Knowledge, Stories, and Culture in Organizations

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Organizations are full of stories; organizational economics, not so much. Rather, organizational economics has little work that conceptualizes the role or measures the incidence of stories in organizations.

This shortage concerns us not only because stories are prevalent in organizations, but more importantly because we think some stories play a role in organizations that sheds light on why organizations exist and how they might be improved. In brief, we explore the idea that stories in organizations may induce a particular kind of organizational knowledge, of which organizational culture is a leading example. We therefore discuss first knowledge, then stories, and finally organizational culture.

I. Knowledge

Sixty years ago, Edith Penrose (1959: 77) observed that “Economists have, of course, always recognized the dominant role that … knowledge plays … but have, for the most part, found the whole subject … too slippery to handle.” Since then, economics has made great strides concerning strategic information transmission (e.g., Spence, 1973), information design (e.g., Bergemann and Morris, 2019), and the like. Does this progress mean that Penrose’s observation is dated? We think not.

A. Knowledge Held by Individuals

Within philosophy, Gilbert Ryle (1945) distinguished “knowing how” from “knowing that.” In terminology often used outside economics, one might call the former “knowledge” and the latter “information.”

More recently, Michael Polanyi popularized the idea of “tacit” knowledge, arguing that “we know more than we can tell.” (1966: 4, italics in original). Knowing how to ride a bicycle has become a frequent example of knowledge.

Economics has learned a great deal about information since 1959, but concerning Ryle’s and Polanyi’s conceptions of knowledge, did Penrose know more than she could tell?

B. Organizational Knowledge

The index of Arrow’s (1974) The Limits of Organization lists “information” 13 times—
tied with “authority” and more than “organization”—but “knowledge” zero times. Perhaps Arrow also saw “knowledge” as trickier terrain than “information.”

In contrast, Nelson and Winter (1982) drew on Polanyi in discussing not only individual but also organizational knowledge: “the routinization of activity in an organization constitutes the most important form of storage of the organization’s specific operational knowledge” (p. 99) and “organizational memory is refreshed … by exercise—just as, and partly because, individual skills are maintained by being exercised” (p. 107).

C. Knowledge Management

By the year 2000, most large firms had some kind of knowledge program (Prusak and Davenport, 2013: 258). Today, many have a Chief Knowledge Officer or Chief Learning Officer (CKO or CLO). For example, Section IV draws on insights from the CKO of NASA.

Nonaka and Takeuchi’s (1995) The Knowledge-Creating Corporation played a leading role in the rapid diffusion of knowledge programs. The book draws heavily on Polanyi, arguing that attempts to express the inexpressible will require “figurative language [and] symbolism” (p. 8). And the authors move beyond “knowing how” to ride a bike, by including cognitive constructs such as “schemata [and] mental models” as part of tacit knowledge (p. 12).

For our purposes, a second influential book—Davenport and Prusak’s (1998) Working Knowledge—made a key observation: “A good story is often the best way to convey meaningful knowledge” (p. 82, emphasis added). Interestingly, Nonaka and Takeuchi did discuss stories, but as a method for translating explicit knowledge to tacit (“internalization,” p. 69). Like Davenport and Prusak, we instead consider stories as a method for communicating tacit knowledge from one person to another (Nonaka and Takeuchi’s “socialization,” p. 62).

II. Stories

In a celebrated essay, the psychologist Jerome Bruner argued that:

There are two modes of cognitive functioning, two modes of thought, each providing distinctive ways of ordering experience, of constructing reality. The two (though complementary) are irreducible to one another. …

They differ radically in their procedures for verification. … The one verifies by eventual appeal to procedures for establishing formal and empirical proof. The other establishes not truth but verisimilitude. (1986: 11)

Relatedly, psychologists have long been convinced that “narrative comprehension is among the earliest powers of mind to appear in
the young child” (Bruner, 1991: 9). And now economists recognize this fact: “The human brain has always been highly tuned toward narratives” (Shiller, 2017: 967).

Stephen Denning—a former leader of knowledge management at the World Bank—went further, suggesting that a good story can enable “a leap in understanding” by having the listeners “fill in the blanks” (2001: xviii and xx). Comparing Bruner’s two modes, Denning argued that “abstract thinking works by similes, … [whereas] narrative … works by metaphor.” And linking to Polanyi, Denning asserted that a good story leverages “the full richness of tacit understanding” (p. 70).

A. Brains and Domains

From an evolutionary perspective, it seems expensive to carry two modes of cognitive functioning, unless each was well suited to its own domain. Bruner again pointed the way:

[M]ost of our knowledge of human knowledge-getting … is drawn from studies of how people come to know the natural or physical world rather than the human or symbolic world. …

[W]e do not achieve our mastery of social reality by growing up as “little scientists,” “little logicians,” or “little mathematicians.”

[W]e organize our experience and our memory of human happenings mainly in the form of narrative. … (1991: 4)

The idea that narrative is helpful in interpreting the human (vs. the physical) world makes it natural that organizations are full of stories.

B. Stories Told in Organizations

One widespread account of stories in organizations concerns the department store Nordstrom allowing a customer to return snow tires—even though Nordstrom does not sell tires. Apparently the Nordstrom store was in a building that had long been an auto store, so the customer might have been confused.¹

For our purposes, it is not critical whether such a story is true; instead, the point is that such stories are told within organizations about themselves. Within Nordstrom, this story illustrates customer service, which is central to the firm’s competitive strategy. Perhaps more importantly, this story illustrates a central aspect Nordstrom’s internal management: employees are encouraged to “use good judgment in all situations.”² In short, the story is a dramatic reminder to new and even continuing Nordstrom employees of two important principles for the organization: customer service and using good judgment.

¹ For example, see http://www.startribune.com/did-someone-really-return-a-set-of-tires-to-nordstrom/330414071/.

² For example, see https://www.cbsnews.com/news/nordstroms-awesome-employee-handbook-is-a-myth/.
We stated the Nordstrom story in a paragraph. But in an ethnography of stories in an office-supply firm, Boje (1991) argued that “stories are performed … to make sense of an equivocal situation” (106) and that “most storytelling is done in conversation and involves the listeners in various ways” (107). That is, “storytelling did not appear in concise sequences of storytellers recounting full texts to passive listeners” (112); instead, listeners “are co-producers with the teller of the story performance” (107).

Finally, not all competitive strategies or management approaches may require stories. On one hand, Winter (1987: 185) argued that “It is in the choice of heuristic frame … that creative insight into strategic problems plays its role.” We take Winter’s “heuristic frame” to be akin to a story, but Denning (2001: 194) illustrated the flip side: “Those whose goal is merely … control will [not] find storytelling … a very … important tool.”

Building on these ideas, we turn next to a role for stories in building, maintaining, and changing organizational culture.

III. Stories and Cultural Knowledge

Discussing how stories might induce cultural knowledge requires a definition of culture, but “Culture is one of the … most complicated words in the English language” (Williams, 1983: 87). For example, almost 70 years ago, over 160 definitions had already been proposed (Kroeber & Kluckhohn, 1952).

Within economics, there is now a literature on “Culture and Institutions” (Alesina and Giuliano, 2017), much of which adopts something like the following conception of culture: “customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation” (Guiso et al., 2006: 23).

This customary-values, cross-generational conception of culture might well be transmitted (across generations) via stories. Furthermore, this kind of culture might well affect organizational design and performance: Hofstede (1980) is a classic reference; Bloom et al. (2012) provide an elegant recent example.

While we share these interests in (i) the connection between culture and stories and (ii) the effects of culture on organizational design and performance, we depart from the customary-values, cross-generational notion of culture in two ways. First, rather than looking across generations, we follow Schein (1985) by considering the local path-dependence of shared understandings in groups. And second, rather than values, we follow Geertz (1973) by focusing on interpretation. The notion of organizational culture we study is thus smaller-scale, faster-moving, and often intentional: one
might write “Culture and Institutions” versus “culture from organizations.”

A. Local Path-Dependence

Rather than cross-generational transmission, we follow Schein’s (1985) seminal definition of organizational culture as “a pattern of basic assumptions ... invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration” (p. 9, emphasis added). Schein’s definition reminds us that a given group (with given grandparents) could wind up with various different organizational cultures.

Interestingly, ideas like Schein’s appeared early in organizational economics, but without using the term organizational culture. For example, in discussing an organizational routine Nelson and Winter (1982: 111) describe “a shared tradition arising out of the specific contingencies confronted and the responses of the parties to those contingencies” (but include no reference to organizational culture in their index).

B. Interpretation

Geertz (1973: 12) argued that “Culture is public because meaning is.” A first inference from this astounding sentence is that meaning is public. That is, meaning—or, for us, synonymously, “interpretation”—is shared. In this usage, one person cannot make meaning.

A second inference is that culture, too, is shared: for Geertz, culture is a concept at the group level (not the distribution of individuals’ characteristics across the group).

Finally, a third inference is that culture is about meaning, or interpretation. For example, two people from the same culture might interpret one of Boje’s “equivocal situations” in the same way.

To express some of these ideas formally, consider the story “(s, a).” That is, consider the story that when the state of the world was s, the appropriate action was a. An atomless probability distribution on a continuous state space has probability zero that any particular s will recur, so such a story is useless if it guides behavior only in state s. But a story could be useful if it inspired a “leap in understanding” from listeners “filling in the blanks.”

Put differently, in geometric terms, two points define a line, but a good story might be closer to one point defining a line. That is, the story (s, a) might evoke other state-action pairs consistent with the story, without articulating them; they might be tacit. As a result, today’s story might aid tomorrow’s interpretation: for example, is a new state, s’, sufficiently similar to the state s in the story to warrant the same action a in response?
C. Building Meaning through Stories?

If we have done our job then the following interim conclusion should seem natural. If organizational culture involves (it would be redundant to say “shared”) interpretation, and if interpretation depends on tacit knowledge, and if a good story can leverage or transfer tacit knowledge, then stories may play a role in building organizational culture.³

Returning to our formal framework, if an organization’s leader wishes the organization’s state-dependent action rule to be \( a^*(\cdot) \), but the leader cannot express this entire function explicitly, might there be a story that the leader finds useful to tell? Taken literally, the story might again be the state-action pair \((s, a)\), but a leap in understanding might create in the listener’s head the function \( a(\cdot) \).

Many questions then arise: What stories are available, making what functions \( a(\cdot) \) available? Does the leader know what function will be induced in a given listener’s head, or does that depend on tacit knowledge the leader does not know? Might two listeners have different functions induced in their heads by a single story from the leader? In a dynamic setting, could the listener’s co-production of the story result in a new function in the listener’s head, and what might be the leader’s belief about that function? And so on.

Such questions illustrate the “clarity” problem underlying relational contracts (Gibbons and Henderson, 2012): if the parties could be fully explicit about their strategies in a relational contract, why couldn’t those strategies be captured in a formal (i.e., court-enforceable) contract? Like tacit knowledge, relational contracts might thus have inexpressible aspects, creating a role for stories in building relational contracts. Put differently, equilibria like relational contracts require a great deal of (shared) interpretation, so we need to understand how this might be achieved.

D. Progress to Date and Next Steps

Knowledge: Garicano (2000) is a leading model in organizational economics about the use of knowledge in production: if their knowledge allows it, organization members solve the problems they confront; if not, they pass the problem to someone with different knowledge. Since organization members do not tell each other what they know, their knowledge could be interpreted as tacit, but endowing members with their knowledge is

³ Actually, none of this depends on the organized activity being conducted within a single organization. See Gibbons (2020) for a parallel discussion of “visible hands” between organizations.
taken to be a simple matter of costly training, and the organization designer knows what each member knows, so the model is probably better interpreted in terms of information (as in Arrow and Bergemann & Morris). A model of tacit knowledge would be a big step forward.

Stories: Akerlof et al. (2020) may be the only model in organizational economics of stories in organizations. As a reduced-form, a story changes a party’s utility function. DiMaggio (1994: 27-28) would label this approach “regulative” for its analysis of how norms, values, and conventions reshape an individual’s self-interest. In contrast, he would call our focus on interpretation “constitutive” for its exploration of how parties perceive and process the world around them. See Hoff and Stiglitz (2016) for a model and discussion like our approach; we are eager for more.

Local path-dependence: Chassang (2010) was one of the first models in organizational economics aimed at (and beautifully delivering on) local path-dependence, but—like all Nash equilibria—the parties know each other’s strategies, so there seems to have been no difficulty expressing them. Ellison and Holden (2014) assumed instead that some states of the world are such that the parties cannot discuss them until they have seen them together—echoing Polanyi, Nelson & Winter, and Schein. Blending these approaches seems important.

IV. Coda

While stories and knowledge can contribute to an organization’s culture, the culture also can be an impediment to accepting stories as contributing to knowledge. The latter was true at NASA, where there is a strong engineering-based culture.

When Ed Hoffman, who retired as NASA’s CKO, first broached the idea of using stories to help introduce and discuss innovative products and practices, he was greeted with silence—and sometimes with astonishment that such complex matters could be reduced to “tales.”

NASA held several forums each year focusing on this role for stories, but attendance and enthusiasm weren’t strong. Ed made a conscious decision to encourage the presenters to rely much less on slides and more on telling their stories in a “natural” way. Ed and his staff helped coach some of the reluctant presenters and spent much time convincing them that this approach would work.

After the first few forums, word spread about this new way of communicating and attendance dramatically improved. Ed was promoted to CKO and the story tradition became part of

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4 Personal communications between E. Hoffman and L. Prusak.
NASA’s culture and was adopted by some other space programs around the world. The power of stories surmounted an antagonist culture, and storytelling became a substantive part of NASA’s culture.

REFERENCES


Williams, Raymond. 1983. Keywords: A Vocabulary of Culture and Society. 2nd ed. New York: Oxford University Press.