

[Paper Symposium Integrative Statement; Word count = 250; Rating = 5.0]

What Makes Us Sick? Naïve Theories and Biological Reasoning

This symposium develops new findings demonstrating children's sophisticated reasoning about biological events. We suggest that children's knowledge of biological kinds is instantiated in theories—abstract, coherent, defeasible representations of causal structure, (e.g. Carey, 1985). By examining children's naïve biology, we demonstrate three hallmarks of causal knowledge: theories generate explanations; theories shape the interpretation of new evidence; and, theories constrain inductive inferences of category membership. However, this research also sheds insight on the tensions between theories and evidence, domain specific beliefs and domain general beliefs, and predictions and explanation. Thus, a closer examination of children's naïve theories in the domain of biology may provide insight on more general questions of conceptual change.

While previous research on children's biological reasoning suggests that younger children struggle with prediction tasks, Paper 1 provides findings that 3-4-year-old children are remarkably competent at providing biological explanations, even appealing to invisible substances. This work contrasts the role of explanations and predictions in children's naïve theories. Paper 2 demonstrates a striking developmental trend in children's ability to interpret evidence supporting a domain inappropriate (psychological) cause of a biological effect, and explores the interaction of children's theories and interpretation of evidence. Paper 3 examines how experience influences the salience of domain-general taxonomic reasoning and domain-specific ecological reasoning in children, suggesting that biologically relevant experience is associated with increased domain-specific ecological reasoning but is unrelated to domain-general taxonomic

reasoning. A conversation about children's biological knowledge will be lead by our discussant, an expert on naïve biology and children's concept acquisition.