Who tweets and who flickrs?
—spatial, temporal, and socioeconomic patterns in the use of Twitter and Flickr

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Ideas are generated and spread at a rapid speed over the Internet every day. Ideas may lead to events in reality, while activities may inspire new ideas. In this process, people play a crucial role. The Information landscapes on the Web are created by people, so understanding the population who involve in creating the digital world is helpful for understanding the distribution and diffusion of ideas represented in various social media websites and online social networks. Human activities take place in particular locations at specific times, in both physical world and virtual world. Activities are not randomly distributed in space and time, but demonstrate spatio-temporal patterns. The places you have been to (either a location on the Earth, or a social media webpage) and have spent time regularly or occasionally signal your lifestyle that is usually strongly associated with your socioeconomic characteristics, such as age, gender, income, occupation, and so on. In other words, spatio-temporal footprints reveal a significant amount of information about the people who create them.

Online social networking and information sharing services have generated large volumes of spatio-temporal footprints, which are potentially a valuable source of knowledge about the physical environment and social phenomena. The footprint distribution and the characteristics of people who create them indicate the quantity, quality, and type of the data. Twitter and Flickr are two of the most popular social media sites with open APIs for downloading data; therefore, they were chosen as two examples for studying spatial, temporal, and socioeconomic patterns in the use of social media. Twitter is a social networking site that is widely used for daily chatter, conversations, sharing information and reporting news. Flickr is an online photo management service that allows uploading and sharing photos within and outside of groups. To understand the tweet and photo patterns and the users, two cases are studied: georeferenced tweet messages in Twitter and georeferenced photos in Flickr. This research presents exploratory analysis on the spatial and temporal patterns of

georeferenced tweets and photos, as well as the relationships between tweet and photo densities of places and the socioeconomic characteristics of people who live in those places. As expected, tweet messages and Flickr photos are not randomly distributed (Figure 1).

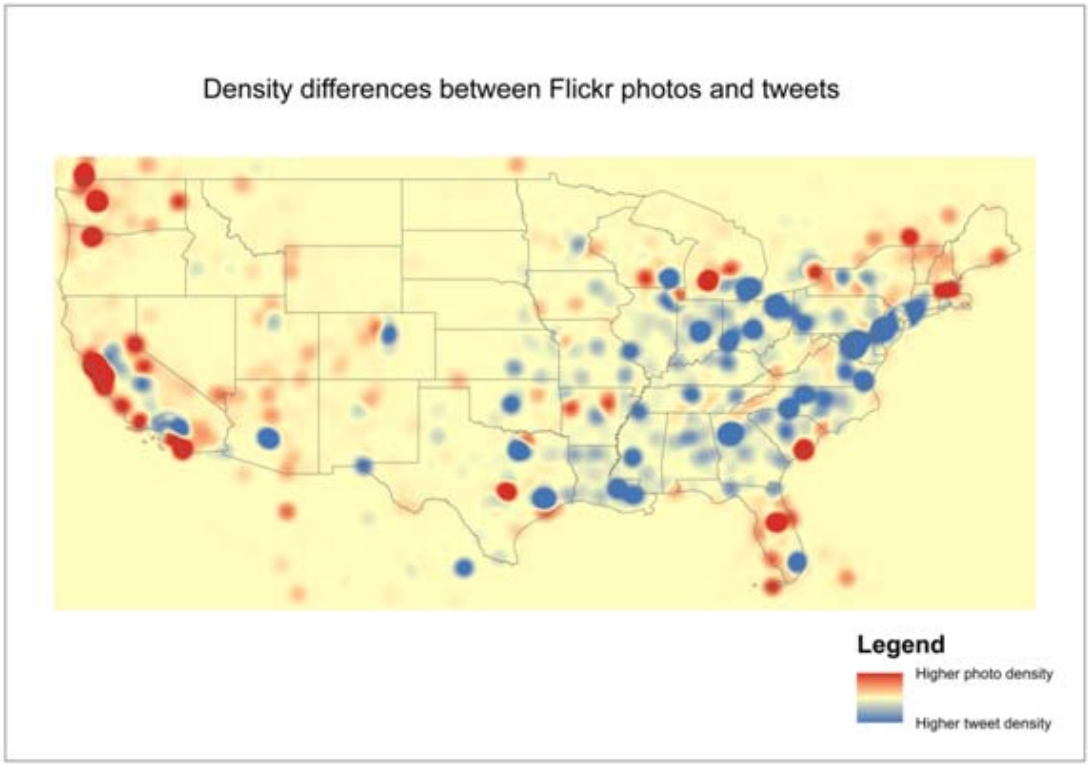

Figure 1: Density difference between Flickr photos and tweets

Ideally, the correlation would be calculated using individual profiles, but that type of data is not available, so we use locations as a media to link the tweets and the people. Ecological correlations between tweet and photo densities and the socioeconomic characteristics of people suggest that places with a majority of people with some specific characteristics are more involved in the generation of georeferenced tweets and photos in Los Angeles county. Further research is required to explain why people with some specific social and demographic properties are more involved in creating and spreading ideas over the Internet from the perspective of psychology and sociology.