

Spatial Technology Talks

This is a semi-regular series, hosted by spatial@ucsb, which aims to promote discussion and interaction within the university's spatial technology community and also share tools and techniques for mapping and spatial analysis.

The Geography of Cultures: New Methods for Decoding, Analysis, and Synthesis

Dan C. Baci

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Abstract: It is tempting to believe that ideas and culture are free to spread and therefore free of geography. However, the phenomenon of “culture shock” most dramatically questions and limits the validity of such hypothesis: When chasing your dreams and horizons, you may end up in a different culture on a different continent, and, under those circumstances, you may lose your sense of self. Geography and culture are inseparable because geography is an important medium for cultural life.

Although people carry their cultural values with them, they may reach a place where those values no longer apply. So to say, their cultural currency is no longer accepted—but this anecdotal evidence should really only raise interest in new research directions with global implications. At UCSB, Benjamin Cohen has shown that money has surprising geographies with massive political consequences on a global stage. Dan C. Baci, supported by the Interpretation Lab, continues along this path but goes further in studying the geography of cultures. In an age of information and knowledge, as Alvin and Heidi Toffler contemplated, cultures are the new currencies. Companies are no longer valued for their transaction volume alone, but also for their ability to amass information about people and their cultures. Yet, how are these personal, local, and global scales of culture interconnected? And how do mass and social media shift geographical distributions and reshape entire systems of value?

Studying these questions, Dan Baci envisioned and probed new methods of extracting geographical information from public media. Instead of relying on gazetteers, his team uses natural language processing and publicly contributed knowledge bases. This makes it possible to create many interconnected layers of geography, history, and cultural circles, allowing for the application of a richer stock of analysis and synthesis methods. In turn, these new possibilities for empirical assessment allow for the testing of new theory about the relationships between individuals, cultural canons, and shared global geography.

Imagine collecting hundreds of thousands of books, news, social media, and TV for everything called “Chicago school,” “Humanities,” and “Science.” What would these data reveal? Baci and his collaborators used supercomputing to decode natural language, and they went on to enrich these data with geographical and historical information. Furthermore, they combined historical evaluations with data analysis, dimensionality reductions, and classification. Finally, to make

sense of their results, they developed interfaces to interactively visualize distributions and stratification. Their GeoD and 7D toolkit is expected to be released to the public in a forthcoming research article.

The newly discovered geographical distributions of culture are surprising: There are maps of science, humanities, universities networks, postmodernism, national parks, oceanography, study abroad, and many more. And these geographies are not as you expect them. If you think that the U.S. Dollar is limited to the U.S., and that national parks are where they are, you will be surprised. The new methods allow us to refine our understanding of how culture grows in geographical space.

The new methods of analysis and synthesis were driven by theory and questions that preoccupied Baciu already during his Ph.D.; and the new findings confirm his earlier postulates. For him, the newly discovered geographical distributions are no longer surprising. Although new to humanities scholars, the theoretical foundations of his work are not new to everyone. Equivalent mathematics are a textbook-case of evolutionary dynamics already.

“United we stand” inspires not only collaborative spirit, but also a new research direction in the study of urban culture and diversity. “United” in this context means learning to listen to everyone. **Dan C. Baciu** has shaped this research direction most recently as Postdoc in English at UC Santa Barbara.