1096 2022

SOEP Survey Papers
Series H - SOEP-IS Modules

SOEP-IS 2014 – Inattentional Blindness

Dalton Conley, Christopher F. Chabris, Daniel J. Simons

DIW SOEP

Running since 1984, the German Socio-Economic Panel (SOEP) is a wide-ranging representative longitudinal study of private households, located at the German Institute for Economic Research, DIW Berlin.

The aim of the SOEP Survey Papers Series is to thoroughly document the survey's data collection and data processing.

The SOEP Survey Papers is comprised of the following series:
Series A – Survey Instruments (Erhebungsinstrumente)
Series B – Survey Reports (Methodenberichte)
Series C – Data Documentation (Datendokumentationen)
Series D – Variable Descriptions and Coding
Series E – SOEPmonitors
Series F – SOEP Newsletters
Series G – General Issues and Teaching Materials
Series H – SOEP-IS Modules

The SOEP Survey Papers are available at **http://www.diw.de/soepsurveypapers**

Please cite this paper as follows:

Dalton Conley, Christopher F. Chabris, Daniel J. Simons. 2022. SOEP-IS 2014 – Inattentional Blindness. SOEP Survey Papers 1096: Series H. Berlin: DIW/SOEP

ISSN: 2193-5580 (online)

DIW Berlin
German Socio-Economic Panel (SOEP)
Mohrenstr. 58
10117 Berlin
Germany

soeppapers@diw.de

SOEP-IS 2014 –
Inattentional Blindness

Module Title in SOEP Documentation: Inattentional Blindness

Dalton Conley, Christopher F. Chabris, Daniel J. Simons

Dear SOEP Science Council,

We propose to measure the prevalence of inattentional blindness in the entire innovation sample, and to test whether inattentional blindness is associated with the symptoms of ADHD and autism, and with socio-demographic variables.

Inattentional blindness (IB) is the surprising failure to notice otherwise salient events while one is paying attention to something else (Chabris & Simons, 2010). One of the best-known demonstrations of IB was reported by Simons and Chabris (1999). Participants in their experiments watched a one-minute video of six people passing basketballs. Half of the people were wearing white shirts, and half were wearing black shirts. The participants had to count silently the number of passes made by the people in white shirts. About halfway through the video, a person in a gorilla suit walked through the action and thumped her chest at the camera. Participants counted the passes accurately, but approximately 50% of them completely failed to notice the gorilla. (An abridged version of this video can be seen here: http://www.youtube.com/watch?v=vJG698U2Mvo)

This effect has been replicated in numerous studies using a variety of stimuli and participant groups, but it has never been measured in a representative population sample. Therefore our first goal is to measure the prevalence of IB and to test whether it is associated with accuracy in performing the primary (counting) task. We propose to use a computer-generated video of white and black squares and circles moving on a gray background, in which participants count the number of times one type of shape touches the side of the display area, and are asked whether they saw a new shape move across the screen. We prefer this to using the original "gorilla video," for two reasons: (1) the gorilla video has become popular and many participants in this study may have seen or heard of it before; (2) the shapes video has fewer ambiguities and allows for better experimental control. In particular, we propose to randomly assign participants to pay attention to either the white shapes, the black shapes, the squares, or the circles. The unexpected object is a black circle, and should therefore be noticed more often when participants are paying attention to either black shapes or circles, than when they are paying attention to white shapes or squares. It is useful to include this randomized experimental component because the "similarity effect" just described would help to validate that true inattentional blindness has been exhibited, since previous research has found that similarity between the attended objects and the unexpected object increases IB (Most et al., 2001, 2005). (A version of the proposed video can be viewed here: http://perception.research.yale.edu/ib/IB-ShapeColor-BlackCircleUE.mov)

Our second goal is to test for association between a set of socio-demographic variables and inattentional blindness. Using IB (a dichotomous variable indicating whether or not the participant noticed the unexpected shape) as a dependent variable, we would analyze predictors of inattentional blindness ranging from socioeconomic status to age to gender to birth parity (and interactions between these). Using IB as an independent variable, we would administer a short battery of questions meant to be diagnostic for attention deficit hyperactivity disorder (ADHD),

autism-spectrum disorder, and related psychological morbidities (such as depression). ADHD and other behavioral disorders will be assessed through an abridged form of the Vanderbilt Assessment Scale in combination with other questions about daily experiences with concentration and focus (Hodges & Wong, 1996; O'Malley, Suh, & Strupp, 1983). Autism spectrum symptoms will be measured by the 10-item short version of the Autism Quotient scale (AQ-10; Baron-Cohen et al., 2001, Allison et al., 2012). Depression will be assessed using the CES-D self-rating scale (Radloff, 1977). We hypothesize that individuals who demonstrate inattentional blindness will be *less likely* to demonstrate symptoms of ADHD, autism, and depression.

Collaborators: Dalton Conley, Christopher F. Chabris, Daniel J. Simons

Work Cited

Allison, C., Auyeung, B., & Baron-Cohen, S. (2012). Toward brief "Red Flags" for autism screening: The Short Autism Spectrum Quotient and the Short Quantitative Checklist for Autism in toddlers in 1,000 cases and 3,000 controls. *Journal of the American Academy of Child and Adolescent Psychiatry, 51(2)*, 202–212.

Baron-Cohen, S., Weelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The Autism-Spectrum Quotient (AQ): Evidence from Asperger Syndrome/high-functioning autism, males and females, scientists and mathematicians. *Journal of Autism and Developmental Disorders, 31*, 5–17.

Chabris, C.F., & Simons, D.J. (2010). *The invisible gorilla, and other ways our intuitions deceive us.* New York: Crown. [German edition: *Der Unsichtbare Gorilla*, published by Piper Verlag, 2011.]

Hodges, K., & Wong, M. (1996). Psychometric characteristics of a multidimensional measure to assess impairment: The Child and Adolescent Functional Assessment Scale. *Journal of Child and Family Studies*. Retrieved from http://link.springer.com/article/10.1007/BF02233865

Most, S.B., Simons, D.J., Scholl, B.J., Jimenez, R., Clifford, E., & Chabris, C.F. (2001). How not to be seen: The contribution of similarity and selective ignoring to sustained inattentional blindness. *Psychological Science, 12(1)*, 9–17.

Most, S.B., Scholl, B.J., Clifford, E., & Simons, D.J. (2005). What you see is what you set: Sustained inattentional blindness and the capture of awareness. *Psychological Review, 112(1)*, 217–242.

O'Malley, S., Suh, C., & Strupp, H. (1983). The Vanderbilt Psychotherapy Process Scale: A report on the scale development and a process-outcome study. *Journal of Consulting and Clinical Psychology* …. Retrieved from http://psycnet.apa.org/journals/ccp/51/4/581/

Radloff, L. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement*. Retrieved from http://apm.sagepub.com/content/1/3/385.short

Simons, D.J., & Chabris, C.F. (1999). Gorillas in our midst: Sustained inattentional blindness for dynamic events. *Perception, 28(9)*, 1059–1074.

Dear SOEP Science Council,

I would like to propose exposing the entire innovation sample to the following video, selective attention test pioneered by Chabris et al. to detect situational blindness (Most, Simons, Scholl, & Chabris, 2000; Simons & Chabris, 1999). Roughly half of viewers who are instructed to count the number of basketball passes in the following embedded (Simons & Chabris, 1999) fail to notice the gorilla that walks through the scene.

http://www.youtube.com/watch?v=vJG698U2Mvo

While useful in demonstrating the internal validity of situational blindness, the substantial variance in response has never been socio-demographically investigated. Thus, I propose using the SOEP innovation sample to administer the test to a nationally representative sample for the first time. I would then use the dichotomous result—noticed the gorilla or did not notice the gorilla—as both a dependent and an independent variable.

As a dependent variable, I would analyze predictors of situational blindness ranging from socioeconomic status to age to gender to birth parity (and interactions between these). As a predictor, I would then administer a short battery of questions meant to be diagnostic for attention deficit hyperactivity disorder (ADHD) and related psychological morbidities (such as depression). ADHD and other behavioral disorders will be assessed through deployment of an abridged form of the the Vanderbilt Assessment Scale in combination with other questions about daily experiences with concentration and focus (Hodges & Wong, 1996; O'Malley, Suh, & Strupp, 1983). Depression will be assessed using the CES-D self-rating scale (Radloff, 1977). I hypothesize that situationally blind individuals are less likely to demonstrate ADHD symptomology and depression.

Work Cited

Hodges, K., & Wong, M. (1996). Psychometric characteristics of a multidimensional measure to assess impairment: The Child and Adolescent Functional Assessment Scale. *Journal of child and Family Studies*. Retrieved from http://link.springer.com/article/10.1007/BF02233865

Most, S., Simons, D., Scholl, B., & Chabris, C. (2000). Sustained Inattentional Blindness. *Psyche*. Retrieved from http://ww.w.leadingteams.org/~cfc/Most2000.pdf

O'Malley, S., Suh, C., & Strupp, H. (1983). The Vanderbilt Psychotherapy Process Scale: A report on the scale development and a process-outcome study. *Journal of Consulting and* …. Retrieved from http://psycnet.apa.org/journals/ccp/51/4/581/

Radloff, L. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement*. Retrieved from http://apm.sagepub.com/content/1/3/385.short

Simons, D., & Chabris, C. (1999). Gorillas in our midst: Sustained inattentional blindness for dynamic events. *Perception-London*. Retrieved from http://www.drjoebio.com/uploads/1/8/1/3/1813500/gorrila_in_our_midst.pdf