

Planning and Information Foraging Theories: Social Implications and Extensions

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Abstract

Information foraging theory and strategic planning theory can help technical communicators think about effective research methods. A broader understanding of social theory can complement Gattis's approach by adding considerations related to underlying ideological assumptions and to how research practices are situated in the larger contexts of organizations, communities, and cultures.

I.7.2 Document Preparation—*information foraging*

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In “Planning and Information Foraging Theories and Their Value to the Novice Technical Communicator,” Lyn Gattis seeks to explain how novice technical communicators learn to search for information. Recognizing that no single model can fully represent this complex process, Gattis combines two different cognitive models: information foraging theory and strategic planning theory. As I understand it, information foraging theory attempts to explain how people evaluate the choices they encounter while conducting research, weighing quality and quantity of information against expenditures of time and effort. Strategic planning theory explains how people formulate research plans in relation to social goals, balancing efficiency or productivity against such concerns as credibility and social appropriateness. By combining these two models, novice technical communicators can get a sense of the research strategies people use, and of the types of decisions they make as they conduct research in particular situations. As Gattis notes, “The foraging model accounts for how individuals choose data sources, while the planning model focuses on the strategies they use to obtain the data from those sources, once identified” (p.9). I certainly agree that these models complement each other in productive ways, helping novice technical communicators to understand and develop sound research strategies.

Although Gattis claims that her approach is situated “contextually or environmentally” (p.15), it is somewhat unclear to me exactly how context and environment influence the research approach she advances. In the conclusion to her article, for instance, Gattis explains that strategic planning theory supplies the social element that information foraging theory lacks. As she puts it, her approach “accounts for both facets of cognitive processing—activities associated with solitary information gathering and those that depend on interaction as well” (p.15-16). So social interaction seems to be the only “contextual” or “environmental” factor

Gattis addresses. In addition to this factor, however, I think novice technical communicators need a much deeper understanding of the social forces that can influence research processes.

A more contextualized perspective can add to the approach that Gattis advances in two ways. First, it can illuminate the implications of the model itself, especially in relation to its ideologically based metaphors and assumptions. Second, it can provide a richer understanding of how technical communicators actually learn research methods and negotiate research contexts. In other words, a broader social approach can better account for the organizational, professional, and cultural contexts within which technical communicators conduct their research.

Implications of the model

What are the underlying assumptions of information foraging and strategic planning theories? In general terms, these theories place the technical communicator within a hierarchical and economic paradigm of knowledge production and circulation. Although the cognitive psychology framework tends to naturalize this paradigm, we should recognize that it is of course ideologically based, as are all disciplinary paradigms. John W. Coletta (1992) shows that the patterns we use to explain complex processes are always socially and politically situated on some level: "different 'natural' patterns of organization emerge as different values and purposes emerge. There is no *natural* pattern that is not also a pattern of preference" (p.60). And the discourse of cognitive psychology tends to naturalize certain scientific values such as rationality, hierarchy, and universality. However, the metaphors used to describe these theories are neither universal nor objective. Both information foraging theory and strategic planning theory draw on Western perspectives that value economic production and objectivity.

Information foraging theory draws on a hierarchical model of production and consumption, a model that is not useful in every context and that can even be counterproductive. For example, in his study of scientific textbooks, Coletta demonstrates how models of the ecological food chain depend on an economic paradigm that emphasizes competition and hierarchical power structures rather than cooperative, horizontal interactions. By figuring organisms as

consumers and leaving out the decomposers (molds, worms, flies, bacteria, and so forth), popular food chain models discourage us from considering a more cyclical or web-like model, in which organisms cooperate in an ecological system. Information foraging theory also draws upon a similar hierarchical, economic paradigm. In Gattis' article, foragers are described as "predators" who must determine the "profitability" of different search strategies (p.3). While exploring a "patch," or cluster of resources, the forager must decide when and whether to move on as the quantity or quality of resources diminish (p.4). Throughout, this anthropological model is suffused with economic terms—"yields," "productivity," "costs," "risks," and so forth. Thus, the model we end up with constructs the researcher as a solitary predator who consumes resources. However, research practices might better be described in a cyclical model, where information is not exhausted but reused and reformulated. Technical communicators do not simply consume information; they use it actively to create new documents that circulate in organizational and professional contexts. While a hierarchical approach may account for some types of research practices, is this really the best way to construct the roles and responsibilities of technical communicators?

Strategic planning theory is meant to provide a social element for Gattis' approach. However, it too relies quite heavily on individualistic, hierarchical, and economic values. To reiterate, these values are not necessarily bad, but other values might more productively guide the research process. Strategic planning theory depends on a rational agent who decides to interact with others because it will be "profitable" (p.5); in this model, human interaction is goal-driven, attending to "the strategies individuals use to minimize the negative consequences of their messages and thereby achieve social goals" (p.6). Gattis mentions "efficiency" and "social appropriateness" as two of these social goals (p.8). While the discourse of cognitive psychology would make these goals seem universal and natural, they are of course also socially and culturally determined. The efficiency model, in particular, is an artifact of certain cultural views of communication. In "The Technical Communicator as Author," Jennifer Daryl Slack, Dennis James Miller, and Jeffrey Doak (1993) have argued that the transmission and translation views of communication pro-

cesses, which rest upon notions of efficiency, devalue the work technical communicators do to create and articulate meaning. How does this happen? In the transmission view, the technical communicator is a neutral vessel who transmits messages to the audience, but does not contribute to meaning (p.18). In a slightly more empowering but still relatively impoverished way, in the translation view, the technical communicator adapts information for the audience, but does not author meaning (p.30). But neither view understands the technical communicator as actively shaping meaning and negotiating power relations within a social context. Slack, Miller, and Doak advance an articulation view of communication, which “allows us to move beyond a conception of communication as the polar contributions of sender and receiver to a conception of an ongoing process of articulation constituted in (and constituting) the relations of meaning and power operating in the entire context within which messages move” (p.24). In the articulation view, then, technical communicators not only articulate and rearticulate meaning, but also take responsibility for how their work functions in relations of power and authority (p.31). But the strategic planning approach obscures the complex communication processes involved in the task of research.

Like information foraging theory, strategic planning theory is based on hierarchical models of thought. As Gattis notes, “[u]nder the broad meta-goals of efficiency and social appropriateness are hierarchical, nested arrangements of subgoals” (p.8), and researchers can use top-down and bottom-up planning to achieve these goals (p.7). Alternative models of thought, like rhizomatic or horizontal thinking, and alternative goals (especially emotional ones) are not included in strategic planning theory. For instance, technical communicators might meet with co-workers not just to gather information more efficiently, but to brainstorm and invent ideas for a project. Although strategic planning theory includes social interaction, it still focuses on a rational individual who determines social goals, without attending to how these goals are collectively and socially determined, constrained, and contextualized. For technical communicators, social goals may depend on the organization in which they work (Lutz, 1986; Ede and Lunsford, 1990; Shirk, 1991). For instance, a cooperative, team-based atmosphere might lead people to develop different social goals than a more competitive, hierarchically structured company (Ede

and Lunsford, 1990, p.133). Ultimately, strategic planning theory upholds the myth of the solitary researcher, thereby naturalizing hierarchical relationships of power and knowledge rather than situating them as one (if prevalent) configuration.

In sum, rather than treating information as “already-made,” and technical communicators as simple foragers or collectors of information, it might make more sense to look at research as a complex knowledge-making process situated within specific contexts. As Bernadette Longo (2000) suggests in *Spurious Coin*, the work technical communicators do is always already situated within a system of technical knowledge and power (p.x). A comprehensive approach would place the research technical communicators conduct within such a system.

Extending the social approach

Gattis’ approach maps out the social interactions technical communicators use at the personal level, interactions that occur between co-workers within an organization. For the most part, the researcher operates alone, only consulting others when it is necessary to gather information. But there are broader social forces that shape research practices. Let me address three increasingly broad forces. These forces operate on organizational, professional, and cultural levels.

First, the research technical communicators conduct occurs within an organizational context. Marjorie Rush Hovde’s (2001) ethnographic study demonstrates the active role writers take in constructing (not just finding) knowledge, as well as the importance of organizational constraints on workplace research. Hovde argues against the tendency in technical communication research to separate knowledge from language. For Hovde, research is about generating ideas, not just finding information: “According to constructivist theories of discourse, technical communicators do not merely collect pre-existing information, as if picking up apples that have fallen to the ground, but are involved in the process of shaping meaning as they come to understand their subject matter” (p.62). Hovde found that writers actively explored and shaped knowledge as they collected information, based on their perceptions of the audience, purpose, and context for their writing (p.88). Hovde’s study shows that a range of organizational factors affect research practices for technical

communicators, factors such as the availability of resources, internal reviewers or technical editors; the organization's document planning and review process; and access to subject matter experts (p.73). In Hovde's ethnographic study, the strategies writers used were largely determined by organizational resources and limitations. Examining organizational contexts helps us to understand how technical communicators actively shape their research practices in relation to a company's goals, methods, and constraints.

Second, technical communicators conduct research within a professional context that moves beyond the organization itself. In her landmark essay, "A Humanistic Rationale for Technical Writing," Carolyn Miller (1979) insists that professional values shape communication: "To write, to engage in any communication, is to participate in a community; to write well is to understand the conditions of one's own participation—the concepts, values, traditions, and style which permit identification with that community and determine the success or failure of communication" (p.617). I would suggest that research operates the same way as writing in this passage. Researching is a social activity that occurs within a community; what is considered effective research depends on the histories and conventions of that community.

Gattis tends to suggest a solitary research figure. Even in her section on strategic planning theory, which is purportedly socially involved, the researcher only concerns herself with others in order to achieve individual social goals. But workplace studies tell us that one's concepts and values in regards to research are already shaped by one's participation in a community. For example, technical communicators trained in a program that emphasizes a critical framework would not see their own research practices as immune to critique, opening their work to other perspectives.

Dorothy Winsor (1990) has argued that what counts as knowledge is "that which most people in a discourse community are convinced of" (p.60). Likewise, what counts as valuable research is not determined solely by the researcher (in a rational model of value and risk), but also by the discourse community within which she is situated. For instance, because the profession of technical communication is focused

on developing user-centered documentation, novice technical communicators might seek out information about the users of a product, rather than the product itself. In this case, a technical communicator's research goals could be determined, in part, by their training and education, by their understanding of the goals of the profession, by dominant theoretical paradigms within the discourse community, and by the users and user sites they study.

Third, an extended social approach can help to reveal the cultural context for research practices, especially if we move from secondary to primary research (although both are epistemic activities). As Bernadette Longo (2000) has shown, a social perspective can be limited if "[i]t does not allow researchers to explore how technical writing practices work to legitimate some types of knowledge while marginalizing other possible knowledges" (p.7). For instance, Robert R. Johnson (1998) has argued that dominant approaches to technical documentation tend to marginalize users' practical and experiential knowledge, or "cunning intelligence" (p.46), in favor of "a discourse of expertise" (p.10). If researchers accept the "discourse of expertise" perpetuated on a broad cultural level, how will they view the research process? And how will they view users? They may consider research findings to be infallible, thereby avoiding critical assessments of the information produced by "experts," and limiting the work technical communicators do to shape meaning. The "discourse of expertise" may also lead researchers to consider users as objects of study, not producers of knowledge. Thus, the "discourse of expertise" promotes a less participatory model, ignoring the contributions technical communicators and users make in the design, development, and implementation of technical communication (Johnson, p.45). The research practices of technical communicators, therefore, are inflected by cultural notions about technology, knowledge, and power. In adopting Gattis' approach, we should remember that the choices researchers make are affected not just by cognitive processes, but also by cultural values. A technical communicator might ignore a "patch" of information because it seems "unprofitable," but what she considers profitable is likely to be determined by the cultural context.

Conclusion

There certainly is value in the approach Gattis advances to help technical communicators think about research processes systematically. Information foraging theory can help them to become more efficient researchers by carefully evaluating resources and making reasoned choices. And strategic planning theory can help novices to develop successful research strategies that include social interaction as well as solitary research. It would be foolhardy to dismiss either theory as entirely reductive or unhelpful.

But a broader understanding of social theory can complement Gattis' approach in two crucial ways. First, a broader understanding suggests that the language used to describe cognitive processes is not neutral, but imbued with ideological assumptions. It is important, therefore, to consider the metaphors underlying any model or theory we use to explain research practices. Second, this broader approach points to the ways in which an individual's research practices are situated in organizations, communities, and cultural contexts. A wider perspective on social theory can help us to provide a richer understanding of how technical communicators learn to conduct research and negotiate research interests.

Engaging a broader social understanding of research has important implications for the status of technical communicators. If we take a narrow approach, we risk defining technical writers as passive, solitary researchers who simply locate and appropriate already-made information—a relatively low-status task. A broader perspective, however, considers technical communicators as important contributors who actively shape meaning and negotiate power relations as they write within a social context.

From this social approach, technical communication can claim a more significant position within organizations, higher status as a profession, and a more central function within our culture.

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