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**Elizabeth A. Hobson\*** (emoseman@nmsu.edu), NM , and **Simon Dedeo**. *From aggression to dominance: the logic of missing links closes the gap between behavior and knowledge*. Preliminary report.

Individual actions are fundamentally important in the emergence of group-level social structure. Dominance hierarchies in animals are built from ranking individuals based on patterns of aggression. Hierarchies can also provide knowledge that can facilitate inference of third-party relationships. We analyzed aggression in two groups of captive monk parakeets (*Myiopsitta monachus*) to (1) quantify the behavioral structure that led to the formation of a dominance hierarchy and (2) test whether individuals used third-party information contained in the hierarchy to make strategic decisions about how to behave. Basic models of aggression can reproduce the rank-order hierarchy without attributing great cognitive complexity to individuals. However, these models were unable to account for the complex ways in which actual birds expressed aggression. Instead, behavior was structured well beyond that predicted by simple hierarchy maintenance. Analysis of graph motifs in the aggression network revealed that observed aggression is structured in part by the existence of transitive chains. These transitive chains provided a cognitively-accessible structure that individuals could use infer third-party relationships and avoid unnecessary and potentially costly social interactions. (Received February 11, 2014)