Interstitial Organizations as Conversational Bridges

by Valeska P. Korff, Achim Oberg and Walter W. Powell

EDITOR'S SUMMARY

A novel approach to evaluating the impact of nonprofit organizations is proposed, combining social network and linguistic analysis. The authors examined data from nonprofit organizations' websites and site hyperlinks to other organizations. They identified 369 sites of organizations that measure social impact and captured inbound and outbound weblinks to construct a relational structure. Keywords from the sites were categorized as reflecting scientific, civil society or managerial domains and located the entity in a triangular semantic space. While most organizations fell into one of the three communities, some were in an interstitial space spanning these domains. The interstitial organizations used a mix of terminology, were densely interconnected and connected extensively to organizations across domains, but there were few direct connections among the three domains. The resulting map integrates cultural and relational dimensions and reveals hidden patterns and clusters. The approach can be used with other social systems combining rich text with relational data.

KEYWORDS

nonprofit sector
domain analysis
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link analysis
data maps
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Valeska P. Korff is a junior professor in the Faculty for Economics and Social Sciences, University of Potsdam, Potsdam, Germany, and can be reached at vkorff<at>uni-potsdam.de.

Achim Oberg is a research fellow at the Institute for Small and Medium Sized Enterprises, University of Mannheim, Germany. All visuals in this paper are courtesy of Achim. He can be reached at oberg<at>ifm.uni-mannheim.de.

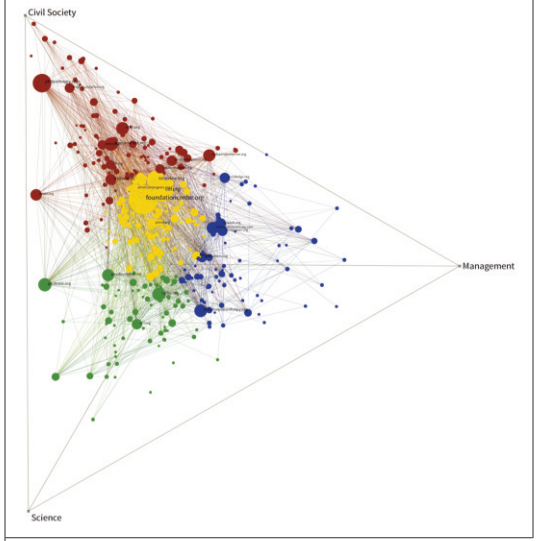
Walter W. Powell is faculty co-director of the Stanford Center on Philanthropy and Civil Society and professor of education, sociology, engineering and business at Stanford University. He can be reached at woodyp<at>stanford.edu.

Rationalization is a major social trend, entailing the spread of scientific practices of evaluation into many domains of modern life. Writing a century ago, German sociologist Max Weber referred to this process as "the disenchantment of the world." In a famous lecture at the University of Munich in 1918, he noted that this means that in principle one could, if one wished, master all things by calculation. Our map is an effort to capture how evaluation and measurement are influencing the contemporary social sector. We analyze how scientific and managerial discourses are combining with civic ideals in the context of efforts to assess the impact of nonprofit organizations. The debate over evaluation has brought together a plethora of organizations – nonprofits, foundations, consultancies, national and transnational government bodies, select corporations, academic centers, even blogs and social movements – in an effort to render nonprofit performance measurable. We visualize these conversations through an analysis of shared weblinks and the language reflected on webpages.

Visualizing Relations *and* Language

Two differing approaches have typically guided research on the structure and content of organizational communities. Network analysis emphasizes the role of social ties; in contrast, discourse analysis highlights the meanings of cultural codes. In our study, the ties that connect organizations and the language that unites or distinguishes them are combined. Our map, depicted in Figure 1, fuses these approaches into a visualization of relational *and* discursive dimensions. This simultaneous representation reveals how linguistic patterns and relational ties contribute to the formation of a new narrative of performance assessment. The map provides a basis for theorization of how a community develops a new language, in our case a metrics of evaluation. Further, the map permits comparison with other cases and enables examination of the role of

FIGURE 1. Relational and discursive dimensions of nonprofit performance evaluation



particular organizations in the debate on nonprofit performance evaluation. We regard our map as a *social x-ray* that captures, in a systematic and comparable manner, the configuration of a social system.

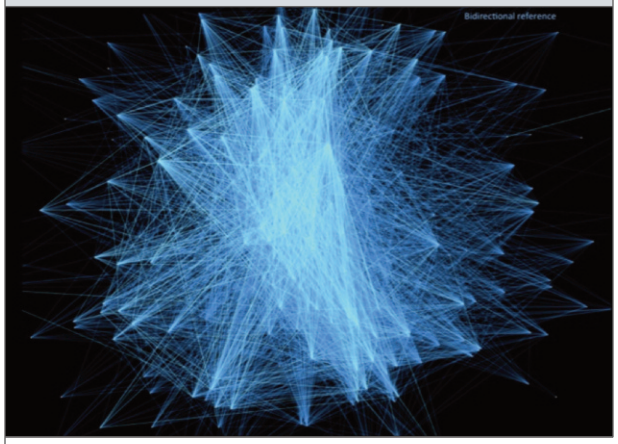
The map derives from a research project analyzing the relational structures and discourse between organizations involved in nonprofit performance evaluation (Powell, et al. [1]; also see http://pacscenter.stanford.edu/overview/research/powell). The data were obtained from organizations' websites, which reflect how organizations present themselves to a broad range of publics. Websites are increasingly a primary point of access and communication for many organizations. In addition, hyperlinks to other entities form a representational relation that sends a message to the public about the association between two parties. In this respect, hyperlinks are similar to bibliometric networks and friendship networks on social media. In focusing on websites, or more specifically URLs, we analyze organizations' positions in an evolving discourse and a web-link network.

Drawing on the Wealth of Online Data

Web-crawler and web-scraper technologies, developed by Oberg and Schoellhorn at the University of Mannheim, enable us to select websites for inclusion in the analysis and then to automatically compile their informational content. The webcrawler tracks all hyperlinks to other websites, identifying those frequently referenced as possible sample members. Starting with a list of 36 organizations suggested by experts as critically involved in the discourse on nonprofit performance evaluation, we used an iterative snowball sampling approach. Two iterations produced a total of 1,394 websites, from which we pruned generic websites such as the *New York Times*. This process produced a sample of 369 websites, representing entities actively involved as creators, carriers and consumers of nonprofit performance evaluation practices, recognized and referenced by others within this domain. By recording all weblinks through which organizations reference to and are referenced by others, we are able to draw the relational structure and produce the network graph in Figure 2.

The web scraper collects the complete text – which may include tens of thousands of pages – of each website in the sample. This textual data is stored in a special search index that we analyze for linguistic orientation. Keywords are socially prominent terms that indicate a user's cultural orientation. We identified keywords related to nonprofit performance evaluation by consulting five sources that provide glossaries for the sector: 3ie Impact, Roberts Enterprise Development Fund, Charities Evaluation Service, Innovation Network and TRASI – Tools and Resources for Assessing Social Impact. These concept guides were culled and matched with an analysis of our sample websites and checked with practitioners to generate a list of keywords used to discuss evaluation efforts. This approach produced a list of 105 keywords, which were categorized as deriving from either a scientific, civil society or managerial discourse. For each entity, we counted the number of occurrences of keywords on its website.

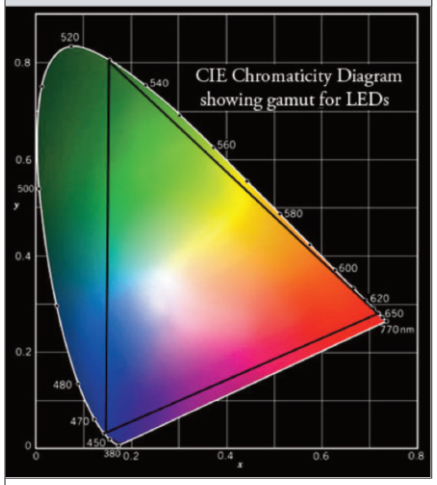
FIGURE 2. Relational structure of nonprofit performance evaluation



Depicting the Linguistic Topography

Representations of three-dimensional color spaces provided the inspiration for an illustration of how organizations combine different discourse components on their websites. The corners of a chromatic triangle are purely red, green or blue, respectively; each point in between the corners represents a specific color blend ratio. The center of the triangle, for example, is constituted by an equal amount of 33.3% of each color.

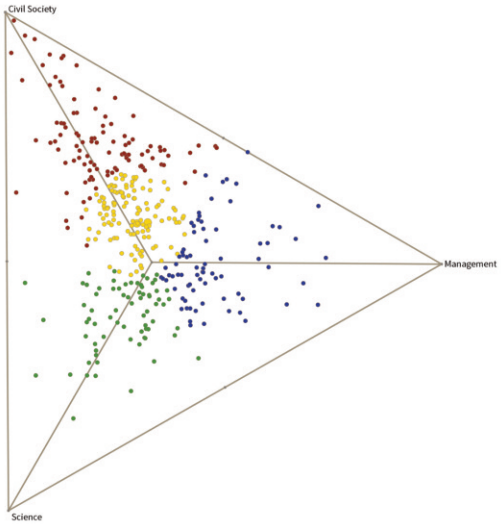
FIGURE 3. Chromatic triangle



Following this approach, based on a ratio among the three discourses, we calculated each entity's discursive position as a point in an equilateral triangle, a semantic space spanned by the three axes of civil society, science and management.

Depending on an organization's location on this triangle, we identify it as belonging to one of four communities. Membership is determined by vocabulary used on webpages. Organizations in the civil society community (red) emphasize "social change," "participation" and "justice." In the science community (green), we find extensive use of such terms as "data," "survey" and "framework," whereas the management community (blue) includes organizations that frequently mention "performance," "efficiency" and "outcomes." At the intersection of these three discourses, identified by calculating the median for each axis, there is a fourth group of organizations whose use of keywords defies categorization into the original communities. Members of this interstitial community straddle domains and recombine diverse concepts into an amalgamated discourse.

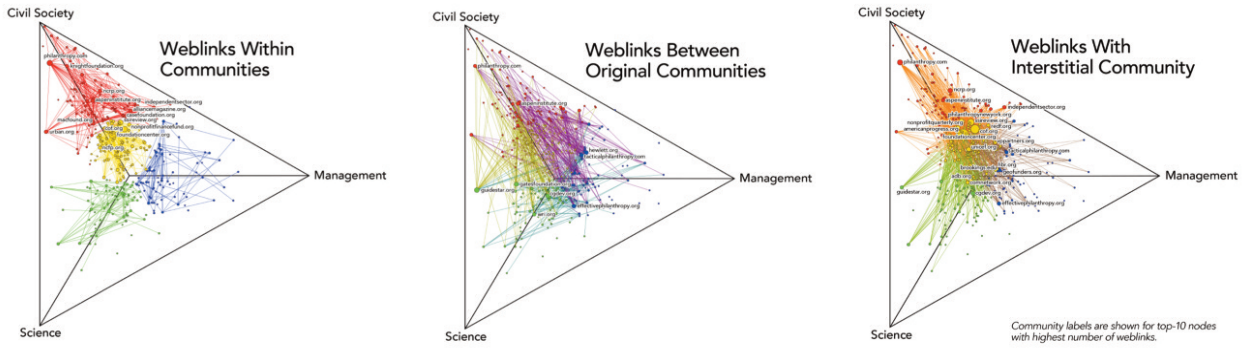
FIGURE 4. Linguistic topography of nonprofit performance evaluation



Interstitial Organizations as Conversational Bridges

The relevance of the interstice becomes evident when network ties are layered on the linguistic topography. This simultaneous representation of the relational and discursive dimensions shows that interstitial organizations not only blend discourses, but also connect organizations across domains. When comparing different types of ties, we observe that a) the interstitial community is more densely internally connected than the other communities; b) connections among the three communities are relatively sparse; and c) organizations in the interstitial community have extensive ties to all communities. Taken together, the visualization in Figure 5 underscores that interstitial organizations recombine specialist terms into an amalgamated discourse that is new and yet familiar, and they sit astride

FIGURE 5. Weblinks within and between discursive communities



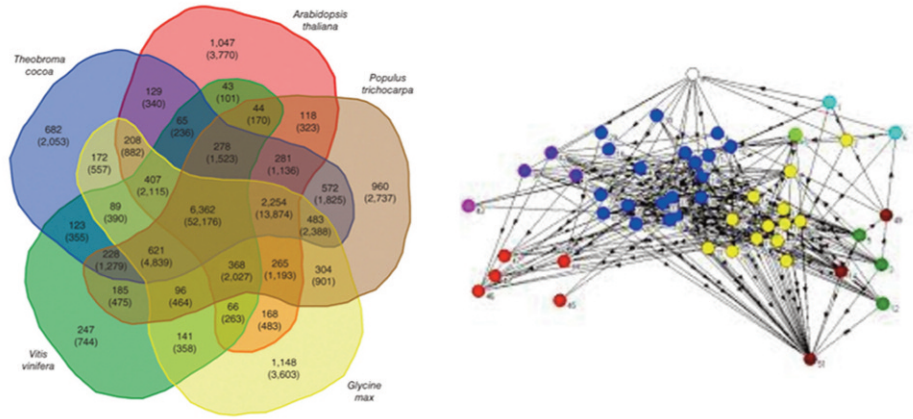
extensive channels through which this narrative is communicated. Organizations in the interstitial community are in both relational and cultural respects at the center of the debate on social impact, becoming conversational bridges among the domains of science, management and civil society.

Map-Reading and Map-Making

The map holds considerable interest for practitioners of nonprofit performance evaluation. The labels identify sample organizations, which gives those familiar with the sector an immediate impression of where they stand relative to their fellow participants. The integration of network and discourse dimensions in the visualization reveals complex network structures that capture an ongoing social transformation. As a contribution to network science, we depict how cultural cues condition how relations are forged, the invitations that are accepted and the relations that endure. More generally, our approach can be applied to study various transformations, both small and large, within organizational fields or other social systems. Data may come in various formats – film or restaurant reviews, initial public offerings, press releases – virtually any source of rich text that could be supplemented with relational data. As an analytical instrument, our visualization is not exclusive to the empirical case of nonprofit performance evaluation but invites broad scholarly application.

A central question for creating a linguistic topography on which ties can be layered is the number of cultural dimensions or discourses to integrate. In our map, we positioned organizations according to their relative use of keywords by locating them on a triangular plane which reflected both the relative content of their websites – how much associational, scientific and managerial language respectively – as well as the resulting cultural distances to organizations exhibiting a different composition. Visualization is, however, not limited to three dimensions. Multidimensional Venn diagrams and multidimensional scaling, respectively, can accommodate a larger number of possible dimensions. For example, Argout [2] uses a Venn diagram to depict the distribution of shared gene families among five plant species, whereas Luczkovich and Johnson [3] apply a multidimensional scaling plot to visualize the relations among 10 groups in a food web

FIGURE 6. Examples of multidimensional visualizations: Argout's Venn diagram [2] and Luczkovich and Johnsons' multi-dimensional scaling plot [3]



Multidimensional Venn diagramm (Argout et al., 2011)

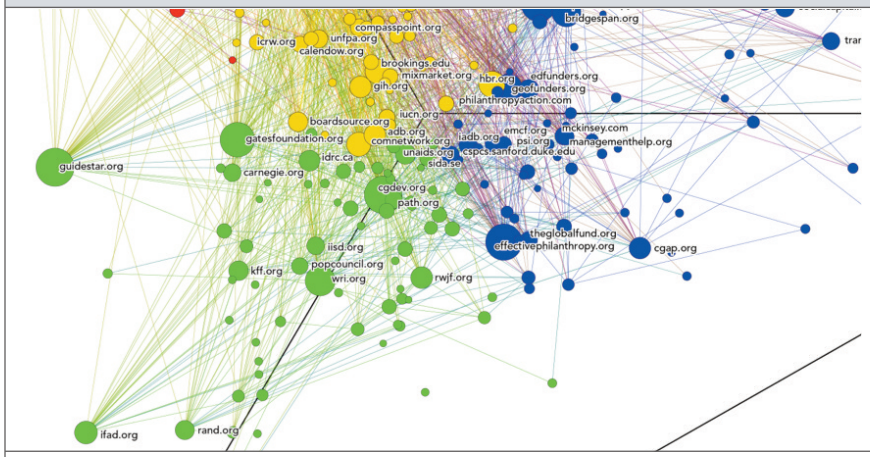
Multidimensional scaling plot (Luczkovich and Johnson, 2005)

network. Such expansion does, however, entail a tradeoff between the two approaches. Whereas Venn diagrams depict the blended content, they do not precisely reflect distances between nodes if the distances are in a space with more than two dimensions. In contrast, multidimensional scaling preserves distances, but reflects less information about composition.

Where the Action Is

The integration of cultural and relational dimensions into one visualization reveals many previously elusive patterns and phenomena. By layering weblinks onto a linguistic topography, we are able to identify cultural areas in which new ties form and clusters emerge. In the case of nonprofit performance evaluation, we find the interstice to be a hotbed in which organizations of diverse backgrounds intermingle and recombine traditional concepts into novel approaches. Such spaces, however, do not necessarily occur only in interstitial zones. It is entirely possible that dense areas of interaction could emerge within an original community or at the borderlands between two domains rather than in an interstice among all

FIGURE 7. Close-up of the borderland between science and management



three. Their absence, in turn, can also be of relevance. Figure 7 highlights that there are few connections – either in language or weblinks – between the managerial and scientific communities, suggesting there is not a general colonization of civil society by a collective scientific and managerial discourse. Instead of a common language of rationalization, the science and management communities speak independently and influences from all three domains come together in the interstitial zone.

The social x-ray as a snapshot allows us to identify spaces where culture and connectivity combine, drawing our attention to potential areas that could be centers of transformation, nuclei for the emergence of new fields or areas of imminent segregation. To know their ultimate fate – whether they form a new structure, change the existing one or dissolve again – the analysis can be extended over time. Once the sample and keyword list has been established, website content (or other textual data) and relations can be recorded at different time points. In doing so, the currently static map transforms into a dynamic visualization – an animated feature exhibiting shifts in structure and meaning. ■

Link to related work: http://pacscenter.stanford.edu/overview/research/powell
Online Version: www.know-your-field.net/metrics

Resources Mentioned in the Article

[1] Powell, W.W., A. Oberg, V.P. Korff, C. Oelberger, & K. Kloos. (2014). Neither contestation nor convergence. The proto-institutionalization of nonprofit performance metrics. Paper presented at the American Sociological Association Annual Meeting, San Francisco, CA.

[2] Argout, X., J. Salse, J.-M. Aury, M. J. Guiltinan, G. Droc, J. Gouzy, . . . & C. Lanau. (2011). The genome of Theobroma cacao. *Nature Genetics, 43*, 101–108.

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