Reading Excerpts, Part 1

for

Lesson – Fertilize Like the Joneses: The Ecology of Prestige

Excerpted Readings for Class 1 (with small changes for clarification):

1. **Experimental evidence for tipping points in social convention**

Centola, D., Becker, J., Brackbill, D. et al. (2018). Experimental evidence for tipping points in social convention. Science, 360(6393), 1116-1119. https://doi.org/10.1126/science.aas8827

Tipping points in social convention

Once a population has converged on a consensus, how can a group with a minority viewpoint overturn it? Theoretical models have emphasized tipping points, whereby a sufficiently large minority can change the societal norm. Centola *et al.* devised a system to study this in controlled experiments. Groups of people who had achieved a consensus about the name of a person shown in a picture were then individually exposed to a confederate ("committed minority") who promoted a different name. The only incentive was to coordinate. When the number of confederates was roughly 25% of the group, the opinion of the majority could be tipped to that of the minority.

Abstract

Theoretical models of critical mass have shown how minority groups can initiate social changes in the emergence of new social conventions. Here, we study an artificial system of social conventions in which human subjects interact to establish a new "coordination equilibrium. " That is, a new consensus is reached among people with equal standing i.e., individuals do not differ in terms of power, wealth, etc. The findings provide direct empirical demonstration of the existence of a tipping point in the dynamics of changing social conventions. When minority groups reached the critical mass—that is, the critical group size for initiating social change—they were consistently able to overturn the established behavior. The size of the required critical mass is expected to vary based on theoretically identifiable features of a social setting. Our results show that the theoretically predicted dynamics of critical mass do in fact emerge as expected within an empirical system of social coordination i.e., during the researchers' experiments.

2. **Residential household yard care practices along urban-exurban gradients in six climatically-diverse U.S. metropolitan areas**

Locke, D.H., Polsky, C., Grove, J.M. et al. (2019). Residential household yard care practices along urban-exurban gradients in six climatically-diverse U.S. metropolitan areas. *PLoS ONE 14*(11): e0222630. https://doi.org/10.1371/journal.pone.0222630

Discussion

Because yard care practices examined here have financial costs, we expected that higher income-earning households would be more likely to irrigate and apply fertilizers and pesticides than lower-income households. We found that higher-income households were more likely to report irrigation, fertilization and pesticide application than lower-income households (~16% to 23% greater odds, Table 3), after adjusting for age, known neighbors, population density and regional influences. Income was the only household-level variable that was statistically significant across all models for yard care practices, so yard care practices may be cost-prohibitive for some households who wish to obtain a well-manicured aesthetic.

Yard care behaviors have also been hypothesized to vary with the resident's age. Previous research on the relationship between age and yard care practices revealed mixed findings. Some researchers have suggested the capacity for yard care decreases with increasing age [24, 42, 43], while other studies employing multivariate analyses have revealed no significant relationships [i.e. 15, 16]. In this systematic, multi-site comparative sample, we found a ~9% increase in the odds of fertilizing with increased age, but no significant associations between age and irrigation or pesticide application.

The relationship between age and yard care could be positive for some age classes or life stages and negative for others, which would explain a null finding. Time and money might be limiting factors for younger households. As a household ages there could be more available time and potentially more money, while retirement may lead to even more available time but fewer financial resources to invest in yard care. It is also possible that older and higher-income households are more likely to hire yard care service companies to perform these tasks, which would diminish the argument that ability declines with age. A study that did not find age to have a significant relationship with fertilizing frequency also found a significant and positive association with lawn care services [16]. Specifically, it cannot be assumed that the homeowner does the yard work. Thus, age may not be a predictor of capacity. Since our survey did not specifically identify who does the work of yard care, we are unable to further disentangle this relationship. The influence of age needs to be better understood in research theorizing and empirically documenting urban residential ecologies.

In addition to income and age, peer pressure may also influence yard care practices. Given the abundant literature on social norms and landscaping [14, 15, 17–22], we hypothesized a significant and positive relationship between the number of neighbors known by name and the use of water, fertilizer, and

pesticides. We found that knowing more neighbors by name corresponded to an ~9% increase in the odds of both irrigation and fertilization, but no significant difference in the odds of applying pesticides. This result may suggest that the desire to fit in and conform to neighborhood norms may increase when a household knows its neighbors by maintaining a neighborhood aesthetic through certain, but not all, yard care behaviors.