include them. It is also worth noting that these are liberal estimates of time spent on forbidden activities because they are the sum of participants' reports of the time spent on each activity, and some of these activities could be done simultaneously, such as listening to music and texting someone. Indeed, in some cases, the sum of the times exceeded the 12 min duration of the thinking period, and in those cases, we truncated the number at 12.

Reported Enjoyment of Thinking Versus Doing

As in Wilson et al. (2014), we computed an enjoyment index by averaging participants' ratings of how enjoyable, entertaining, and boring (reverse scored) the Free Time period was (α = .91).[1] Were the results of Wilson et al.'s Study 8 successfully replicated? Clearly, the answer is "yes." Overall, participants in the thinking condition reported significantly less enjoyment than participants in the doing condition ($M = 4.54$, $SD = 1.90$ vs. $M = 6.35$, $SD = 1.80$), $t(2545) = 24.66$, $p < .001$, $d = .98$, 95% confidence interval = [.89, 1.06]. In all 11 countries, participants in the doing condition reported significantly more enjoyment than did participants in the thinking condition, as shown in Table 3 and Figure 1. Notably, participants in the country that enjoyed thinking for pleasure the most (Costa Rica) still reported lower enjoyment than participants in the doing condition in every country except Japan (see Figure 1).

[1] Alpha levels were similar in the different countries, with one exception: The alpha in Costa Rica, the country with the smallest sample size, was somewhat lower (α = .82). See the online supplemental materials for more details.

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Table 2
Country-Level Variables and Selected Individual Difference Measures by Country

Country	Gross Domestic Product per capita (in dollars)	Population (millions)	Population density	Masculinity	Power distance	Uncertainty avoidance	Individualism	Need for cognition *M* (*SD*)	Initial positive affect *M* (*SD*)	Openness to experience *M* (*SD*)	Meditation experience *M* (*SD*)	Phone use *M* (*SD*)
Belgium	47,352.9	11.23	371	54	65	94	75	8.61 (2.26)	3.50 (.61)	5.29 (1.20)	1.90 (1.12)	−.09 (1.07)
Brazil	11,384.4	206.08	25	49	69	76	38	9.80 (2.70)	3.18 (.71)	5.12 (1.31)	2.11 (1.29)	.13 (.95)
Costa Rica	10,415.4	4.76	93	21	35	86	15	9.89 (2.28)	3.22 (.60)	5.38 (1.10)	2.50 (1.48)	.17 (1.02)
Japan	36,194.4	127.13	349	95	54	92	46	8.50 (2.16)	2.65 (.71)	3.97 (1.30)	1.86 (1.28)	.26 (.77)
Malaysia	11,307.1	29.90	91	50	100	36	26	9.71 (2.58)	2.92 (.74)	4.86 (1.21)	2.38 (1.34)	.23 (.67)
Portugal	22,132.2	10.40	114	31	63	99	27	10.23 (2.89)	3.20 (.61)	5.20 (1.30)	2.40 (1.69)	−.45 (1.35)
Serbia	6,152.9	7.13	82	43	86	92	25	10.64 (2.55)	3.17 (.73)	5.81 (1.11)	1.70 (1.04)	−.38 (1.16)
South Korea	27,970.5	50.42	517	39	60	85	18	9.55 (2.53)	2.57 (.66)	4.45 (1.23)	1.97 (1.09)	.30 (.68)
Turkey	10,515.0	75.93	99	45	66	85	37	10.20 (2.44)	2.96 (.72)	5.39 (1.08)	1.81 (1.13)	−.12 (1.01)
United Arab Emirates	43,962.7	9.09	109	50	90	80	25	10.29 (2.67)	2.93 (.81)	5.30 (1.22)	2.18 (1.51)	.27 (.87)
United States	54,629.5	318.86	35	62	40	46	91	10.27 (2.25)	3.01 (.75)	5.19 (1.06)	2.06 (1.11)	.22 (.70)

Table 3
Differences in Reported Enjoyment of Thinking Versus Doing by Country

Country	Thinking *n*	Doing *n*	Thinking *M* (*SD*)	Doing *M* (*SD*)	Thinking/Doing *t*	Thinking/Doing *d*[a]	Thinking vs. Midpoint	Doing vs. Midpoint
Belgium	138	131	4.42 (1.85)	7.24 (1.40)	$t(254) = 14.134, p < .001$	1.72 [1.44, 2.00]	$t(137) = -3.706, p = .002$	$t(130) = 18.286, p < .001$
Brazil	88	89	4.89 (1.90)	6.66 (1.60)	$t(170) = 6.679, p < .001$	1.00 [.69, 1.32]	$t(87) = -.524, p = .602$	$t(88) = 9.758, p < .001$
Costa Rica	45	35	5.40 (1.43)	6.88 (1.76)	$t(65) = 4.027, p < .001$	.91 [.44, 1.37]	$t(44) = 1.873, p = .271$	$t(34) = 6.299, p < .001$
Japan	109	99	3.82 (1.77)	5.34 (2.00)	$t(197) = 5.772, p < .001$	.80 [.52, 1.08]	$t(108) = -6.950, p < .001$	$t(98) = 1.692, p = .282$
Malaysia	101	90	4.41 (1.88)	6.07 (1.53)	$t(187) = 6.694, p < .001$	.97 [.67, 1.27]	$t(100) = -3.134, p = .016$	$t(89) = 6.626, p < .001$
Portugal	59	61	4.48 (1.92)	6.68 (1.74)	$t(116) = 6.563, p < .001$	1.20 [.81, 1.59]	$t(58) = -2.079, p = .210$	$t(60) = 7.532, p < .001$
Serbia	193	221	5.20 (1.97)	6.44 (1.70)	$t(382) = 6.812, p < .001$	.67 [.47, .87]	$t(192) = 1.390, p = .333$	$t(220) = 12.564, p < .001$
South Korea	87	97	4.26 (1.61)	6.44 (1.41)	$t(172) = 9.706, p < .001$	1.43 [1.11, 1.76]	$t(86) = -4.277, p < .001$	$t(96) = 10.066, p < .001$
Turkey	237	238	4.48 (1.96)	6.06 (1.92)	$t(473) = 8.867, p < .001$	.81 [.63, 1.00]	$t(236) = -4.071, p < .001$	$t(237) = 8.514, p < .001$
United Arab Emirates	131	135	4.27 (1.92)	5.81 (2.04)	$t(264) = 6.380, p < .001$	.78 [.53, 1.03]	$t(130) = -4.373, p < .001$	$t(134) = 4.646, p < .001$
United States	85	88	4.47 (1.70)	6.95 (1.49)	$t(166) = 10.186, p < .001$	1.55 [1.21, 1.89]	$t(84) = -2.889, p = .030$	$t(87) = 12.244, p < .001$
All Sites	1273	1284	4.54 (1.90)	6.35 (1.80)	$t(2545) = 24.66, p < .001$	.98 [.89, 1.06]	$t(1272) = -8.577, p < .001$	$t(1283) = 26.838, p < .001$

Note. All tests Holm-corrected for multiple comparisons.
[a] 95% confidence intervals in brackets.

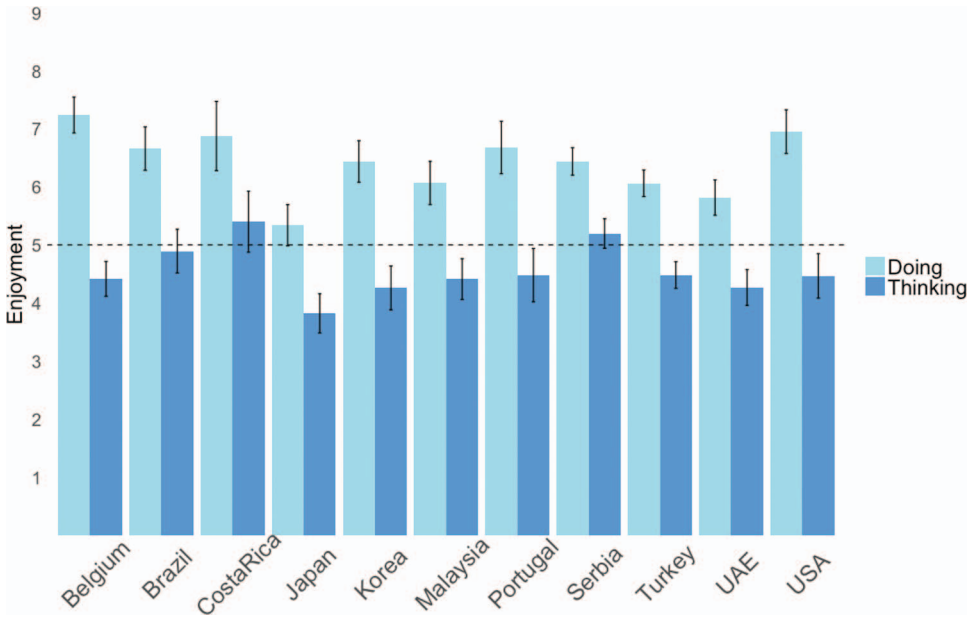

Figure 1. Enjoyment by country and condition. The dotted line indicates the midpoint of the scale. Error bars indicate 95% confidence intervals. See the online article for the color version of this figure.

Individual and Cultural Differences in the Enjoyment of Thinking for Pleasure

The magnitude of the preference for doing over thinking varied by country. Because participants were nested within country, we analyzed the data with a set of multilevel models in a series of exploratory analyses. Separate intraclass correlation analyses for the thinking and doing conditions indicated that country-level effects accounted for 4.0% of the variance in the thinking period and 7.8% of the variance in the doing period. We next created models predicting enjoyment from condition, with a random condition slope and intercept for each country. The effect of condition was highly significant, $b = 1.83$, $t(2556) = 12.82$, $p < .001$, and a model-selection approach indicated that removing the random condition slope led to a significantly worse-fitting model, $\chi^2(2) = 22.039$, $p < .001$, indicating that condition effects differed significantly by country.[2]

Next, we examined the individual-difference and cultural-level variables that predicted cultural differences in the enjoyment of thinking. Because our main focus is on thinking for pleasure, we do not report variations in the enjoyment of doing by country, other than to note that the pattern of results reported below was distinctive to thinking; that is, the individual-difference variables that explained cultural differences in the enjoyment of thinking were not the same individual-difference variables that explained differences in the enjoyment of doing. Details can be found in the online supplemental materials.

Individual-difference variables. We first examined whether variation in individual differences explained cultural differences in the enjoyment of thinking for pleasure. Collectively, the 23 predictors explained 12.5% of the variance (9.0% without taking country-level effects into account; Nakagawa & Schielzeth, 2013). Eight of the individual-difference variables correlated significantly with the enjoyment of thinking for pleasure. They were need for cognition, reported phone usage, openness to experience, meditation experience, initial positive affect, locomotion, conscientiousness, and life satisfaction. All of these correlations were positive except for phone usage, which was negative. The magnitude of these correlations was modest, ranging from .10 to .26. All eight of these variables varied significantly by country (see Tables S1 and S2 in the online supplemental materials).

To better understand the relationship between the eight individual-difference predictors and the enjoyment of thinking for pleasure across countries, we fitted a series of nested structural equation models with submodels for each country, using the OpenMx R package (Neale et al., 2016). All models estimated both the country-specific means and variances of the eight individual-difference variables that correlated significantly with enjoyment and their country-specific intercorrelations with each other. Our initial model (Model A) allowed each individual-difference predictor to freely predict the enjoyment of thinking between countries, so that each country could have its own coefficients from the individual-difference measures to the enjoyment of thinking. In addition, both the mean and variance for the enjoyment of thinking were allowed to vary across countries. Model B constrained the regression coefficient between the predictor variables and the enjoyment of thinking to be equal across countries, to test whether need for cognition, for example, had a different relationship to enjoyment in the United States versus Malaysia. This constraint did not significantly decrease model fit, $\chi^2(80) = 95.31$, $p = .12$. Model C added the constraint that the residual variance of enjoy-

[2] We also analyzed differences by site, allowing the two collection sites in Turkey to differ from each other. Because the conclusions do not change, we report the two Turkish sites collapsed together.

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ment was equal across countries, to test whether the variance unexplained by the predictors differed between countries. This constraint did not significantly decrease model fit, $\chi^2(10) = 11.54$, $p = .32$. Model D added the additional constraint that the intercept of the enjoyment of thinking was equal across countries, to test whether the inclusion of individual-difference measures reduced the difference in enjoyment between countries to nonsignificance. This constraint did not significantly decrease model fit, $\chi^2(10) = 16.53$ $p = .09$. Model E adjusted Model D to remove three measures (locomotion, life satisfaction, and conscientiousness) that had 95% CIs for regression coefficients predicting enjoyment that overlapped zero. As this is a model-determined choice, p values are not interpretable for this model, but nevertheless, the value of the chi-square test indicates a negligible loss of model fit, $\chi^2(3) = 1.12$ ($p = .77$).

In order to understand whether the cumulative impact of each step led to an overall decrease in model fit from the initial Model A to the final Model E, even if no single step was significant, we directly compared the starting Model A with the final Model E and found that the sum total of constraints did not significantly decrease model fit, $\chi^2(103) = 124.49$, $p = .07$. Table 4 provides model comparison and fit statistics, and Figure 2 provides path diagrams. In other words, even with its additional constraints, Model E fit the data as well as the previous models did, suggesting that it is the best description of the data.

The bottom line is that five of the individual-difference variables (need for cognition, reported phone usage, openness to experience, meditation experience, and initial positive affect) each predicted the enjoyment of thinking for pleasure, but this relationship did not vary by country. The reason there were variations by country in the enjoyment of thinking was largely because the mean levels of these individual-difference variables differed by country (see Table 2). Once these variations were accounted for, there were no remaining country-level differences in the enjoyment of thinking for pleasure, as Model E was statistically indistinguishable from initial Model A. In short, the five individual-difference variables shown in Table 5 fully accounted for any country-level differences in enjoyment of thinking for pleasure.

Country-level variables. Next, we examined whether any of the country-level variables predicted the enjoyment of thinking for pleasure, by constructing a multilevel model with random intercepts for country, regressing enjoyment in the thinking condition on the seven country-level measures listed in Table 2. Collectively, the seven predictor variables explained 6.8% of the total variance in the enjoyment of thinking (3.2% without taking country-level differences into account; Nakagawa & Schielzeth, 2013). Zero-order correlations, Holm-corrected for multiple tests, showed that three of the predictors were weakly correlated with the enjoyment of thinking: population density, $r(1272) = -.11$ [−.17, −.06], $p < .001$, GDP per capita, $r(1272) = -.13$ [−.18, −.07], $p < .001$, and masculinity, $r(1272) = -.14$ [−.19, −.08], $p < .001$. Thus, the results show that residents of countries with lower population densities and lower GDPs per capita, and that were lower in masculinity (competitiveness), enjoyed thinking for pleasure somewhat more.

Discussion

As we predicted, Wilson et al.'s (2014) finding that participants enjoyed doing an external activity more than they enjoyed thinking for pleasure proved to be quite robust, replicating in all 11 of the countries studied. The average effect size was quite large, though smaller than in the original study ($d = .98$ vs. 1.83). The uniformity of this finding among the participants and countries sampled here suggests that, across a wide variety of cultures, turning one's attention inward to focus on enjoyable topics in the absence of any external cues is far less enjoyable than engaging in everyday activities such as reading or watching a video.

One reason for this is that thinking for pleasure is difficult. As noted by Westgate et al. (2017), to think for pleasure, one must choose topics to think about, maintain attention to those topics, and keep competing thoughts outside of awareness, all of which may tax mental resources (Wegner, 1994). Consistent with this view, participants in the thinking condition of the present study reported that it was somewhat difficult to concentrate on their thoughts ($M = 5.18$ on a 9-point scale), and the more difficulty they reported, the less they enjoyed thinking, $r(1271) = -.36$ [−.41, −.31], $p < .001$. Notably, this correlation did not differ between countries, $Q(10) = 3.20$, $p = .98$. One implication of these findings is that people might enjoy thinking for pleasure

Table 4
Model Comparison for Structural Equation Models

Fit statistics	Model A	Model B	Model C	Model D	Model E
AIC	8,632.13	8,567.44	8,558.98	8,555.50	8,550.621
RMSEA [95% CI]	0	.013 [0, .023]	.012 [0, .023]	.014 [0, .023]	.013 [0, .023]
df	9846	9926	9936	9946	9949
−2LL	28,324.13	28,419.43	28,430.98	28,447.50	28,448.62
			Model Comparison		
Models compared	A-B	B-C	C-D	D-E	A-E
Δ*df*	80	10	10	3	103
Δ−2LL	95.31	11.54	16.53	1.12	124.49
p value	.12	.32	.09	.77[a]	.07[a]

Note. AIC = Akaike's information criterion; RMSEA = root-mean-square error of approximation; −2LL = Log-likelihood ratio.
[a] These two p values are for informational purposes only since the step from Model D to Model E was not a planned comparison, but was made after noting that confidence intervals for three parameters in Model D crossed zero.

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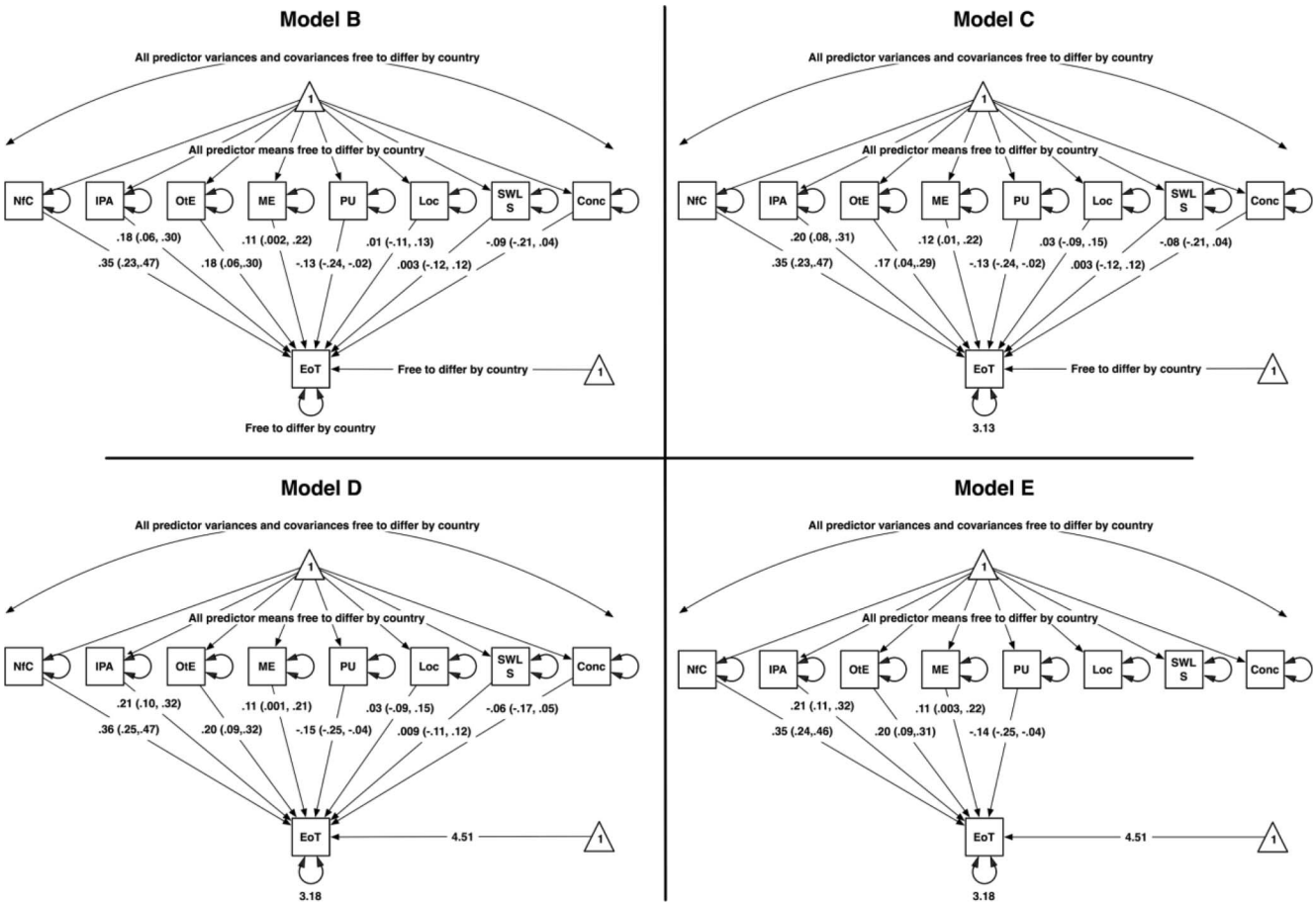

Figure 2. Path diagrams for structural equation models. NfC = need for cognition; IPA = initial positive affect; OtE = openness to experience; ME = experience with meditation; PU = phone usage; Loc = locomotion; SWLS = Satisfaction with Life; Conc = conscientiousness; EoT = enjoyment of thinking. 95% confidence intervals for path coefficients are in parentheses.

more if it were made easier, and indeed, as noted earlier, Westgate et al. found that giving people a simple thinking aid—a reminder of topics they had said they would enjoy thinking about—significantly increased their enjoyment of thinking.

An additional purpose of the present study was to explore cultural differences in the extent to which people enjoy thinking for pleasure, and some country-level differences emerged. These differences, however, were fully explained by international variations in five individual differences, and once country-level differences in those variables were taken into account, the country-level differences themselves were no longer significant. Participants were more likely to enjoy their thoughts to the extent that they practiced meditation, were high in the need for cognition, high in openness to experience, reported a low level of phone usage, and were in a positive mood. What might explain these relationships?

The correlation of the enjoyment of thinking with meditation is consistent with the idea that cultural practices and norms influence the amount of experience people have spending time alone with their thoughts, and that those with greater experience enjoy thinking more (e.g., H. Smith, 1991; Tsai et al., 2006; Tsai, Knutson, et al., 2007; Tsai, Miao, et al., 2007; Yoshioka et al., 2002). The correlation of the enjoyment of thinking with need for cognition is consistent with the idea that thinking for pleasure is effortful and thus is more enjoyable for those who typically find thinking to be an attractive activity (e.g., Westgate et al., 2017; Wilson et al., 2018b). The correlation of the enjoyment of thinking with openness to experience suggests that those who value creativity and new experiences are more motivated to think for pleasure (or more skilled at it). Alahmadi et al. (2017) found that motivating people to think for pleasure increases their enjoyment considerably, and it is possible that

Table 5
Regression Coefficients of Individual Difference Measures Predicting Enjoyment of Thinking, Final Model

Predictor	Coefficient	95% confidence interval
Need for cognition	.35	[.24, .46]
Initial positive affect	.21	[.11, .32]
Openness to experience	.20	[.09, .31]
Meditation experience	.11	[.003, .22]
Phone use	−.14	[−.25, −.04]

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such motivation is associated with openness to experience. The fact that people who were in positive moods enjoyed thinking more is consistent with research that those in a positive mood are likely to find it easier to recruit and think about positive topics (Matt, Vázquez, & Campbell, 1992).

We also found that the five key individual-difference variables varied by culture, which fully explained why residents of some countries enjoyed thinking more than others. For example, Japanese participants enjoyed thinking the least, perhaps because they were the lowest in openness to experience and need for cognition, among the lowest in initial positive affect and in experience with meditation (surprisingly), and among the highest in reported phone use. In contrast, American participants were in the middle of the pack in the enjoyment of thinking, probably because they were also in the middle of the pack on most of the important predictor variables (e.g., openness to experience, experience with meditation, initial positive affect). These findings suggest that to understand cultural variations in the enjoyment of thinking for pleasure, it is best to examine cultural differences in the individual practices and personality variables that are associated with it.

We additionally found evidence that three country-level variables—population density, GDP per capita, and "masculinity" (cultural levels of interpersonal competitiveness)—weakly predicted individuals' enjoyment of thinking. One possible (speculative) explanation for these findings is that people who grew up in a more rural area or in a poorer country may have had less opportunity to distract themselves with external entertainments and more practice thinking for pleasure. Alternately, the experience of living in densely populated cities may lead to residents feeling that their lives are less meaningful and more overloaded (Buttrick, Heintzelman, Weser, & Oishi, 2018; Milgram, 1970), potentially demotivating them from making the effort to turn inward. In addition, cultures that stress masculinity and competitiveness may be more likely to view thinking for pleasure as a waste of time. It should be noted, though, that even in the countries with the lowest population densities (e.g., Brazil and the United States) and the lowest GDPs per capita (e.g., Serbia, Costa Rica), participants enjoyed thinking less than doing.

The present study naturally has some limitations. First, as in Wilson et al. (2014) Study 8, all participants were college students, thus limiting the generalizability of the results. However, whereas college students may be an unusual population in some regards (e.g., Henrich et al., 2010), studies show that nonstudents also have difficulty thinking for pleasure (Westgate et al., 2017; Wilson et al., 2014, Study 9). Second, although our sample of countries represents a wide variety of cultures, we did not sample the entirety of the world's population, and it is possible that enjoyment of thinking for pleasure differs in some of the cultures that we did not sample.

Third, for practical reasons, we used shortened versions of most of the individual-difference measures, which resulted in reduced reliability. For example, we used Gosling et al.'s (2003) 10-item measure of the Big Five personality traits, which had low alphas, particularly for agreeableness. In this regard, it is interesting to compare the cultural differences in Big Five traits that we obtained with those obtained by Schmitt et al. (2007), who used Benet-Martinez and John's (1998) 44-item measure. The correlations between mean levels of openness to experience, conscientiousness, emotional stability, extraversion, and agreeableness, in the nine countries included in both our study and theirs, were, respectively, $r(8) = .92, .90, .62, .49$, and $.30$. This increases our confidence in the reliability of our results for some traits (particularly openness to experience and conscientiousness) but decreases it for others (e.g., agreeableness).

In sum, the preference for doing external activities such as reading, watching TV, or surfing the Internet rather than "just thinking" appears to be strong throughout the world. The magnitude of this preference is systematically related to several individual differences that characterize the residents of some countries more than others. These findings raise the question of whether there are conditions under which people throughout the world might enjoy thinking more and whether there would be value in doing so. Progress is being made on these fronts; as mentioned, Westgate et al. (2017) found that people enjoy thinking more when cognitive load is reduced by giving them a simple thinking aid, and studies have found other benefits to thinking for pleasure, namely a sense of personal meaningfulness (Alahmadi et al., 2017; Raza et al., 2018).

The fact that thinking for pleasure can be made easier is interesting in light of the present finding that reported cell phone usage was negatively associated enjoying one's thoughts. Although much has been written about the increasing reliance on electronic devices and the possible negative consequences of "device obsession" (e.g., Carr, 2011; Kushlev & Dunn, 2015; Powers, 2010), our study is the first to link device usage to a decrease in the ability to sit alone and enjoy one's thoughts. The present findings are correlational, of course, so we do not know whether using cell phones makes it more difficult for people to enjoy thinking or whether people who do not enjoy thinking are especially likely to use cell phones, or whether some third variable causes both. It is a provocative possibility, though, that the allure of electronic devices is preventing people from making an effort to find pleasure in their thoughts.

If so, efforts to encourage people to put away their phones and "just think" may be of some benefit. For example, in a field study by Wilson, Westgate, Buttrick, and Gilbert (2018a), participants who were randomly assigned to spend spare moments during their day thinking for pleasure (with thinking aids) found this experience to be more personally meaningful, and as enjoyable, as did participants who were randomly assigned to spend their spare moments as they normally did (which often involved using electronic devices). Much more work needs to be done to determine who values thinking for pleasure and when, but this initial evidence suggests that people may find it to be worth the effort if they gave it a try.

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