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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

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Publication Date

2020

Peer reviewed

A Task and Motion Approach to the Development of Planning

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Abstract

Developmental psychology presents us with a puzzle: though children are remarkably apt at planning their actions, they suffer from surprising yet consistent shortcomings. We argue that these patterns of triumph and failure can be broadly captured by the framework of task and motion planning, where plans are hybrid entities consisting of both a structured, symbolic skeleton and a continuous, low-level trajectory. As a proof of concept, we model two case studies from the tool use literature and show how their results can be understood by the interaction of symbolic and continuous plans.