2019

The Social Informatics of Ignorance

Devon Greyson
University of Massachusetts Amherst

Recommended Citation
Greyson, Devon, "The Social Informatics of Ignorance" (2019). *Journal of the Association for Information Science and Technology*. 72.
https://doi.org/10.1002/asi.24143

Title: The Social Informatics of Ignorance

Author: Devon Greyson (dgreyson@umass.edu)

Abstract

Social informatics researchers use a variety of techniques to explore the intersections between technology and society. Current interest has turned to making more explicit our commonly tacit knowledge processes that involve people and technology. Knowledge creation, sharing, and management processes are commonly hidden, and this is even more the case regarding ignorance processes such as the denial and obfuscation of knowledge. Understanding the construction, generation, and perpetuation of ignorance can: 1) provide insights into social phenomena that might otherwise seem inexplicable (e.g., persistence of 'urban myths'), and 2) enable development of interventions to either facilitate (as with privacy-sensitive material) or combat (as with malicious disinformation) ignorance. Although several pressing information issues relate to ignorance, *agnotology* (the study of ignorance) has only recently entered into the information science literature. An agnotologic approach expands the repertoire of methods and approaches in social informatics, better enabling the field to grapple with pressing contemporary issues of mis/dis/lack of information. Using Robert Proctor's typology of constructions of ignorance, this article describes ways each type may be germane to and within social informatics, highlighting social informatics topics that would benefit from agnotologic exploration, and suggesting theoretical and methodological approaches useful to a social informatics of ignorance.

The Social Informatics of Ignorance

Social informatics researchers use a variety of techniques to explore the intersections between technology and society, focusing on "the social consequences of the design, implementation, and use" of information and communication technologies (Sawyer & Rosenbaum, 2000, p. 89). Described by Kling, one of the founders of the sub-discipline, as the critical study of the "social aspects of computerization" (Kling, 1999), social informatics has employed a variety of disciplinary and interdisciplinary approaches to theorizing and analyzing the interconnections between technology and social change. Many consider contemporary social informatics to have moved past initial development and consolidation of the field into a "period of diversification" (Sanfilippo & Fichman, 2014) in which new approaches, perspectives, and theoretical lenses broaden and enrich the work under the social informatics umbrella.

The current interest in "questions about how knowledge–broadly conceived–can be better understood" by using context-sensitive social informatics approaches (Shankar & Meyer, 2017) seeks to make more explicit the processes and values behind the "inherently tacit/implicit" (Kling, 1999) nature of knowledge and expertise in our understanding of information, technology, and society. Knowledge processes are commonly hidden, and this is particularly true regarding the denial and obfuscation of knowledge—processes of *ignorance* construction, generation, and perpetuation. The objective of this paper is to suggest an approach to understanding and interrogating ignorance practices by looking at the connections between people and technologies, in real-life contexts.

Ignorance, agnotology and social informatics

Science historian Robert Proctor credits linguist Iain Boal with coining of the term *agnotology* (alternative spelling: agnatology) for the study of ignorance, and suggests some

major subsets of agnotology, around which this paper will be structured (Proctor, 2008). Other notable scholars in the study of ignorance have taken a variety of perspectives, including the psychological approach of David Dunning (best known for the "Dunning-Kruger effect"—a cognitive bias in which individuals with low skill mistakenly think they have superior competence (Kruger & Dunning, 1999)), and the sociological work of Michael Smithson, who takes a social constructionist approach to the influence of ignorance in domestic, professional, and political arenas (see, for example, Smithson, 1985).

Early suggestions that information science should consider exploring agnotology were made by Ojala (2014) and Van der Veer Martens (2015), both of whom focus on the philosophy of information in the era of the internet. Frazier (2015) appears to have brought Proctor's typology of conceptions of ignorance into the information science literature, suggesting intersections and distinctions between agnotology and elements of Chatman's theory of information poverty (Chatman, 1996). Greyson and colleagues (Greyson, O'Brien, & Shoveller, 2017) carried this line of thinking forward in an empirical analysis of the constructions of knowledge and ignorance in social worlds, documenting active and power-laden negotiations around what is defined as knowledge and expertise. In this analysis, Chatman's theories were again invoked, as the authors identified cases in which marginalized knowledge (e.g., regarding traditional parenting practices) was classified as ignorance, as well as examples of "strategic ignorance practices such as secrecy, apathy and disinformation" (Greyson et al., 2017).

Contemporary topics ranging from climate change to vaccine confidence—pressing issues of scientific, political, and humanistic importance—could benefit from increased attention by social informaticists. This article, intended to spark thinking and discussion within social

informatics, will present ways that Proctor's outlined dimensions of agnotology are germane to, and ripe for use within, social informatics.

Ignorance as originary state

This understanding of ignorance as naïvete can be framed variously as innocence or as deficiency, and implies a lack of (or, if taking a romantic view, freedom from) knowledge or education. Like untouched land, this kind of ignorance, seen through a western perspective, is also a resource: knowledge gaps serving as fuel to spur scientific inquiry or ground to intellectually colonize. Proctor describes this first understanding of ignorance as that which views knowledge as growing unidirectionally "out of ignorance, as a flower from honest soil".

Information technologies, while commonly viewed as a tool for minimizing this type of ignorance, may also strengthen the unequal distribution of access to information (and therefore ignorance of certain knowledges). They may also cause the proliferation of ignorance through perpetuation of misinformation (inadvertently shared false information; for disinformation, or deliberately-shared false, incomplete, or inaccurate information, see below under the heading "Ignorance as active construct**"**). While methods of using information technologies to perpetuate ignorance have recently come to be popularized as "fake news" techniques, such methods are hardly a new phenomenon. Information scientists have studied misinformation and disinformation in the context of the internet from the emergence of the world wide web (Hernon, 1995) through more contemporary online communities and virtual realities (Karlova & Fisher, 2013). Additionally, scientists and science communicators alike have expressed concern over the spread and uptake of false information regarding threats such as HIV (Dickson, 2001).

Ignorance as passive construct

Another framing of ignorance is that of a passively "lost realm" of actual or potential knowledge. Science and learning are path-dependent; the decision to pursue one path frequently necessitates overlooking another area of study. As knowledge is cumulative, some paths grow, accumulating sophisticated bodies of knowledge, while others (other theories, topics of study, etc.) remain relatively unexplored. Many forces shape these paths, determining which realms of knowledge are lost by virtue of selection of other priorities, including: research funding opportunities, market trends, current events, and interests of the learner individually and societies more broadly. Sometimes a clear decision is made not to pursue certain paths, while other areas of inquiry may wither due to unintentional neglect. All of these decisions are affected by societal power structures, including but not limited to racial-ethnic discrimination and other social class structures (Schiebinger, 2004).

In our current digital era in which, somewhat paradoxically, duplication and preservation are quick yet ephemera proliferates, passive choices not to pursue and preserve information are made constantly. Most users have no idea of the longevity, searchability, or accessibility of their social media posts, for example. Forgotten email and social accounts languish full of information, presumably (but not necessarily) to be deleted by the platform someday. With the rise of ebooks, even the way humans read text is shifting, and we may be learning in new and different ways, risking loss of old ways of reading and some of the resulting knowledges.

Ignorance as active construct

Sometimes, and perhaps of most pressing current interest to social informatics as a field, ignorance is actively constructed through manufacture of doubt, uncertainty, or obfuscation of knowledge. This is the ignorance deliberately created by secret-keeping, acknowledging that while information is not always power, control over information typically is. It is also the

ignorance cultivated—carefully or haphazardly—by deliberate promulgation of disinformation and propaganda. As with other forms of ignorance, this type is not intended to carry a wholly positive or negative connotation, and indeed may be applied to various ends. Information may be withheld can be kept for noble purposes, for example in the name of love, national security, or other social or moral ideals. However such practices may also be conducted for nefarious purposes of manipulation and marginalization.

In academia, industry, the military, and society writ large, measures to actively maintain ignorance include ejournal paywalls, encryption and other digital security measures, and digital divides based on social inequities. Business secrets are carefully guarded by firms to protect their competitive advantages in a capitalist economy (Poundstone, 1985). In the scholarly realm, "blind" peer review is a generally-accepted method of actively constructing a measure of ignorance with the intention of improving science; new forms of open review disrupt this, but carry other challenges due to removing the traditional veil of ignorance. Proctor's own scholarship on the tobacco industry's *agnogenesis,* or active creation of ignorance, explores in depth a classic industrial case of active production of ignorance. Cigarette firms employed a multitude of rhetorical devices, legal tactics, and distractionary techniques in order to cast doubt on the facts that tobacco is hazardous to human health. When efforts to promote tobacco as beneficial failed, simply promulgating doubt was much more profitable than admitting wrong. Other explorations of the benefits of carefully cultivated ignorance have focused conversely on the social-psychological benefits of suppressing threatening information, such as that regarding potential nuclear attacks (Reser & Smithson, 1988).

Ignorance as virtue

In certain cases, ignorance may serve as a form of resistance or moral caution, when maintaining ignorance constrains immoral behavior. There may well be types or bodies of knowledge that, for ethical reasons, an individual or society are better off without. When it comes to information, more is not *always* better, in part because too much information can fail to build knowledge, but also because some types of knowledge may not improve life or society. Would the world, perhaps, be morally and materially better off without knowledge of how to perform torture? While information is often framed as a way to reduce uncertainty that is "empowering" for consumers, this has been shown not always to be the case (see, for example, (Henwood, Wyatt, Hart, & Smith, 2003; Kellermann & Reynolds, 1990). In the medical sphere in particular, the value of providing or withholding information holds many nuances. Should an 85-year old continue to be screened for cancer that is unlikely to kill them? Studies have shown that health information, if conflicting, overwhelming, or provided in a way that does not complement an individual's coping style, may in some cases even be harmful (Henwood et al., 2003; Miller, 1995)

Universities and scholarly journals frequently bar research that is seen as unethical or to hold too great a degree of conflict of interest (Proctor, 2008, p.21). While this is a form of censorship, serving to both passively and actively construct ignorance, it is arguably morally correct. Those in charge of information systems, including but not limited to social media platforms, grapple with questions of similar censorship: where do such systems draw the line to censor information considered to be undesirable (e.g., racist slurs, advertising from oil companies), what values underlie those decisions, and how do they affect the knowledge of the user population and society at large?

Approaches and implications for social informatics

Applying and exploring agnotology in social informatics can provide fresh insights and useful tools to shape knowledge in society. Doing so will require use of a broad range of methodological approaches. Some intellectual tasks are quantitative in nature, such as developing "agnometric indicators" (Proctor, 2008, p.16) to quantify prevalence and depth of not-knowing among individuals and populations. Such indicators might take the form of standard or evolving measures of not-knowing, and likely need to be tailored to specific knowledge domain. This could help interrogate the distribution of different forms and subjects of ignorance in populations, and shine light on inherent ethics and equity issues that both shape and are caused by this distribution. Other lines of inquiry will require qualitative approaches, such as exploration and understanding of "common ignorance" (things unknown by nearly everyone within a community) such that we understand it as much as "common knowledge." This can further deeply context-sensitive understanding of information and technology needs and practices, in order to improve education and combat mis- and disinformation. Some questions will be best understood by combining multiple methods, for example when tracking origins and perpetuation of mis- and disinformation.

Logical lines of social informatics inquiry into the construction, perpetuation, and uses of ignorance are many, beginning with the identification of ignorances (often easier said than done, due to our own incognizance, or lack of awareness of our own ignorance, (St. Jean, 2012)), and extending into ignorance measurement and in-depth understanding of the way various ignorances are understood and function to influence people and society. Both retrospective and prospective tracing of the development, construction, and perpetuation of ignorances can be facilitated with social informatics approaches, and social informaticists can inform and even conduct

experimental and quasi-experimental testing of interventions to either maintain ignorance (e.g., digital security systems) or reduce it (e.g., correcting misinformation).

Current investigations into social informatics provide excellent springboards for many agnotologic inquiries in the field. When considering, for example, crowdsourced mapping knowledge bases such as OpenStreetMap and Wikimapia (Budhathoki & Haythornthwaite, 2013): What places are omitted, and what discourages their inclusion? Whose, and which types of, information tend *not* to be present in crowdsourced knowledge bases, and what are the impacts of these omissions? Inspired by study of ubiquitous connectedness (Chayko, 2014), one might ask: What information is overlooked due to continuous connectedness with other information sources, and what are the knowledge impacts of these information pathways? Who opts out of connectivity, why, and what are the impacts of this on their knowledge bases as compared with those of the highly-connected? Existing social informatics research into the technology-facilitated sharing and use of information makes important contributions; however the depth and utility of these contributions would be amplified with a corresponding understanding of the technology-facilitated construction, spread, and loss of ignorance.

Early social informaticist Ursal asserted that, "Social informatics is supposed to integrate social and natural-technical knowledge" (1989, p. 15). Setting aside the arguable distinction between such knowledges (as natural-technical, or scientific, knowledge is socially constructed), is there not *also* a role for social informatics to illuminate social and natural-technical *ignorances*? Given the current interest in deeper, more context-sensitive understandings of the social informatics of knowledge, integration of agnotology into the field at this time seems not merely interesting, but imperative in order to further a robust intellectual line of inquiry into ignorance-related interactions among information, technology, and society.

Conclusion

While social informatics has and continues to make important contributions to our understanding of knowledge processes, it is equally important to develop theory and methods to study ignorance processes. Nearly every technical system for creation, sharing, organization, and use of information also involves a corresponding degree of information selection, suppression, or obfuscation. What purposes these agnotologic processes and practices serve, and the ethical acceptability of them, are important questions to answer. Further, in cases where ignorance works against individual (e.g., a medical patient) or common (e.g, population equity) interest, approaches to combat this ignorance must be evidence-based. Applying agnotologic theory and developing corresponding methods in information science—that is to say, developing a social informatics of ignorance—is crucial to addressing such issues.

References

Budhathoki, N. R., & Haythornthwaite, C. (2013). Motivation for open collaboration: Crowd and community models and the case of OpenStreetMap. *American Behavioral Scientist, 57*(5), 548–575. https://doi.org/10.1177/0002764212469364

Chatman, E. A. (1996). The impoverished life-world of outsiders. *Journal of the American Society for Information Science, 47*(3), 193–206. https://doi.org/10.1002/(SICI)1097-4571(199603)47:3<193::AID-ASI3>3.0.CO;2-T

Chayko, M. (2014). Techno-social life: The internet, digital technology, and social connectedness. *Sociology Compass, 8*(7), 976–991. https://doi.org/10.1111/soc4.12190

Dickson, D. (2001). Weaving a social web. *Nature, 414*(6864), 587. https://doi.org/10.1038/414587a

Frazier, T. Z. (2015). Agnotology and information. *Proceedings of the Association for Information Science and Technology, 52*(1), 1–3. https://doi.org/10.1002/pra2.2015.1450520100123

Greyson, D., O'Brien, H., & Shoveller, J. (2017). Constructing knowledge and ignorance in the social information worlds of young mothers. *Proceedings of the Association for Information Science and Technology, 54*(1), 139–149. https://doi.org/10.1002/pra2.2017.14505401016

Henwood, F., Wyatt, S., Hart, A., & Smith, J. (2003). 'Ignorance is bliss sometimes': constraints on the emergence of the 'informed patient' in the changing landscapes of health information. *Sociology of Health & Illness, 25*(6), 589–607. https://doi.org/10.1111/1467-9566.00360

Hernon, P. (1995). Disinformation and misinformation through the internet: Findings of an exploratory study. *Government Information Quarterly, 12*(2), 133–139. https://doi.org/10.1016/0740-624X(95)90052-7

Kellermann, K., & Reynolds, R. (1990). When Ignorance Is Bliss The Role of Motivation to Reduce Uncertainty in Uncertainty Reduction Theory. *Human Communication Research, 17*(1), 5–75. https://doi.org/10.1111/j.1468-2958.1990.tb00226.x

Kling, R. (1999). What is social informatics and why does it matter? *D-Lib Magazine*, *5*(1). https://doi.org/10.1045/january99-kling

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77*(6), 1121–1134.

Miller, S. M. (1995). Monitoring versus blunting styles of coping with cancer influence the information patients want and need about their disease. Implications for cancer screening and management. *Cancer*, *76*(2), 167–177.

Ojala, M. (2014). Research renaissance or retreat? *Online Searcher; Medford, 38*(3), 4.

Poundstone, W. (1985). *Big secrets: The uncensored truth about all sorts of stuff you are never supposed to know*. New York, NY: William Morrow.

Reser, J. P., & Smithson, M. J. (1988). When ignorance is adaptive: Not knowing about the nuclear threat. *Knowledge in Society*, *1*(4), 7–27. https://doi.org/10.1007/BF02737056

Sanfilippo, M. R., & Fichman, P. (2014). The evolution of social informatics research (1984-2013): Challenges and opportunities. In P. Fichman & H. Rosenbaum (Eds.), *Social informatics: Past, present and future*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Sawyer, S., & Rosenbaum, H. (2000). Social informatics in the information sciences: Current activities and emerging directions. *Informing Science: The International Journal of an Emerging Transdiscipline, 3*, 089–096. https://doi.org/10.28945/583

Schiebinger, L. (2004). Feminist history of colonial science. *Hypatia*, *19*(1), 233–254. https://doi.org/10.1111/j.1527-2001.2004.tb01276.x

Shankar, K., & Meyer, E. (2017, July 12). The 13th Annual Social Informatics (SIG-SI) Research Symposium: The Social Informatics of Knowledge. Retrieved December 9, 2017, from https://asistsigsi.wordpress.com/2017/07/12/the-13th-annual-social-informatics-sig-si-research-symposium-the-social-informatics-of-knowledge/

Smithson, M. (1985). Toward a social theory of ignorance. *Journal for the Theory of Social Behaviour*, *15*(2), 151–172. https://doi.org/10.1111/j.1468-5914.1985.tb00049.x

St. Jean, B. (2012). I just don't know what I don't know!": A longitudinal investigation of the perceived usefulness of information to people with type 2 diabetes. *Proceedings of the American Society for Information Science and Technology*, *49*(1), 1–10. https://doi.org/10.1002/meet.14504901030

Ursul, A. D. (1989). On the shaping of social informatics. *International Forum on Information and Documentation*, *14*(4), 10–18.

Van der Veer Martens, B. (2015). An illustrated introduction to the infosphere. *Library Trends*, *63*(3), 317–361. https://doi.org/10.1353/lib.2015.0006