The evolution of conflict resolution

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Recently published in the *Journal of the Royal Society Interface*, Assistant Professor Christoph Riedl's latest research examines a model that might explain how humans resolve conflict, and what these actions say about biological and social behavior, both now and into the future.

Dynamic networks allow individuals to resolve conflicts by managing their network connections rather than changing their strategy. This is a common phenomenon among humans who can make deliberate choices regarding who they want to interact with.

"Let's use an example: You're at a friend's house and you're both eating appetizers," explains Riedl. "When only one appetizer is left, how do you decide who gets it? If you both really want it, then you are involved in a potential conflict, and there are several socially accepted ways of solving the issue. But which norm should you settle on, and why?"

With these social constructs in mind, Riedl's research started by looking at traditional games of conflict, such as "the game of chicken," and applying computer simulations to examine how

disagreements get resolved efficiently to encourage cooperation.

These simulations showed Riedl and his team—Tufts University Associate Professor of Philosophy Rory Smead, Northeastern University Associate Professor of Philosophy Patrick Forber, and Network Science Institute Ph.D. student Michael Foley—that one social solution far outweighs the other, instead of both behaviors being exhibited equally.

"Host-guest norms or 'paradoxical behavior' account for the vast majority of our simulated final state solutions—in other words, the host gives the guest the last appetizer," says Riedl. "The opposite solution where the host takes the appetizer for himself, called ownership norms or 'bourgeois behavior,' is quite rare."

"This is especially interesting in the context of human biological behavior because in the animal kingdom, territoriality or ownership norms are ubiquitous."

And so, how and why did the host-guest norm evolve into the more socially accepted conflict resolution in human beings, and how might that affect the future? The research suggests that this is due to the dynamic nature of the social network which allows actors to choose their interaction partners. This entails that insofar ownership and territoriality are probably widespread due to the intrinsic importance of holding resources or the value of owning a territory rather than as a convention for avoiding conflict. Riedl and his fellow researchers are hard at work to unveil additional details about the evolutionary dynamics of when or where certain conventions may arise.

More information: Michael Foley et al. Conflict and convention in dynamic networks, *Journal of The Royal Society Interface* (2018). DOI: 10.1098/rsif.2017.0835

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