Virtual spaces mirror income inequality

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Income inequality drives social segregation and polarization not just in urban neighborhoods, but in online communities as well. That is the conclusion of a new paper by the New England Complex Systems Institute (NECSI) published in *Royal Society Open Science*. Importantly, this societal fragmentation is more than just the top one percent versus

the bottom 99: it exists between every economic class.

The Internet democratized the exchange of information, but the evolution of online social networks has mirrored the segregation of urban neighborhoods in real cities, according to NECSI's analysis of millions of tweets. Social media users have organized themselves into economically segregated echo-chambers. This breakup of information reinforces the fragmentation and polarization of communities.

By examining where people tweet and with whom they chat, NECSI researchers were able to map the networks of social mobility and communication in Istanbul, New York City, and several other U.S. cities. The networks of tweets were then compared to census data on neighborhood income.

The results show that people primarily interact with their own socio-economic group. Different income groups are distant both in the physical space and online. They are neither found in the same places, nor discussing similar issues. This divide exists not just between the wealthy and the poor, but more granularly between socio-economic classes.

Many U.S. cities have a history of racial segregation tied to economic class, but social fragmentation can arise autonomously in any community. Individuals share information and imitate the social norms of the people most familiar to them, self-reinforcing group identities.

Analysis of hashtags reveals the divergent topics being discussed in rich and poor neighborhoods. In American cities, lifestyle hashtags abound in richer areas, while sports, zodiac signs and horoscopes seem to be more popular in poorer areas.

For most cities, social segregation and polarization is driven more by the lack of mobility between neighborhoods, than the geographic distances

between them. This means that urban planning policies can influence the culture of neighborhoods. Desegregating the places where people live, work and shop may foster more interactions and communication, reducing polarization and conflict.