

The Roots of Social Informatics Through Tri-Citation Analysis of Rob Kling's *Oeuvre*

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ABSTRACT

We build on an earlier analysis of the academic career of Rob Kling, the founder of the field of social informatics (SI) (Cronin & Shaw, 2007), through a two-time-period author tri-citation analysis. The two time periods—1972-1995 and 1996-2008—represent distinct parts of Rob Kling's career. Our analysis of Kling's career and influence through the lens of tri-citation analysis allows for the understanding of SI's roots and evolution. In particular we show how early SI concepts evolved and grew in influence as they moved beyond the fields of management information systems (MIS) and organizational research where the concepts were initially established.

Keywords

Rob Kling, Social Informatics, Tri-citation, Cluster Analysis, Social Computing

INTRODUCTION

Rob Kling completed his Ph.D. in 1970 and passed away in 2003. Kling's early research focused on artificial intelligence, but after receiving his doctorate in 1970 his research interests shifted from artificial intelligence to the social impacts of computing. This shift in research interest coincided with a move from the University of Wisconsin to the faculty of UC-Irvine in 1972. During Kling's time at UC-Irvine from 1972-1996 he and his colleagues focused on how institutional and societal factors contributed to the utilization and adoption of technology. Much of this research was focused on how local government agencies in the United States utilized technology and its impacts on the institutional and organizational process. Kling used these studies to establish models to further understand how individuals and technologies shape each other (Kling & Scacchi, 1979; Kling & Scacchi, 1982; Kling, 1979). This research contributed to the recognition of the field now

labeled as social informatics (Kling, Rosenbaum, & Sawyer, 2005).

In 1996, Kling moved from UC-Irvine to Indiana University. With this move, Kling's research interests began to shift to the fields of electronic and scholarly communication, just as social informatics was becoming recognized as a field. In addition to these newfound research interests, Kling was also attempting to establish social informatics as a framework for analysis, especially with the introduction of the Internet to the mass public. This shift in research interests and wider influence of Kling's work is evident in the following tri-citation analysis.

We present the findings of tri-citation analysis from two time periods of Rob Kling's career. This division of time periods helps to identify the origins of Kling's early research agenda and demonstrates how this research agenda evolved over time. Examination of the tri-citation data demonstrates the roots of the discipline of social informatics and its expanding influence over time. The analysis of the later tri-citation data also illustrates the emergence of a new research agenda in Kling's later career.

METHODS AND DATASET

Author tri-citation data are similar to co-citation data with the additional requirement that the specified author of interest also be included in the data collection—thus providing important context for the co-citation counts. We followed the author tri-citation data retrieval protocol in McCain (2009), limiting each data set to the top 40 authors co-cited with Kling in SSCI. The data were mapped utilizing multi-dimensional scaling (MDS) and clustered following McCain (1990).

FINDINGS

Only 9 authors are shared in the lists from the two time periods. The common authors represent a core set of MIS/Organizational Behavior research areas and highly influential authors in their respective areas. These common authors illustrate the roots and home of much of Kling's research and also the importance of authors from other fields in the context of Kling's research such as Everett Rogers, Langdon Winner and Ron Rice. The shared authors are represented in table 1.

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| Author | Early | Late |
|------------|------------------------|-----------------------------|
| IVES, B | MIS | MIS/Org. Research |
| MARKUS, ML | MIS | MIS/Org. Research |
| MUMFORD, E | MIS | MIS/Org. Research |
| ROBEY, D | MIS | MIS/Org. Research |
| ZUBOFF, S | Org./Power Relation | MIS/Org. Research |
| GIDDENS, A | Org./Power Relation | MIS/Org. Research |
| ROGERS, EM | Communication Theory | Communication Theory |
| RICE, RE | Communication Theory | CMC/Social Network Analysts |
| WINNER, L | Social Constructionist | Social Constructionists/ANT |

Table 1: Authors in both time period data

The cluster-enhanced maps illustrate distinct disciplines of influence. Four clusters in the 1972 - 1995 map (figure 2) focus on MIS and organizational theory and behavior. A fifth cluster includes communication researchers Everett Rogers, Starr Roxanne Hiltz and Ronald E. Rice; social constructionist Langdon Winner is an isolate. The later map of Rob Kling's career from 1996-2008 (figure 3) shows a shift in Kling's research and influence. Here the MIS and organizational theory and behavior researchers are contained within their own large cluster. There are also six other clusters that are further differentiated from MIS and Organizational research. Langdon Winner has moved from an isolate to a cluster of social constructionists who were included in the top 40 authors co-cited with Kling in this time period. This likely represents an increased interest in Winner's seminal work on the social construction of artifacts (Winner, 1986) in the context of Kling's work and the rise of Social Informatics. By contrast, Rogers is now an isolate, not clustering with Hiltz and Rice—the context has changed.

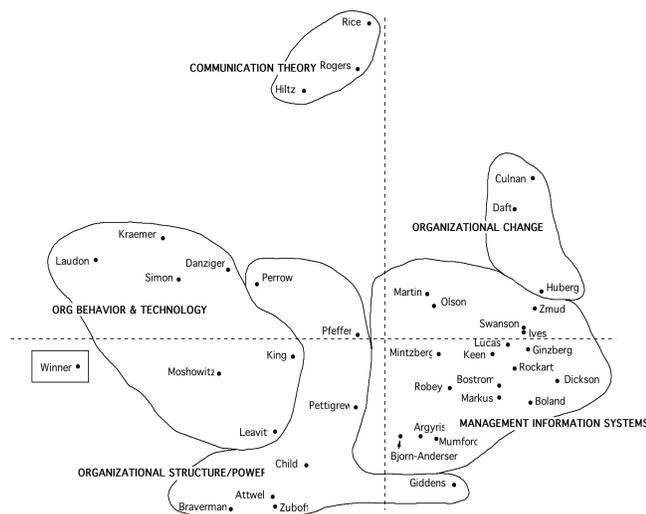


Figure 2: MDS Plot of Early Tri-citation Data

The three other clusters in the map are the Computer Mediated Communication (CMC)/Social Network Analysts, Social Theory/Ethnography and Scholarly Communication /Information Science researchers. The introduction of these differentiated clusters is the result of expanded influence of Kling's early research. For example, the set of CMC/Social Network Analysts represent a focus on the interactions of individuals, groups and technology—an integral part of Kling's research. The cluster of Social Theory/Ethnography researchers are present because of the similar methods and research settings (workplaces) they utilized in some of their key research products that also produced the similar level of detailed and rich findings as Kling did in his research (Kling, 1991; Kling, 1993; Kling & Iacono, 1988).

The final late-period cluster in the map brings together Blaise Cronin, Christine Borgman, Elizabeth Davenport and Peter Ingwersen. These four individual's main research areas include both scholarly communication and information science. Kling began to focus on scholarly communication in his later work at Indiana (another link to Cronin and Davenport) and was fundamental in establishing the field of social informatics through the creation of the Center for Social Informatics at Indiana University. This research shift and identification of social informatics as a field occurred in the 1996/1997 timeframe just as social informatics was being labeled and adopted by researchers (Kling, 2000).

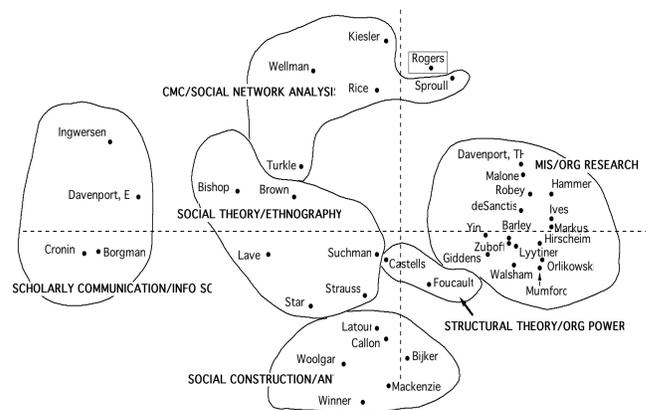


Figure 3: MDS Plot of Late Tri-citation Data

CONCLUSION

Tri-citation data of Rob Kling allows for the analysis of the context and influence of Rob Kling's research. Dividing Rob Kling's career into two distinct time periods allows for the identification of shifts in his research interests and also his increasing influence in domains outside of organizational theory and management information systems. The existence of a large set of MIS researchers in Rob Kling's early tri-citation data allows for an understanding of where Kling's work originated and the early roots of social informatics. As his career matured and began to expand beyond the organizational research space, more researchers became aware of his work and Kling's

research and methodological approaches were adopted by a wider set of researchers.

The establishment of social informatics as a field and the shift of Kling's research interests after his move to Indiana are clearly illustrated in the later tri-citation data. The inclusion of the new cluster of social informatics and scholarly communications researchers includes Blaise Cronin who is responsible for recruiting Kling to Indiana. It is likely that more recent analysis of Kling tri-citation data may continue to expand upon the cluster of social informatics researchers as the field gains more acceptance and more of his peers and students propagate the conceptual underpinnings of social informatics.

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