OMB No. 0925-0001 and 0925-0002 (Rev. 10/2021 Approved Through 09/30/2024)

BIOGRAPHICAL SKETCH

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NAME: Chelsea Helion

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Assistant Professor, Temple University Psychology Department

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

| INSTITUTION AND LOCATION | DEGREE  (if applicable) | Completion Date  MM/YYYY | FIELD OF STUDY |
| --- | --- | --- | --- |
| Temple University, Philadelphia, PA | B.A. | 05/2009 | Psychology |
| Cornell University, Ithaca, NY | Ph.D. | 08/2014 | Social Psychology |
| Columbia University, New York, NY | Postdoc | 07/2019 | Social and Cognitive Neuroscience |

**A. Personal Statement**

**My research focuses on emotion and social cognition in adult and developmental populations. Since 2019, I have been the director of the Social and Affective Neuroscience Lab at Temple University, wherein we examine how emotional experience and intensity impacts social decision-making, self-regulation ability, and memory. Within Temple’s department, I am affiliated with the Social Psychology and Cognition and Neuroscience subareas, and advise PhD students in both programs. The goal of the proposed research is to examine cerebellar computation in social cognition during development. The proposed approach, of combining social psychological theory with cognitive neuroscience methods has been one that I have utilized throughout my career to date. I completed my graduate school training at Cornell University and Weill Cornell Medical College with Dr. David Pizarro and Dr. BJ Casey, exploring emotional influences on social cognition in adult and developmental populations. I completed my postdoctoral training at Columbia University with Dr. Kevin Ochsner, and focused on how specific social contexts (i.e., moral vs. nonmoral) influence emotion regulation ability in children and adults. I have a great deal of experience studying emotional and social influences on cognition, particularly within naturalistic experimental designs including film clips, such as those used in this proposal.**

**B. Positions, Scientific Appointments, and Honors**

**Positions:**

**Assistant Professor, Temple University Psychology Department (2019 – present)**

**Postdoctoral Research Scientist, Columbia University (2017 – 2019)**

**Honors/Fellowships:**

Ruth L. Kirschstein National Research Service Award NIH (F32HD081960) 2014-2017

Fellow, Summer Institute in Cognitive Neuroscience—UC Santa Barbara 2014

Fellow, Summer Institute in Social Psychology—Princeton University 2011

Merck Fellowship, Biology of Developmental Disorders--Cornell University 2010

NIH Multidisciplinary Training in Development and Learning Grant (PI: Finlay; T32 HD055177)

Graduate Trainee, Cornell University & Weill Cornell Medical College 2010-2014

Honorable Mention--National Science Foundation Graduate Research Fellowship 2010

Sage Graduate Fellowship—Cornell University 2009-2010

Diamond Scholars Undergraduate Research Grant—Temple University 2007

**C. Contributions to Science**

***\* indicates trainee author***

1. Emotional reactivity across development. In work with multiple collaborators across multiple institutions, I have examined the behavioral and neural substrates involved in emotional reactivity across development. This includes both functional and structural neuroimaging, and involving both social (e.g., depictions of negative or positive social interactions/emotional expressions) and non-social (e.g., appetitive craving) stimuli. This work has found evidence for a ventral-to-dorsal shift in medial prefrontal activity to negative stimuli from childhood into adolescence (Silvers et al., 2017), which indicated that the medial prefrontal cortex -- a transmodal association area that receives inputs from sensorimotor regions and integrates information across longer timescales -- may play an important role in affective reactivity and representation across development. To examine this question directly, research in my lab leveraged naturalistic methods (Mitchell, et al., 2022). We used representational similarity analysis (RSA) to identify developmental differences in recruitment of the neural circuitry involved in affective evaluation (i.e., amygdala, ventral striatum) and deriving affective meaning (i.e., vmPFC). This was one of the first studies to use this approach to examine developmental differences as a function of affective valence in the context of naturalistic stimuli.

1. Mitchell, W. J.\*, Tepfer, L. J., Henninger, N. M., Perlman, S.B., Murty, V.P., & **Helion, C.** (2022) Developmental differences in affective representation between prefrontal and subcortical structures, Social Cognitive and Affective Neuroscience, *17(*3), Volume 17, 311–322.
2. Silvers, J. A., Insel, C., Powers, A., Franz, P., **Helion, C.**, Martin, R. E., ... & Ochsner, K. N. (2017). vlPFC–vmPFC–amygdala interactions underlie age-related differences in cognitive regulation of emotion. *Cerebral cortex*, *27*(7), 3502-3514.
3. Martin, R. E., Silvers, J. A., Hardi, F., Stephano, T., **Helion, C.**, Insel, C., ... & Casey, B. J. (2019). Longitudinal changes in brain structures related to appetitive reactivity and regulation across development. *Developmental cognitive neuroscience*, *38*, 100675.

2. Emotional regulation using laboratory and naturalistic paradigms. My work on emotion regulation has largely focused on the effectiveness of cognitive reappraisal as regulatory strategy. In a developmental cross-sectional study, we found that reappraisal success increased with age, and that age was also associated with reduced amygdala activity and inverse vmPFC-amygdala connectivity (Silvers et al., 2017). Work from my lab focusing in cognitive reappraisal has examined strategy selection in naturalistic, real-world contexts (Mitchell et al., 2022). We examined how emotion regulation choice occurs in a high-arousal negative context – a haunted house. We found no evidence for the canonical relationship between affective intensity and strategy choice identified in earlier lab paradigms. Applying methods used in the affective forecasting literature, we found that the preference for distraction over reappraisal only emerged in participants who *read* about the haunted house events rather than experienced it for themselves. This indicates that the emotion regulation choices made in the lab do not approximate those made in the real world, which may limit the extent to which we can generalize laboratory findings to naturalistic, real-world emotional outcomes.

1. Mitchell, W. J.\*, Stasiak, J., Martinez, S. A., Cliver, K., Gregory, D. F., Reisman, S., ... & **Helion, C.** (2022). Emotion regulation strategy usage in a quasi-naturalistic context. PsyArXiv; DOI: 10.31234/osf.io/23wtz.
2. **Helion, C.,** Krueger, S., & Ochsner, K.N. (2019). Emotion regulation across the lifespan. In D’Esposito, M. (Ed.) *Handbook of clinical neurology* (163), 257 – 280. Elsevier: London, UK.
3. Silvers, J. A., Insel, C., Powers, A., Franz, P., **Helion, C**., Martin, R., ... & Ochsner, K. N. (2017). The transition from childhood to adolescence is marked by a general decrease in amygdala reactivity and an affect-specific ventral-to-dorsal shift in medial prefrontal recruitment. *Developmental cognitive neuroscience*, *25*, 128-137
4. Cohen, A. O., Dellarco, D. V., Breiner, K., **Helion, C.**, Heller, A. S., Rahdar, A., ... & Casey, B. J. (2016). The impact of emotional states on cognitive control circuitry and function. *Journal of cognitive neuroscience*, *28*(3), 446-459.

3. Emotional Influences on Cognition. Emotion (and its regulation) plays a key role in many psychological processes – memory, learning, and decision-making can be influenced by the affective features of the stimuli, the reactivity of the individual, and extant environmental factors and stressors. Another line of research examines how emotions can influence these types of cognitive processes, in particular, decision-making, memory retrieval, and meta-cognition. My research in this space has examined how experience performing an action influences the degree to which it is represented using more affective language (Helion et al., 2022), and how negative affect can bias autobiographical memory retrieval for moral events (Helion et al., 2020). Work in my lab has followed up on what factors influence memory for one's emotional experience using a combination of naturalistic and physiological methods (Stasiak et al., 2023).

1. Stasiak, J. E.\*, Mitchell, W. J.\*, Reisman, S. S., Gregory, D. F., Murty, V. P., & **Helion, C.** (2023). Physiological arousal guides situational appraisals and metacognitive recall for naturalistic experiences. *Neuropsychologia*, 108467.
2. **Helion, C.,** Helzer, E. G., Kim, S., & Pizarro, D.A. (2020). Asymmetric moral memory for harming versus being harmed. Journal of Experimental Psychology: General, 149(*5*), 889-900.
3. **Helion, C.,** Ward, A., O’Shea, I., & Pizarro, D.A. (in press). Making molehills out of mountains: Removing prior moral meaning from prior immoral actions. Journal of Behavioral Decision-Making.
4. **Helion, C.**, Ochsner, K.N. The Role of Emotion Regulation in Moral Judgment (2018). *Neuroethics* **11,**297–308.

4. Emotional influences on social cognition and decision-making. My final line of research examines both emotion and regulation in social and decision-making contexts. This research aim combines both experimental and naturalistic research paradigms, and the use of social computational methods including Natural Language Processing (NLP) and graph theoretical methods. My initial research in this space focused on how an affective association tied to money can inform spending behavior (Helion & Gilovich, 2014) and leveraged both controlled laboratory studies and archival consumer data to examine how these processes manifest in the real world. Additional research in my lab has examined how emotion influences social-comparison in the context of the COVID-19 pandemic, finding that individuals who reported being more concerned about COVID-19 showed a more pronounced self-other asymmetry in beliefs about the number of actions that they versus peers took to mitigate its spread (Ulichney et al., 2022). However, before one can use peers as a benchmark, one needs to know where one stands in a given social structure. Learning the structure of a social network is a dynamic process that involves navigating a complex social environment and identifying the nature of relationships between and across individuals. My lab has examined how individuals make inferences about interpersonal relationships via passive observation of dyadic interactions (Schmidt et al., 2022). We found that participants successfully learned the structure of a novel social network using naturalistic stimuli. Using NLP on conversational dialogue, we found that pairwise semantic similarity predicted relational learning. This is one of the first studies to examine social network learning in naturalistic contexts and to use linguistic or verbal information to do so.

1. Schmidt, H.\*, Tran, S., Medaglia, J., Ulichney, V.\*, & **Helion, C.** (2022). Conversational linguistic features predict social network learning. https://doi.org/10.31234/osf.io/fn4my
2. **Helion, C.,** & Gilovich, T. (2014). Gift cards and mental accounting: Green‐lighting hedonic spending. *Journal of Behavioral Decision Making*, *27*(4), 386-393.
3. Ulichney, V.\*, Jarcho, J. M., Shipley, T. F., Ham, J.\*, & **Helion, C.** (2022). Social comparison for concern and action on climate change, racial injustice, and COVID‐19. *Analyses of Social Issues and Public Policy*, *22*(2), 469-489.

Complete list of Published work in MyBibliography

<https://www.ncbi.nlm.nih.gov/myncbi/chelsea.helion.1/bibliography/public/>