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U.S. Department of Justice

Office of Justice Programs

Office of the General Counsel

Washington, D.C. 20531

March 11, 2021

VIA EMAIL

Re: OJP FOIA No. 21-FOIA-00061

This letter responds to your November 1, 2020, Freedom of Information Act/Privacy Act (FOIA/PA) request, which was received in the Office of Justice Programs (OJP), Office of the General Counsel (OGC), on November 23, 2020. A copy of your request is attached for your convenience.

Please be advised that a search has been conducted in the OJP, and one document, consisting of 9 pages, was located which is responsive to your request. After carefully reviewing the attached document, OGC has determined that this document is appropriate for release with some excisions made pursuant to Exemption (b)(4) and Exemption (b)(6) of the Freedom of Information Act, 5 U.S.C. § 552 (2018). Exemption (b)(4) protects trade secrets and commercial or financial information obtained from a person that is privileged or confidential. Exemption (b)(6) protects information that if disclosed, "would constitute a clearly unwarranted invasion of personal privacy." This completes the processing of your request by OJP.

You may contact a member of our FOIA staff at (202) 307-6235, via e-mail at FOIAOJP@usdoj.gov as well as our FOIA Public Liaison, for any further assistance and to discuss any aspect of your request at:

US DOJ, Office of Justice Programs
Office of the General Counsel
810 7th Street, NW, Room 5400
Washington, D.C. 20531
Attn: FOIA

Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA meditation services they offer. The contact information for OGIS is as follows: Office of Government Information

Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001; e-mail at ogis@nara.gov; telephone at 202-741-5770; toll-free at 1-877-684-6448; or facsimile at 202-741-5769.

If you are not satisfied with OJP's determination in response to this request, you may administratively appeal by writing to the Director, Office of Information Policy (OIP), United States Department of Justice, 441 G Street, NW, 6th Floor, Washington, D.C. 20530, or you may submit an appeal through OIP's FOIA STAR portal by creating an account following the instructions on OIP's website: https://www.justice.gov/oip/submit-and-track-request-or-appeal. Your appeal must be postmarked or electronically transmitted within 90 calendar days of the date of my response to your request. If you submit your appeal by mail, both the letter and the envelope should be clearly marked "Freedom of Information Act Appeal."

Sincerely,

Daniel Gaylord

Daniel Gaylord
Government Information Specialist

Attachments

NIJ FY17 Graduate Research Fellowship
Program in Science, Technology, and Mathematics Progress Report

Project Title:	The Neuroscience of Evidentiary Rules: The Case of the Present Sense Impression
Award Number:	2017-IJ-CX-0007
PD/PI:	(b)(6) (b)(6) @vanderbilt.edu Phone: (b)(6)
Mentor:	(b)(6) (b)(6) @vanderbilt.edu Phone: (b)(6)
Submitting Officer:	Andrew Budell, Interim Director of Sponsored Programs Administration (b)(6) @vanderbilt.edu Phone: (b)(6)
Submission Date:	03/15/2019
DUNS:	9657171430000
EIN:	(b)(4)
Recipient Org.:	Vanderbilt University Sponsored Programs Administration Baker Building, Suite 800 110 21st Ave. South Nashville, TN 37240-7749
Federal Entity ID:	(b)(4)
Project Period:	08/01/2017-07/31/2018
Reporting Period:	08/01/2018-01/01/2019
Report Term:	Semi-annual

NIJ FY17 Graduate Research Fellowship
Program in Science, Technology, and Mathematics Progress Report
Award Number 2017-IJ-CX-0007
Principal Investigators: (b)(6)
03/12/2019

Accomplishments: My grant's primary goal is to employ cognitive neuroscience to guide the formulation of evidentiary rules that reflect the actual constraints of human perception, memory, and performance to reform current rules that are premised on untested psychological assumptions about how people perceive, remember, and process information. Specifically, the grant laid out a three aim research agenda focusing on FRE 803(1) Present Sense Impression as a case study. The three aims use electroencephalography and behavior measures to test the cognitive differences between both generating lies about present events versus past events and detecting lies about present versus past events.

I have met all of the goals on my proposed project timeline to date in both my initial and renewal submissions, having (1) passed my qualifying exam and advanced to PhD candidacy, (2) published an article in the scientific journal Memory & Cognition, and (3) presented at the Society for Neuroscience Conference in 2018. I am also on pace to meet the two remaining goals for 2019. My abstract has been accepted for a poster presentation at the Vision Sciences Society annual conference which will continue to increase the visibility of this research and there is a strong likelihood of submitting a second article by the end of the year. Data has already been collected and analyzed for three experiments which will be the foundation of the forthcoming paper and several follow-ups are already in the data collection phase.

Major Activities: We have made substantial progress toward the Specific Aims during the last year.

First, a novel lie paradigm was developed to allow for the temporal divorce between the stimulus to be lied about and the participant response and to force the integration of the lie into a broader scenario. Following a surprising finding of a sustained parietal positivity, suggesting differences in working memory demands, a second paradigm was developed based on traditional contralateral delay activity (CDA) tasks. This task allows the further investigation of the differences in visual working memory demands between lying in the moment or after a delay compared to truth telling. To date a total of 196 participants have been run under aim 1 of the grant.

The CDA paradigm has shown reduced working memory load, as indexed by the CDA, when lying after a delay compared to truth telling but not when a delay is given. These findings suggest that individuals may employ different cognitive mechanisms to lie depending on the cognitive demands of the scenario, including time pressures. These findings challenge the more traditional cognitive models of deceit that posit inhibition of the truth as a necessary step in the lie process as our findings suggest that under certain conditions participants may employ a cognitive mechanism with reduced, rather than increased, working memory demands as would be seen if the truth were also being maintained. The current experiment builds on this finding by testing whether the same working memory differences are present when participants are cued after, rather than prior, to stimuli presentation.

Second, we examined the ability of individuals to exert conscious control over up and down regulation of memory encoding, relevant to both the present sense impression and the

assumption of reduced memory errors for contemporaneous lies and in assessing the efficacy of curative instructions given by a judge to a jury to disregard improperly admitted evidence, the most common remedy for wrongfully admitted evidence and which has been endorsed by the Supreme Court as a sufficient remedy. A total of 89 participants were run for this line of research. The article now published in *Memory & Cognition* was the product of this research.

Third, a video narration project is currently being piloted to advance aims 2 and 3 of the grant and assess individuals' ability to narrate crimes truthfully or deceitfully in real time or after a delay and third party listeners' ability to assess the truthfulness of the narratives. The videos are based on research conducted in the eyewitness testimony field and provide a baseline truth from which narrators can then deviate while narrating either in real time or delay. The videos are currently being scored by multiple raters to get a common baseline and ensure inter-rater reliability.

Specific Objectives: My proposed timeline had one major objective between renewal and the present date, presenting at a conference to increase the visibility and impact of the research. This has been accomplished with me presenting the paper at the 2018 Society for Neuroscience. The two previous goals have also been met with an article now published in *Memory & Cognition* and having passed my qualifying exam and officially entered doctoral candidacy. My remaining objectives for the year are to submit a second paper premised on the results from the contralateral delay activity task and presenting at the Vision Sciences Society annual meeting. I am on track to accomplish both of these by the end of 2019. Additionally, I

plan on submitting to the Conference on Empirical Legal Studies for this fall and my committee is pleased with my current progress and anticipates me defending in the Spring of 2020.

Significant Results: For the CDA task, as expected, there was a significantly larger working memory load when there were two items in the array rather than one item in both the 0 and 3 second conditions, as indexed by the CDA mean amplitude ($p < 0.001$). Interestingly, there was also a significant interaction between response and item, with the CDA increasing less for lying from one to two item arrays than for truth telling ($p = 0.04$). In terms of reaction time, participants were significantly faster to respond for one item arrays than two item arrays ($p < 0.001$) in every condition except for when lying after a 3 second delay. There was no significant difference in reaction time between truth telling and lying ($p = 0.51$). Based on these results individuals do not appear to hold two representations of a to be lied about item in working memory, at least as indexed by the CDA. Our findings do not support the traditional cognitive model of lying, which requires maintaining multiple representations in working memory. Instead, individuals may ignore to be lied about stimuli. A delay may or may not be necessary to implement this strategy, something that a current follow up using retro cues is currently investigating. This strategy may make it less cognitively demanding to lie and result in faster reaction times, but could impair one's ability to integrate a lie into a coherent scenario. These finding form the basis of a manuscript that I aim to submit to journals before the end of the year.

Additionally, a first authorship paper in *Memory & Cognition* has been published on the top down control of memory encoding. This paper has importance both directly for the validity

of FRE 803(1), the Present Sense Impression, where one of the core assumptions behind the rule is a reduced risk of memory errors for contemporaneous lies compared to past event lies, and for the empirical validity of curative instructions, the most common remedy for mistakenly admitted evidence and which has been endorsed by the Supreme Court.

Key Outcomes and Other Achievements: I have continued to make progress towards my degree and remain on schedule to graduate in May 2020. I passed my qualifying exam and a recent committee meeting on my progress and future directions went well and the committee was pleased with my progress and future directions and provided invaluable feedback on how to proceed both with the scoring of the videos for aims 2 and 3 and for the additional follow-up EEG studies for aim 1. The committee voiced support for defending and graduating in the Spring of 2020. I have another progress meeting scheduled in six months.

In short, data collection has already been completed on five experiments for aim 1 forming the basis of a manuscript to be submitted this year, videos for aims 2 and 3 have been chosen and are currently being piloted and tested for inter-rater reliability, one paper has already been published under the ambit of the grant, and I have continued to display satisfactory progress towards my degree. Thank you to the NIJ for its recognition of the importance of this line of research and its continued support.

Opportunities for Training and Professional development: The project has allowed me to continue to develop as a scientist under the guidance of my PI, (b)(6) and dissertation committee. My experimental design and data analysis has continued to improve

through designing follow-up experiments to build on my results. My writing has improved through the writing of a paper published in *Memory & Cognition* and a manuscript to be submitted later this year. My presentation skills have improved through lab meeting presentations, a presentation to the entire neuroscience department, guest lectures in Vanderbilt Law School's Law & Neuroscience class and an undergraduate psychology class, and a poster presentation at the Society for Neuroscience conference.

Dissemination of Results: A paper based on research under this grant has been published in Memory and Cognition and I hope to submit a second paper for review before the end of the year. For presentations, I presented my findings to the Vanderbilt Neuroscience department in April, the Society for Neuroscience Conference in November, and guest lectured in the Law & Neuroscience class in the law school and an undergraduate psychology course. I also have been accepted to present at this year's Vision Sciences Society Annual Meeting and intend to submit to the Conference for Empirical Legal Studies this fall.

Plan for the Next Reporting Period: I intend to continue data collection on the follow up experiments based on the results from the novel lie paradigm and CDA paradigm. These include a retro cue version of the lateralized CDA task and a follow up on the novel lie paradigm that equalizes the proportions of lies and truthful responses. I also intend to begin data collection on aims 2 and 3 as soon as piloting of the videos is completed.

The existing results and data from these follow ups will form the basis for my presentation at the Vision Sciences Society Annual meeting and a planned second paper to be submitted by the end of 2019.

Products:

Sundby, C. S., Woodman, G. F., & Fukuda, K. (2018). Electrophysiological and behavioral evidence for attentional up-regulation, but not down-regulation, when encoding pictures into long-term memory. *Memory & cognition*, 1-14.

Sundby, C. S. & Woodman, G. F. (2018). The neuroscience of legal evidentiary rules: Using electroencephalography to test whether contemporaneity is a safeguard against deceit. Poster presented at the Society for Neuroscience in San Diego, CA.

Impact: It is hoped that the results from this research can help motivate scientists and policy makers to investigate the empirical validity of the assumptions imbedded in the federal and state rules of evidence. A better understanding of the validity of these assumptions will allow policy makers to better balance accuracy, legitimacy, and efficiency, the stated goals of the Federal Rules of Evidence, and could result in a more just and efficient legal system.

Changes/Problems: There are no major changes or problems to report, though several follow-ups have been undertaken to clarify and expand our findings that were not explicitly laid out in the grant. The majority of the past year has focused on a lateralized version of the lie paradigm to further explore and explain our unexpected sustained parietal positivity finding in the novel lie paradigm task and exploring the possible implications for working memory differences between lying and truth telling under different time constraints. Our findings in the lateralized CDA task do not fit with the traditional cognitive model of lying, with no observed difference in

reaction time. This, however, is viewed more of as a feature than a problem since it is consistent across experiments and could be explained by different cognitive mechanisms being employed when lying in different circumstances.

Special Reporting Requirements: None.

Budgetary Information: The only charges to the grant have been for the graduate student stipend and for payment of study participants.