

Paper: Jumping on the Bandwagon: Visualizing the Social Space of Social Taggers

Abstract: In social tagging, cultural forces lead to conformance. A study of tags from *Delicious.com* demonstrated a socially generated bandwagon effect. Here the effect is discussed in the context of Bourdieu's notion of "social space" (1991). Social space of taggers provides boundary regions for cultural warrant in social classification.

Résumé: Dans l'étiquetage social, des forces culturelles poussent à la conformité. Une étude des étiquettes sur *Delicious.com* démontre un effet d'entraînement social. Dans la communication, cet effet est analysé dans le contexte de la notion « d'espace social » de Bourdieu (1991). L'espace social des étiqueteurs comporte des régions frontières au potentiel culturel dans la classification sociale.

1.0 Interactivity in Web 2.0

Interactivity is a hallmark of Web 2.0 social applications. Of particular interest to the knowledge organization community is social tagging, the interactive application of identifiers by the public to Web 2.0 resources. Social tagging has been analyzed from a number of perspectives, mostly by analyzing the tags from a semantic point of view. Some tags are functional (Kipp 2008), and some are explicitly descriptive, including synonyms and acronyms (Kipp and Campbell 2006). A very small number of tags are affective (Smiraglia 2010b), and the application of tags seems to follow consistently a power law such that only a few terms constitute the majority of semantic content among tags assigned (Munk and Mørk 2007a and 2007b, for example).

Another research stream exists in which attempts have been made to characterize taggers' behavior by interpreting the combined effect of the application of tags within the clusters that emerge from the effect of the power law. Smiraglia (2008, 2010a) used phenomenological analysis to suggest that *noetic* synthesis of taggers' individual ego interpretations lies at the base of the slight variability observed among tags in clear semantic clusters. These results also aligned well with analysis based on Langacker's (2005) theory of cognitive scanning, thus strengthening the role of self-reflection in acts of social tagging. Smiraglia (2010b, 3) wrote: "Self-reflection, takes place against the backdrop set by the culturally normative tags assigned by the relatively consistent prolific taggers." Jayroe (2011) found similar affirmation by analyzing homonymic tags. Thus there is some evidence that social tagging is less an egalitarian act of mass indexing than it is a public but still highly individual act in which resources are personally marked, perhaps for a variety of reasons.

Smiraglia (2010b) demonstrated a clear bandwagon effect in the social manifestation of alignment of subsequent tags with the clusters of dominant tags set by the leading taggers (p. 3):

The social action of tagging to get on the bandwagon creates a distinctly social classification for each website. Semantic divergence and syntagmatic conformance demonstrate cognitive semantic activity taking place between and among different user groups tagging the same sites. The taggers collectively are generating a classification with a social basis.

The resulting classification is truly “social,” in the sense that it is collectively generated and therefore represents or conforms to some cultural warrant. This suggests it is appropriate to revisit the collective activity of the taggers in question with regard to their behavior in observable social space.

2.0 The Concept of Social Space

“Social space” is any space where humans interact. Real places such as supermarkets and train stations constitute visible and obvious social spaces. But social space also can be metaphorical, when it describes the perceived territoriality of human existence. The idea is that humans perceive themselves against a backdrop of experience, which can be grasped metaphorically using a spatial, or protogeographical, template. Distance and closeness within social space are perceived spatially but filtered functionally through degrees of intimacy, power, etc. It is this second, metaphorical, meaning that is often used to describe communal or community activity in Web 2.0 social applications. Ding et al. (2009) and Song (2010) demonstrate the relationship between social tagging behavior and community membership, and Ding et al. (2010, 510) suggest that social Web applications influence sharing, trust, and collective intelligence that constitute forms of capital. Nascimento and Marteleto (2008, 397-8) describe the relational components of online social space in terms of experience, function, and perception of participants interacting with the objects of their collective interaction, i.e., online resources in social space.

A particularly effective interpretation of social space is described by Bourdieu (1991). As context he proposes the social world as topological (229), constructed on basic principles of “differentiation or distribution constituted by the set of properties active ... [which are] able to confer force or power.” Actors in social space are defined by their relative positions as well as by their interactions (230). Actors may occupy only one region but are distributed in two dimensions, which are circumscribed by the volume of capital they possess and the composition of their capital (231). Song (2010, 267) makes reference to Bourdieu when she suggests a shift from Web 1.0 to Web 2.0 that took place in the second dimension as capital shifted from non-economic social poles to predominantly for-profit economic poles. North, Snyder and Bulfin (2008, 897) place young people in the social space of Web 2.0 according to the first dimension, according to the volume of their cultural capital. Nascimento and Marteleto (2008, 400) suggest the perception of actors in Web 2.0 is key to their own realization of how they occupy social space, in other words, self-reflection is an essential component of how they use their social capital. Budd (2003, 29) refers to Bourdieu while looking toward a cultural warrant for social classification that embraces as definitive the “differences and distinctions” that bring people into classes—their social capital—and therefore views resources as discursive acts.

3.0 Visualizing Taggers’ Social Space

The purpose of this research is to gain better understanding of the behavior of taggers with regard to their roles in social space. Specifically, this study is an attempt to employ visualization techniques that will permit analysis of actors and their roles with regard to Bourdieu's notion of social capital. For analysis we return to the data gathered for the study reported in Smiraglia (2010a and b), for which 42 tagged websites were selected at random from *Delicious.com*, and for each site all tags (11,378 instances of 1730 tags) by all 3582 taggers were collected for analysis. The first phase of the study was focused on the taggers, of which the mean per site was 85.28 and the mean number of tags assigned per tagger was 3.36. As usual, the distribution of tagging followed a power law, with only 18 of the taggers acting 5 or more times. The second phase of the study was focused on the tags, and revealed the aforementioned bandwagon effect, by which (2010b, 4): "taggers strained to join the most frequently used tag clusters. Conceptual infixions surround normative isolates set by the prolific activity of the core taggers. Other taggers, trying to sidle up to the normative terminology do so by generating self-reflectively diverse variations of these normative terms." For every site tagged, the majority of taggers joined a small number of clusters of key terms, and most of the remainder could be regarded as linguistic or minor semantic variants of the key terms. Some of the variation is what Olson and Wolfram (2008) called syntagmatic, representing instances where taggers understand the terms necessary to participate in the social classification, but do not always represent them in the same way. Most of the observable variation fell into Langacker's (2005) category of conceptual blending, in which concepts belong to classes with fuzzy and overlapping boundaries. The result was a "social classification" by which the community of taggers acting interactively defined a small number of descriptive tags according to their group interaction, which constitutes cultural warrant.

3.1 MDS for Visualization

The 18 prolific taggers are the leaders who define the social classification by setting the key terms—the bandwagon—that all of the others follow. An interesting question, then, is: to what extent are they working together, socially? Multi-dimensional scaling was used to visualize the incidence of co-tagging, here defined as the co-occurrence of two taggers on the same site. As it happens, a two-dimensional map shows two clusters, which are easily identified by an accompanying dendrogram. In Figure 1 the two clusters are distinguished; note that the identities of the taggers have been protected by replacing their usernames with alphanumeric identifiers. Based on those identifiers, let us for now refer to these as clusters A and B, accordingly.

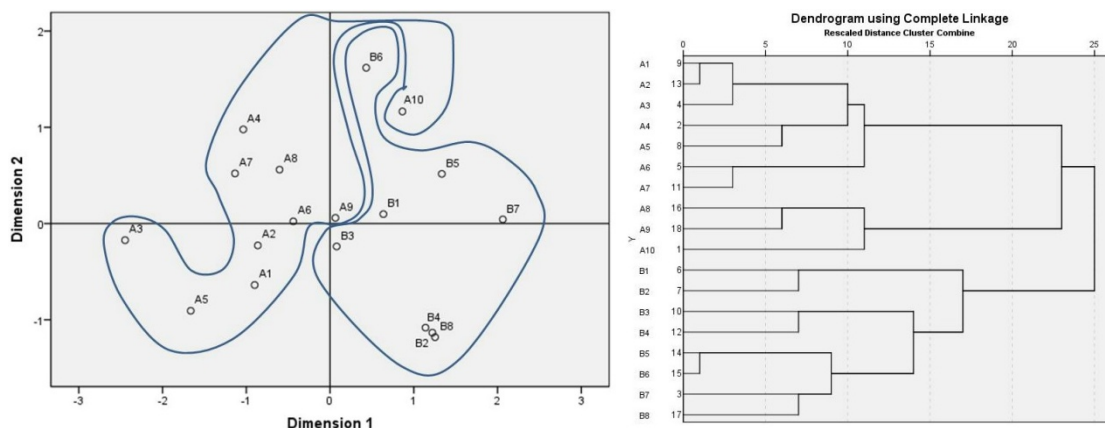


Figure 1. Social space MDS two-dimensional plot and dendrogram

The two-dimensional map shows the main regions of the social space, including the remarkable A10, who is allied with the cluster on the left but who seems to work in the region where the members of the other cluster operate. The dendrogram shows us that the strongest associations are those among pairs of individuals within the clusters, the regional identities are based on looser associations. This is made even more apparent in a three-dimensional plot, shown in Figure 2.

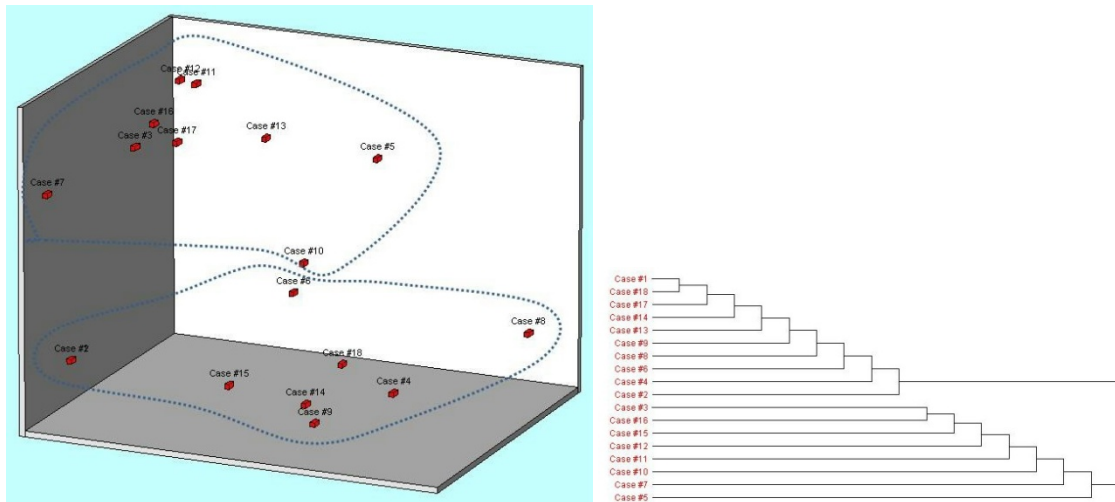


Figure 2. Social space MDS 3-dimensional plot and dendrogram

Cluster B hovers above cluster A, and again we see the curious proximity of case A10. We see, as Bourdieu suggested, differentiation of the social space, and that although there is interaction, residence in one or the other cluster, which is based on explicit associations, can be interpreted as reflecting the composition of their capital. The dendrogram suggests the associations are stronger in cluster A. The relative positioning of the regions reflects the volume of capital.

We can further break down each cluster, and these are shown in Figures 3 and 4.

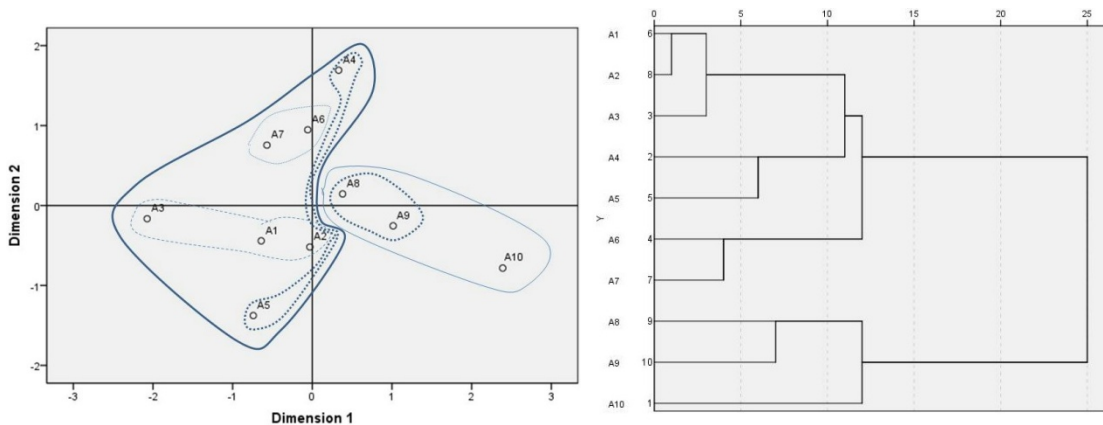


Figure 3. Social space of cluster A 2-dimensional plot and dendrogram

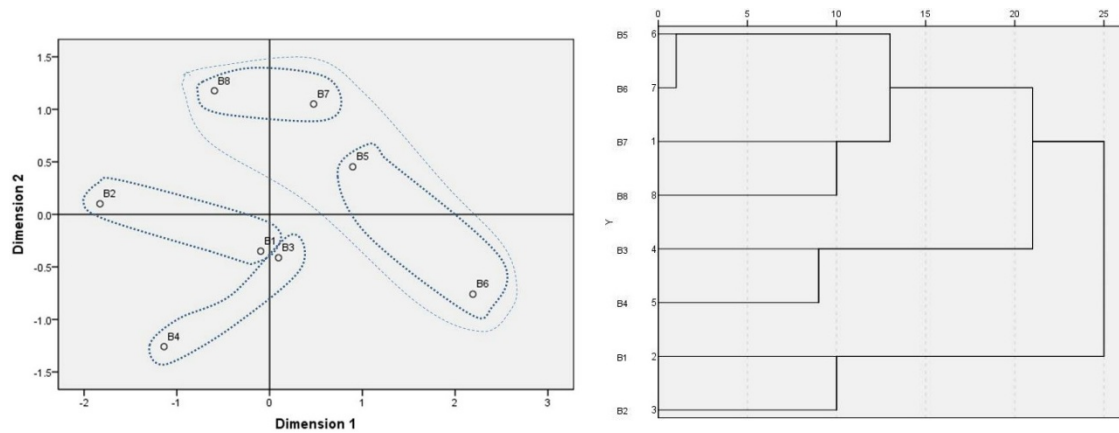


Figure 4. Social space of cluster B 2-dimensional plot and dendrogram

In both plots, two large loosely associated clusters encompass the region, but there are clear “neighborhoods,” or tighter associations, within each cluster. Again we see that the positioning of the regions reflects the relative volume of capital, while associations within the social space reflect the composition of capital.

4.0 Conclusions: Cultural warrant as social space

We have introduced a visualization technique that allows us to view the interactivity of actors within a social space, which we have analyzed using benchmarks provided by Bourdieu. As Bourdieu also suggests (1991, 237), the visible differences within the social space reflect symbolic representations of life-styles. Put another way, we can see that the clusters represent the functioning of cultural warrant, which here is the end result of the bandwagon effect. Taggers jump on the bandwagon and thereby create a common, but evolving, view of their social space. Rafferty (2011, 296) reminds us that such cultural warrant is dynamic, such that: “at any particular moment there would be only a range or spectrum of interpretative meanings possible in a specific culture.”

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