

Metaphors as Cognitive Devices in Communities of Practice

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INTRODUCTION

The role of language for knowledge creation in communities of practice (CoPs) and innovation teams has been stressed by the accounts of storytelling (Orr, 1996; Nonaka & Takeuchi, 1995). Stories work as metaphors connecting new problem situations with prior problem situations. They guide CoP members to arrive at new connections of prior unconnected knowledge domains within cognitive maps. Cognitive maps contain causal and temporal relations between cognitive concepts: “[Cognitive] maps portray causality, predicate logic, or sequences, all capture temporal relations: if this (in the now), then that (in the future)” (Weick, 1990, p. 1). New connections of knowledge domains brought about by metaphorical reasoning enable innovative problem solutions and serve as a ‘platform’ for new knowledge creation in the future. Thus, investigating metaphorical language usage promises to add value to the understanding of knowledge creation in CoPs.

BACKGROUND

Traditionally, the study of metaphors belongs within the study of rhetoric, linguistics, literature, cognitive psychology, and philosophy. Metaphors are “the outcome of a cognitive process that is in constant use—a process in which the literal meaning to a phrase or word is applied to a new context in a figurative sense” (Grant & Oswick, 1996, p. 1).

Metaphors are more than linguistic tools. Lackoff and Johnson (1980, pp. 5-7) state that metaphor is pervasive in everyday life, not just in language, but also in thought and action: “The essence of metaphor is understanding and experiencing one kind of thing in terms of another” (Lackoff & Johnson, 1980, p. 5). To speak metaphorically is to relate two entities (or terms) through the verb “to be” (or the copula

“is”)—for instance, ‘an organization is a machine’ (Coyne, 1995). The consequences of such metaphorical utterances are of cognitive nature—metaphor is implicated in perception. During word processing for example, we actually see the computer screen as a sheet of paper. “Seeing as” is a fundamental act of perception (Goodman, 1978).

Accordingly, we are constantly engaged in metaphorical projections: we project one term, concept, or situation onto another (Coyne, 1995). A metaphor includes a primary and a secondary subject. In the metaphor ‘producing an integrated circuit (IC) by using chemical vapor deposition (CVD) is building a complex labyrinth by using Lego toys’, the primary subject is the ‘CVD-Method’ and the secondary subject is ‘Lego toys.’ The secondary subject is a whole system or a whole domain of elements in a cognitive map. Therefore, by relating a secondary subject domain to a primary subject domain, multiple comparisons, differences, and paradoxes can be discovered. However, it is important to stress that often the meaning of the secondary subject changes too. Thus, the knowledge subjects really interact in a sense that both concepts are given new or enriched meanings depending on context (Black, 1962).

FUTURE DEVELOPMENT AND CONCLUSION

Metaphor is a complex cognitive phenomenon that alters cognitive maps and therefore future action on the ground of a specific context. Metaphors are an “invitation to see the world anew” (Barret & Cooperrider, 1990, p. 219). Thus by using figurative speech in metaphorical statements, CoP members may generate knowledge that helps solve problems in actual practice.

Knowledge creation by further developing cognitive maps involves arriving at new classifications:

“Naming is always classifying, and mapping is essentially the same as naming” (Bateson, 1979, p. 30). However, making new classifications in maps always happens on the ground of what someone already knows: “You have to know something already in order to ‘see’ something different” (Weick, 1990, p. 2). Thus, the effectiveness of metaphorical statements is dependent on the amount of prior shared knowledge which can be activated. This emphasizes the importance of shared “absorptive capacity” between CoP members who interpret metaphors (Cohen & Levinthal, 1990). Therefore, it may be concluded that storytelling may not be facilitated independently from common actual practice in CoPs.

Acknowledging and revealing the central role of figurative speech in knowledge creation requires research that entails participation in discussions or a detailed analysis of content ‘produced’ during interactions. In this respect, open source software development CoPs seem to be an especially interesting research area: adaptive reuse of prior knowledge in software development—that is, the modified usage of existing code fragments for different software projects—may be conceived of as a metaphorical statement to a prior problem solution.

Furthermore, the role of metaphors as a language tool for socializing legitimated peripheral participating members in CoPs may be investigated. This could reveal whether core members use metaphors for knowledge creation and sharing from which outsiders probably cannot grab the whole associated meaning. Becoming a core member within a CoP as learning collective thus involves learning the associated figurative meaning of metaphorical statements uttered during actual practice.

REFERENCES

- Barret, F.J., & Cooperrider, D.L. (1990). Generative metaphor intervention: A new behavioral approach for working with systems divided by conflict and caught in defensive perception. *Journal of Applied Behavioral Science*, 26, 219-239.
- Bateson, G. (1979). *Mind and nature*. New York: Dutton.
- Black, M. (1962). *Models and metaphors*. Ithaca, NY: Cornell University Press.
- Cohen, W.M., & Levinthal, D.A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35, 128-152.
- Coyne, R.D. (1995). *Designing information technology in the postmodern age*. Cambridge, MA: MIT Press.
- Goodman, N. (1978). *Ways of worldmaking*. Hassocks, UK: Harvester Press.
- Grant, D., & Osrick, C. (1996). Introduction: Getting the measure of metaphors. In D. Grant & C. Osrick (Eds.), *Metaphor and organizations* (pp. 1-20). London: Sage Publications.
- Lackoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: The University of Chicago Press.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese create the dynamics of innovation*. Oxford, UK: Oxford University Press.
- Orr, J.E. (1996). *Talking about machines: An ethnography of a modern job*. Ithaca, NY: Cornell University Press.
- Weick, K.E. (1990). Cartographic myths in organizations. In A.S. Huff (Ed.), *Mapping strategic thought* (pp. 1-10). Chichester, UK: John Wiley & Sons.

KEY TERMS

Cognitive Map: A collection of nodes linked by some edges (arcs). From a logical perspective, a node is a logical proposition and a link is an implication. Thus, cognitive maps consist of causal and temporal relations between cognitive concepts.

Metaphor: In language, a rhetorical trope where a comparison is made between two seemingly unrelated subjects. Typically, a first object is described as being a second object. In this way, the first object can be economically described because implicit and explicit attributes from the second object can be used to fill in the description of the first. (<http://en.wikipedia.org/wiki/Metaphor>)

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