

## **The cultural transmission of sampling traditions in a network of musical collaborators**

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The role that demographic variables play in biasing cultural transmission remains one of the most critical questions in the field of cultural evolution. Network-based diffusion analysis (NBDA) is a recently developed statistical tool used to determine whether network structure biases the emergence of a novel behavior in a population. As NBDA is most useful in identifying social learning, a trait that is assumed to be present in our own species, it has been primarily applied to non-human animal models such as birds, whales, and primates. Despite this, the ability to include demographic variables in NBDA makes it uniquely suited to determining what factors bias information diffusion more broadly. The aim of the current study was to determine what demographic variables bias the diffusion of a sample through a network of musical collaborators, utilizing an extensive dataset mined from crowd-sourced, online databases. Sampling, or the adaptation and recycling of recorded material in a musical composition, is a nearly ubiquitous practice among hip-hop and electronic music producers. It provides an ideal research model for this question because of (1) the high copy fidelity of sampled material, (2) the reliable documentation of transmission events, and (3) the availability of demographic data for the artists involved. We conducted a case study of all documented transmission events involving “Amen, Brother” by The WinStons, which is thought to be the most sampled song of all time. We found that first-time sample usage was biased by the structure of the collaboration network, and that transmission was influenced by the sex and geographic location of the artists involved. These findings further illustrate the role that demographic variables play in biasing cultural transmission, and lay the methodological groundwork for future studies utilizing large datasets mined from the internet.