

Title: Role of social experience in social network stability

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### Abstract

Social interaction is essential for the survival of most animals. While some species are solitary and only come together to mate, other species aggregate in groups, establish hierarchies and social networks. Within these social networks individuals must distinguish members of their own group from non-members, and remember the varied social interactions that establish and maintain social hierarchy. Most individuals within a social network interact with multiple individuals and are likely differentially influenced by these interactions. Therefore, in order to understand how social experience shapes future interaction, it is essential to consider the complex social environment of each individual.

In this study, I created a simplified social network of three individuals to assess how multiple interactions affect social dynamics of the crayfish *Orconectes obscurus*. I examined the influence of repeated social interactions on social status stability and aggression levels of individuals within a social network. *O. obscurus* were placed in a tank to establish a dominance hierarchy. Following this initial interaction, individuals were isolated and re-introduced into the tank five times to assess hierarchy and social status stability. All interactions were video recorded. Aggression intensity, fight duration, and frequency of defensive and offensive behaviors were compared within and between interactions for each individual. I predicted that repeated interactions with known individuals would cause a decrease in overall aggression levels of the social group, leading to stabilization of social hierarchy. Results of this study will be discussed.