

Social Contagion and Associative Diffusion on Multilayer Networks

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Abstract

The question that how cultural variation emerges has drawn lots of interest in sociological inquiry. Sociologists predominantly study such variation through the lens of social contagion, generating lots of theoretical and empirical studies. The contagion model mostly attributes cultural variation to the underlying structural segregation, making it epiphenomenal to pre-existing segregated structure. Such concern makes the contagion model an insufficient explanation to some scholars. Arguing culture doesn't spread like a virus, Goldberg and Stein 2018 proposed an alternative called associative diffusion. In the associative diffusion model, cultural transmission follows a two-stage process. Observing others enacting certain behaviors, agents update their perception about what behaviors are compatible with one another, and then further adjust their preference by random perturbation, to cohere with the association. The associative diffusion model successfully explains cultural variation without attributing it to a segregated social structure. However, seeing strangers enacting certain behaviors may not suffice to prompt the agents to adjust their preferences. Instead of randomly adjusting preference, the tendency to align with closed others might be a stronger driving force. In light of this concern, we proposed an alternative model adapting the concept of multilayer network: on one layer, agents casually observed the behaviors of others, updating their belief about the association between behaviors, just like the first stage of the associative diffusion model; on another layer, upon influenced by closed others, agents adjust their preference about behaviors while satisfying the association between, just like the social contagion model. Using this approach, we entangle the effect of social contagion and associative diffusion through multilayer networks.

References

Goldberg, Amir, and Sarah K Stein. 2018. "Beyond social contagion: Associative diffusion and the emergence of cultural variation". *American Sociological Review* 83 (5): 897–932.