

Replication of

Just Think: The Challenges of the Disengaged Mind

by Wilson, T.D. / Reinhard, D.A. / Westgate, E.C. / Gilbert, D.T. / Ellerbeck, N. / Hahn, C. / Brown, C.L. / Shaked, A. (2014)
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Replication Authors:

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Wilson et al. (2014) investigate whether it is easier for people to steer their thoughts in pleasant directions when the external world is not competing for their attention or whether it is more difficult to think in enjoyable ways even in the absence of competing external demands.

The results of 11 studies suggest that participants typically do not enjoy spending 6 to 15 minutes in a room by themselves with nothing to do but think, that they enjoy doing mundane external activities much more, and that many prefer to administer electric shocks to themselves instead of being left alone with their thoughts.

Hypothesis to replicate and bet on:

An external activity from a list (e.g. watching television or reading a book) for 12 minutes is rated as being more enjoyable than a 12 minute “thinking period” entertaining themselves with their thoughts (a higher average self-rated enjoyment (the mean of three nine-point scale items) in the “external activities” treatment than in the “standard thought instructions” treatment in Study 8, $t(28) = 4.83$, $p = 0.000044$, p. 76).

Power Analysis and Criteria for Replication: First Data Collection

The original sample size is 30 participants and the standardized effect size measured as the correlation coefficient (r) is 0.674. To have 90% power to detect 75% of the original effect size, a sample size of 36 is required. The criteria for replication are an effect in the same direction as the original study and a p -value < 0.05 (in a two-sided test).

Power Analysis and Criteria for Replication: Second Data Collection

If the original result is not replicated in the first data collection, a second data collection

is carried out. To have 90% power to detect 50% of the original effect size in the pooled sample (first and second data collection), a sample size of 91 is required, i.e., a sample size of 55 in the second data collection is required. The criteria for replication are an effect in the same direction as in the original study and a p -value < 0.05 (in a two-sided test) in the pooled data.

Sample

The sample in the first data collection consists of 36 psychology-major undergraduate students from the University of Pennsylvania. If the original result is not replicated in the

first data collection (two-sided p -value < 0.05 in the same direction as the original study), a second data collection consisting of 55 additional undergraduate students from the University of Pennsylvania will be carried out such that the pooled sample size is 91. There are no exclusion criteria.

Materials

We use the software (Qualtrics) of the original experiment along with the original instructions which have been made available by the authors.

Procedure

We follow the procedure of the original study, with only slight but unavoidable deviations as outlined below. The following summary of the experimental procedure is therefore based on the sections “Study 7: Just Thinking at Home” (pp. 2–3) and “Study 8: Comparing Just Thinking to External Distractions” (pp. 3–4) of the Supplementary Information.

Participants who sign up for the study are informed that the experiment involves two parts. They receive an email explaining that the first session takes place at the Wharton Behavioral Lab while the second part will be completed online.

In the first part of the experiment taking place in the laboratory, subjects answer a questionnaire including individual difference scales lasting about 15 to 20 minutes. Participants attend this session in private cubicles in groups, and before answering the questionnaire, the instructions will be read aloud by the experimenter. After completing the questionnaire, participants are informed that they will receive an e-mail containing a hyperlink to the second part of the study within a few days which can be completed within about 30 minutes. The participants will then receive a

written set of instructions about what to do in the second part of the study.

For the second part, participants receive an e-mail with a link to a web program (Qualtrics) and are asked to complete the questionnaire at a time when they do not feel rushed and are free of all distractions. Half of the participants are randomly assigned to the “standard thought instructions” condition and half are assigned to the “external activities” condition.

Participants in the “standard thought instructions” condition are given the instructions that they should spend the “thinking period” entertaining themselves with their thoughts, without falling asleep or getting up from their chair. Participants are reminded to turn off all electronic devices and to avoid other external distractions such as reading materials.

Participants in the “external activities” condition are instructed to entertain themselves with one or more activities from a list that included watching a television show or movie, reading an enjoyable book or magazine, working on a puzzle (e.g., a crossword or Sudoku puzzle), looking at web pages (e.g., Facebook, Youtube), playing a videogame, and listening to music on the radio. Participants are told that they could switch from one activity to another if they wanted, with the goal of “finding something enjoyable to do.” They are further instructed not to communicate directly with anyone else during the free time period, such as texting or talking on the phone. “The goal,” they read, “is to find something entertaining to do by yourself.” Participants then write down on a piece of paper the three activities from the list that they think they would do, asked to keep that list nearby for reference, though they do not have to do all of them.

Thus, participants in the “standard thought instructions” condition receive instructions

to entertain themselves with their thoughts, whereas participants in the “external activities” condition receive instructions to entertain themselves with one or more external activities. All participants then complete the same dependent measures as in the original study.

Analysis

The analysis will be performed exactly as in the original study. That is, an independent-sample t -test is conducted to test for the difference in the average self-rated enjoyment (mean of the three nine-point scale items (i) “How enjoyable was this part of the study?”, (ii) “How entertaining was this part of the study?”, and (iii) “How boring was this part of the study?” [reverse-scaled]) between the “external activities” treatment and the “standard thought instructions” treatment in Study 8.

In the original study, the means of three self-rated enjoyment items in the “standard thought instructions” treatment and the “external activities” treatment were 3.20 ($SD = 2.23$) and 6.87 ($SD = 1.91$), respectively. An independent-sample t -test revealed that this difference is statistically significant with $t(28) = 4.83$ and a corresponding p -value of 0.000044.

The results will first be estimated based on the first data collection. If the original result is replicated in the first data collection (a two-sided p -value < 0.05 in the same direction as in the original study), the second data collection will not be carried out. If the original result is not replicated in the first data collection a second data collection will be carried out. The above statistical test will then be estimated for the pooled sample of the first and second data collection to test if the original result replicated (a two-sided p -value < 0.05 in the same direction as in the original study).

Differences from Original Study

The replication procedure is identical to that of the original study, with some unavoidable deviations. The replication will be performed at the Wharton Behavioral Lab at the University of Pennsylvania between September 2016 and September 2017, while the original data was gathered in a Psychology classroom at the University of Virginia in 2013.

Participants in the original study were incentivized by course credits and received 1/2 credit for attending each of the two parts. In contrast, monetary incentives will be used in the replication experiments. Participants will receive Amazon gift cards of \$10 following completion of either part of the experiment.

The original study contains eleven experiments: for the replication, the focus is only on the comparison of the self-rated enjoyment in the “external activities” treatment and in the “standard thought instructions” treatment in Study 8.

Replication Results for the First Data Collection (90% power to detect 75% of the original effect size)

[To be added when replication experiments have been completed.]

Replication Results for the First and Second Data Collection Pooled (90% power to detect 50% of the original effect size)

[To be added when replication experiments have been completed.]

Unplanned Protocol Deviations

[To be added when replication experiments have been completed.]

Discussion

[To be added when replication experiments have been completed.]

References

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