Knowing What Counts for Counting

Karla Perez
MIT, Cambridge, Massachusetts, United States

Max Siegel
MIT, Cambridge, Massachusetts, United States

Nicole Coates
Massachusetts Institute of Technology, Cambridge, Massachusetts, United States

Josh Tenenbaum
MIT, Cambridge, Massachusetts, United States

Laura Schulz
Massachusetts Institute of Technology, Cambridge, Massachusetts, United States

Abstract

Children know a lot about counting, even before they can count; for instance, even toddlers know that the counting routine involves establishing one-to-one correspondence between number words and items counted. Here we varied the size, numerosity, density, and layout of elements of sets, and asked children which set was easier to count in pairwise comparisons across twelve trials. We also asked children themselves to count 5 to 15 items arranged in straight lines. Even children who could not count to 15 recognized that it was easier to count fewer than more dots and recognized that structured sets were easier than random arrays; however, they failed to recognize that some layouts made tracking easier than others. This suggests that children's meta-knowledge about counting precedes their ability to count for some but not all properties of sets.

In L. K. Samuelson, S. L. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society.*