Professor Logan,

Editor-in-Chief, *Cognitive Psychology*

Dear Professor Logan,

We are excited to submit our manuscript “Algorithms of Adaptation in Inductive Inference” as a full-length article to Cognitive Psychology. The paper is coauthored with Nikolaos Theodoropoulos (University of Edinburgh) and Neil Bramley (University of Edinburgh).

In this paper, we developed a new method for studying the algorithmic mechanisms underlying belief change in compositional theory spaces. Specifically, we focused on symbolic hypothesis adaptation in a challenging active learning environment involving both single learners and dyads. We report two behavioral experiments in which adults’ initial hypotheses are challenged by additional evidence actively gathered by themselves (Experiment 1) or evidence gathered by someone else (Experiment 2). Our results demonstrate that:

* People’s revised hypotheses are anchored to idiosyncratic elements of their initial hypotheses, suggesting that they use additional evidence to *adapt* their hypotheses by means of local search
* Overall, this local search was best described by an adaptation algorithm that changes small parts of a hypothesis while keeping the rest of the hypothesis fixed
* If confronted with additional evidence gathered by someone else (Experiment 2), people changed their initial hypotheses less frequently

By varying the active- and social learning evidence between two experiments, we were able to compare how different forms of evidence influence people’s adaptive search for better programs. Our work also provided insights into how people might deal with the inherent complexity of intractable computational problems, arriving at close-to-normative performance with finite computational means. Overall, we believe that both our novel approach for studying hypothesis adaptation and the findings from our behavioral experiments will be of interest to Cognitive Psychology readers.

Potential associate editors for this paper might include yourself, Jennifer Trueblood, Arthur Markman, and Ulrike Hahn. Thank you for your consideration.

Based on their expertise, we suggest the following reviewers:

* Prof. Elizabeth Bonawitz (elizabeth.bonawitz@rutgers.edu), Rutgers University
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Sincerely,

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