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Effectively Communicating Science to Extension Audiences

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Effectively Communicating Science to Extension Audiences

Abstract

This article discusses the concept of "framing" within the context of relevant communication and psychological research and considers its potential applicability to Extension science communication. Examples of research-based support for the framing of scientific issues are presented, along with a literature-based discussion of the potential benefits. The article suggests that Extension practitioners should consider framing scientific information in a manner that is important and relevant to stakeholders. Doing so can lead to improved stakeholder engagement in the information exchange process and create the potential for greater utilization of scientific information.

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Introduction

Land-grant universities have always been tasked with providing and applying science-based information to individuals and challenges that extend beyond our campus and office walls (Dunifon, Duttweiler, Pillemer, Tobias, & Trochim, 2004). Fulfilling that responsibility requires that Extension practitioners be able to effectively communicate science-based knowledge. But how do we ensure that we are communicating science effectively? This article discusses the concept of "framing" within the context of relevant communication and psychological research and considers its potential applicability to Extension practitioners' need to effectively communicate science to a diversity of audiences.

Framing and Science Communication

Tversky and Kahneman (1981) examined the role that framing plays in the choices that people make. Through their work, they concluded that individuals who have a preferred outcome for a given problem might change their preference when a problem is framed differently. They suggest that choices occur in two phases. First, individuals frame the acts, outcomes, and contingencies related to the decision problem based upon the information presented and their own personal characteristics.

Next, individuals evaluate their choices using the frame that is developed. Under this model of decision-making, individuals' evaluation of their choice options is dependent upon the frame they use to perform the evaluation.

In a more contemporary review, Chong and Druckman (2007) state that "the major premise of framing theory is that an issue can be viewed from a variety of perspectives and be construed as having implications for multiple values or considerations" (p. 104). From a message receiver's standpoint, the term "framing" refers to an intellectual process that uses heuristics, or mental shortcuts, and issue context to simplify decision-making. From a message sender's standpoint, "framing" refers to the act of purposefully communicating in a manner that highlights concepts that resonate with a given audience (Nisbet & Mooney, 2006). Corbett (2006) suggests that communication can be improved by using frames that help organize information within a social context. A "frame in communication" can lead to a change in an individual's or group's "frame of thought" (Price, Nir, & Capella, 2005).

Frames are frequently used by individuals to relatively quickly and efficiently organize ideas and define an issue in a manner that resonates with their pre-existing values and assumptions (Chong & Druckman, 2007; Nisbet & Mooney, 2006). The use of frames allows complex issues to be simplified by placing emphasis on those aspects most relevant to a given audience. This emphasis on relevant aspects allows citizens to "rapidly identify why an issue matters, who might be responsible, and what should be done" (Nisbet & Mooney, 2006, p. 56).

Framing Science

Nisbet and Mooney (2006) use the term "framing science" to describe a proposed process by which practitioners purposefully frame their public science communications in terms that resonate with core public values and beliefs. They assert that communicating science using publically relevant frames allows citizens to more quickly determine the importance of an issue and the potential actions that should be taken. Furthermore, they suggest that framing science may lead to increased public engagement regarding scientific topics.

The public almost never interprets science as "pure knowledge"; it usually comes contextually packaged in frames formed by past experience (Wynne, 1991). As is suggested by framing theory, public receptivity to science is often related to whether the information is perceived as useful and in accordance with past experiences. When sufficiently motivated, the public demonstrates an impressive ability to acquire scientific knowledge and apply in-depth, systematic analysis of scientific issues (Fiske, 1992; Wynne, 1991). Wynne suggests that scientific knowledge often requires "reframing" to make the information important to individuals and to motivate them to acquire additional knowledge.

There is research-based support for the responsible and ethical framing of scientific issues in a manner that integrates an understanding of public audiences (Chong & Druckman, 2007; Nelson & Oxley, 1999; Nisbet, 2005; Wynne, 1991). Many social and individual factors influence the public understanding of science (Myers, 2003; Wynne, 1991). People experience scientific knowledge contextually and evaluate scientific knowledge based upon other elements of knowledge, social

interactions, and personal characteristics. The effect of knowledge can be moderated, and sometimes quite substantially, by the context and frame within which the knowledge is presented or interpreted (Chong & Druckman, 2007; Nisbet, 2005; Sturgis & Allum, 2004; Zaller, 1992).

Extension Science Communicators

Extension practitioners should consider and thoughtfully apply framing theory and related concepts when engaging stakeholders and communicating science. As Extension science communicators, we are very aware of the need to do our best to share scientific information objectively. That understanding has the potential to produce a communication process that relies primarily on a one-way, matter-of-fact transmission of scientific knowledge. Extension practitioners, however, can use the concepts and strategies suggested by framing theory to share those same objective facts within relevant stakeholder frames. Doing so will enable stakeholders to more readily understand the information and the potential applications of the information, ultimately creating greater potential for utilization of the knowledge.

Additional effort on the practitioner's part may be required in order to better understand audiences and relevant frames, but the payoff for that investment could be significant. An interactive process between Extension practitioners and stakeholders that recognizes and incorporates framing concepts will better enable the public to understand and apply scientific knowledge.

Concluding Remarks

Extension educators will continue to play important roles as communicators of science. A research-based understanding of relevant communication and psychological research and its applicability to our profession will make us more effective communicators and educators. To truly engage stakeholders in an information exchange process related to important topics, Extension practitioners should consider framing information in a manner that is important and relevant to stakeholders. Organizing science communication around socially relevant contexts can be an important method of acknowledging other sources of individual and societal knowledge. Framing is one example of a communication method that can be used to help the public better understand and incorporate scientific information into their decision-making processes.

References

- Chong, D., & Druckman, J. N. (2007). Framing theory. *Annual Review of Political Science* 10, 103-126.
- Corbett, J. B. (2006). *Communicating nature: How we create and understand environmental messages*. Washington, Covelo, London: Island Press.
- Dunifon, R., Duttweiler, M., Pillemer, K., Tobias, D., & Trochim, W. M. K. (2004). Evidence-based Extension. *Journal of Extension* [On-line], 42(2) Article 2FEA2. Available at: <http://www.joe.org/joe/2004april/a2.php>
- Fiske, S. T. (1992). Thinking is for doing: portraits of social cognition from daguerreotype to laserphoto. *Journal of Personality and Social Psychology*, 63(6), 877-889.

- Myers, G. (2003). Discourse studies of scientific popularizations: Questioning the boundaries. *Discourse Studies*, 5(2), 265-279.
- Nelson, T. E., & Oxley, Z. M. (1999). Issue framing effects on belief importance and opinion. *The Journal of Politics*, 61, 1040-1067.
- Nisbet, M. (2005). The competition for worldviews: Values, information, and public support for stem cell research. *International Journal of Public Opinion Research*, 17(1), 90-112.
- Nisbet, M., & Mooney, C. (2006). Science and society: framing science. *Science*, 316, 56.
- Price, V., Nir, L., & Capella, J. N. 2005. Framing public discussion of gay civil unions. *Public Opinion Quarterly* 69(2), 179-212.
- Sturgis, P., & Allum, N. (2004). Science in society: Re-evaluating the deficit model of public attitudes. *Public Understanding of Science*, 13, 55-74.
- Tversky, A., & Kahneman, D. (2001). The framing of decisions and the psychology of choice. *Science* 211(4481), 453-458.
- Wynne, B. (1991). Knowledges in context. *Science, Technology, & Human Values*, 16(1), 111-121.
- Zaller, J. (1992). *The nature and origins of mass opinion*. New York: Cambridge Press.
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