**Peacebuilding in Experimental Social Networks**

**PI:** Akihiro Nishi (UCLA Epidemiology); **co-PIs:** To Be Determined

**OVERVIEW.** The preclusion of individuals to “harm” – paying a cost to harm others – rather than pursue peaceful alternatives has been readily apparent in recent events. Examples include the 2022 Russian invasion of Ukraine and the Robb Elementary School Shooting in Uvalde, Texas. Our proof-of-concept online social network experiment using real human subjects (N = 719) revealed that participants are more likely to harm connected neighbors when they are aware that at least 15% of their neighbors chose to harm previously (9% chance to harm vs. 5% if the 15% threshold was not exceeded) [Result 1]. The experiment also revealed that increases in decision times were associated with increased chances of choosing to harm as opposed to defection (paying no cost and not impacting others) or cooperation (paying a cost to benefit others) [Results 2]. Because these results were only determined observationally, we cannot definitively say that either *making others’ harming execution invisible* (not informing players that they are surrounded by many prior-round harmers) or *providing in-game time pressure* (by requiring in-game decisions to be made before a time limit) can reduce harming executions and build “peace” in experimental social networks. Therefore, in the proposed project, we aim to experimentally manipulate the visibility of harming and constrain decision time to examine these effects in two series of online social network experiments (Ns = 1,500 x 2 based on our sample size calculation).

**INTELLECTUAL MERIT.** This project proposes a framework to explore and discover as of yet unknown conditions that can contribute to peacebuilding (absence of harming in the online social network experiment setting). Such miniature online short-lived networks may lead us to identify precursors to peace (in behavioral terms) that we cannot observe outside of the laboratory setting. Some of these conditions may be translational; for example, if we find that time pressure can reduce the chances of harming, it may follow that cease-fire negotiations should be time-limited such that diplomats and stakeholders can intuitively choose to be peaceful and avoid future conflict (social heuristics hypothesis).

**BROADER IMPACTS.** Besides the broad impact of our potential intellectual findings, the PIs will perform the following activities: (1) create new courses and tutorials on related topics; (2) organize workshops on experimental peacebuilding and the evolution of punishment (harming) at sociology and evolutionary biology conferences; (3) freely distribute the software and data sets developed from this research; and (4) encourage a diverse group of students to participate in the research.

**KEYWORDS.** The Evolution of Punishment; Visibility; Experimental Social Networks; Peacebuilding; Gun Violence

**PI BIO.** Akihiro Nishi, MD, DrPH is an assistant professor at UCLA Epidemiology. His expertise is in medical sociology, social network analysis, and the evolution of social behavior. He reported previously that making others' wealth invisible can address economic inequality and improve social welfare (Nishi et al, 2015, *Nature*) and that when others are cooperative, people's cooperative decision-making is faster (Nishi et al, 2016, *Sci Rep*) in online social network experiments. He has 8 years of experience using the *Groovy/Java*-based *Breadboard* software (breadboard.yale.edu), which he plans to use in the proposed online social network experiments.