**The Network Science Behind Weaponized Social Media**

Many citizens, scientists, and political and military officials are concerned with the potential for social media to be used to advance adversarial objectives. In the USA, the most recent concern has been foreign interference with electoral campaigns, but the problem is more general – interference any agency foreign or not may just as worrisome if not more so. In more focused conflict situations, the concept of an information battlespace and use of social media to shape that space has gained prominence. In this presentation, I explore concepts from network science that impinge on the use of social media to advance adversarial objectives. The line of research I discuss focuses on the “majority illusion,” a phenomenon in which, based on the composition of their one-hop neighborhoods, a majority of a population conclude that an opinion or a behavior is held by most of the population when in fact that behavior or opinion is held only by a minority of individuals, and possibly a slim minority at that (Lerman, Yan & Wu 2016). The second line of research I discuss focuses on persistent minorities, small groups that push a particular convention and, unlike the majority, are immune to costs incurred for failure to coordinate with the majority’s practice. The important question is how large the minority must be to upset the established convention, a question researched experimentally by Centola, Becker, Brackbill & Baronchelli (2018). I describe a research agenda which first explores the susceptibility to majority illusion of theoretically defined types of networks not previously examined (specifically, small world and forest fire networks). Second, it embeds the persistent minority problem in these theoretical classes of networks, extending the experimental work which was limited to, effectively, small complete graph networks.

REFERENCES

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