Preparing a learner for an independent future

Divya Sundar
UC Berkeley, Berkeley, California, United States

Kartik Chandra
MIT, Cambridge, Massachusetts, United States

Max Kleiman-Weiner
University of Washington, Seattle, Washington, United States

Abstract

Caregiving helps learners survive in the present and ultimately thrive independently without their caregiver in the future. While some caregiving provides immediate benefits, other actions focus on long-term development, even if they cause short-term discomfort or setbacks. For example, a parent might allow their child to fail in a game to learn a useful lesson about the value of perseverance. Here, we develop a probabilistic model of caregiving with a recursive theory of mind using the Memo programming language that captures these intuitions. The model considers learners as POMDP planners, and plans over such learners to intervene on their beliefs in a way that will be valuable in the future. As predicted by the model, participants favor improving learners' knowledge over immediate efficiency, but only when that knowledge has future value. Effective caregivers thus think several moves ahead, accepting short-term costs to prepare learners for long-term success.

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