

# Not Just for Marshmallows: Implications of the Theory of Information Worlds for Cross-Stream Information Sharing Practices

Adam Worrall

Assistant Professor, University of Alberta School of Library and Information Studies  
3-15 Rutherford South, Edmonton, AB, Canada T6G 2J4  
(780) 492-0179 [worrall@ualberta.ca](mailto:worrall@ualberta.ca)

*Ghostbusters* illustrated the importance of crossing the streams for defeating supernatural marshmallow men, but in information science we, too, would like to facilitate the crossing of boundaries with respect to information and knowledge sharing. Encouraging this is not easy, but potential approaches to and implications for information system and service design and practice should be drawn from theories of information behavior. This lightning talk briefly discusses two examples in the domains of online communities (Worrall, 2014, 2015) and scientific collaboration (Burnett et al., 2014; Stvilia et al., 2015) that draw on Burnett and Jaeger's (2008; Jaeger & Burnett, 2010) theory of information worlds and its five key concepts of social norms, social types, information value, information behavior, and boundaries.

In one study, partially informed by Burnett and Jaeger's theory, I looked at LibraryThing and Goodreads and explored how they and similar information-centric online communities could encourage stream-crossing (Worrall, 2014, 2015). Design features that encourage and facilitate linking behaviors, where users reference other messages and threads; groups; and information pages for books, authors, and series allow relevant boundary-crossing information to be shared and for emergent communities to form around common interests. Automatically linking to or displaying information from beyond the current context could also increase support for crossing streams, although not all users would value automatically-provided information. Finally, interactions between administrators, key members, and boundary spanners were found to further encourage the emergence of common social norms, information values, and information behaviors, leading to tighter-knit communities and greater information sharing. The theory of information worlds can inform the practical design of information-centric online communities and the offering of information services in these contexts to support users' stream-crossing information behaviors.

Theory also has implications for crossing the streams in offline communities. I was part of NSF-funded research on scientific collaboration (Burnett et al., 2014; Stvilia et al., 2015) that concluded successful juggling of, bridging between, and adapting to multiple communities and to the multiple stages of community, team, and data lifecycles increases the likelihood of a scientific team continuing to conduct research and building a long-term research agenda, as they converge their social norms, information values, information behaviors, and other characteristics. Interactions between different information worlds present led to synergies or conflicts in norms and values that influenced the practice of scientific collaboration for each team. Those teams willing and able to integrate new and pre-existing norms, types, values, and behaviors had the best chance of continuing to collaborate, share information, and practice scientific collaboration over time. We concluded practicing scientists should use all the venues at their disposal—scientific labs, conferences and meetings, technology, social media, etc.—to look for and engage in collaboration with other scientists who cross the boundaries between multiple information worlds. These collaborators can serve as structural bridges (Hara et al. 2003) to resources, information, and knowledge that crosses the streams and will improve the success of scientists' short-term experiments and their chances of transitioning their work into a successful long-term research agenda and practice.

**Acknowledgements:** Special thanks to all of the collaborators on the NSF-funded scientific collaboration study, particularly Gary Burnett and Paul Marty. This research was supported in part by the National Science Foundation (grant OCI-0942855), an Esther Maglathlin Doctoral Research Scholarship

from the Florida State University School of Information, and a Eugene Garfield Doctoral Dissertation Fellowship from Beta Phi Mu; it does not necessarily reflect their views.

## References

- Burnett, G., & Jaeger, P. T. (2008). Small worlds, lifeworlds, and information: The ramifications of the information behaviour of social groups in public policy and the public sphere. *Information Research*, 13(2). Retrieved from <http://informationr.net/ir/13-2/paper346.html>
- Burnett, G., Burnett, K., Kazmer, M. M., Marty, P. F., Worrall, A., Knop, B., Hinnant, C. C., Stvilia, B., & Wu, S. (2014). Don't tap on the glass, you'll anger the fish! The information worlds of distributed scientific teams. In P. Fichman & H. Rosenbaum (Eds.), *Social informatics: Past, present, and future* (pp. 118–134). Newcastle, UK: Cambridge Scholars Publishing.
- Hara, N., Solomon, P., Kim, S.-L., & Sonnenwald, D. H. (2003). An emerging view of scientific collaboration: Scientists' perspectives on collaboration and factors that impact collaboration. *Journal of the American Society for Information Science and Technology*, 54, 952–965. doi:10.1002/asi.10291
- Jaeger, P. T., & Burnett, G. (2010). *Information worlds: Behavior, technology, and social context in the age of the Internet*. New York, NY: Routledge.
- Stvilia, B., Hinnant, C., Wu, S., Worrall, A., Lee, D. J., Burnett, K., Burnett, G., Kazmer, M. M., & Marty, P. F. (2015). Research project tasks, data, and perceptions of data quality in a condensed matter physics community. *Journal of the Association for Information Science and Technology*, 66, 246–263. doi:10.1002/asi.23177
- Worrall, A. (2014). *The roles of digital libraries as boundary objects within and across social and information worlds* (Doctoral dissertation). Florida State University, Tallahassee, FL. Retrieved from ProQuest Dissertations and Theses. (3638098)
- Worrall, A. (2015). "Like a real friendship": Translation, coherence, and convergence of information values in LibraryThing and Goodreads. In G. Olson (Chair), *iConference 2015 proceedings*, Newport Beach, CA, March 24–27, 2015. Champaign, IL: iSchools. Retrieved from <http://hdl.handle.net/2142/73641>