UC Merced
Proceedings of the Annual Meeting of the Cognitive Science Society

Title
Representation matters: A PDP model of impression formation and person knowledge

Permalink
https://escholarship.org/uc/item/13n492gd

Journal
Proceedings of the Annual Meeting of the Cognitive Science Society, 44(44)

Authors
Cree, George S
Yilma, Ruth M.
Wu, Brian

Publication Date
2022

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

Representation matters: A PDP model of impression formation and person knowledge

George Cree
University of Toronto Scarborough, Toronto, Ontario, Canada

Ruth M. Yilma
University of Toronto Scarborough, Toronto, Ontario, Canada

Brian Wu
University of Toronto Scarborough, Toronto, Ontario, Canada

Abstract

When we encounter a person we rapidly form an impression. This impression is shaped by factors inherent to the person and event, including gender cues, skin colour, clothing, and context, along with pre-existing knowledge about the world. We present a PDP model of impression formation and person knowledge that has roots in the study of semantic cognition. We trained our model to learn about people of different races, genders, and occupations (e.g., black female doctor), along with context related to those occupations (e.g., hospital bed), and semantic attributes related to those occupations (e.g., intelligent). We demonstrate and explain the interesting finding that the model encodes knowledge about gender and race in early 'visual' hidden layers, despite no visual similarity being built-in, and no feedback connections from 'semantic' regions. This suggests a third mechanism through which the knowledge we hold about people may quite literally shape the way we see them.

In J. Culbertson, A. Perfors, H. Rabagliati & V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society.* ©2022 The Author(s). This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY).