

DISCOVERED PERSPECTIVES OF TACIT KNOWLEDGE AS INTERPRETIVE FRAMES

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Abstract:

This paper is a description and analysis of found conceptualizations of tacit knowledge in the knowledge management (KM) literature. The essay's argument is that there are several different ways of framing or understanding the nature, conceptualizations, of tacit knowledge. Because tacit knowledge is the most foundational idea and experience, in knowledge management literature, the purpose of this essay is to clarify the several perspectives discovered to be in use in the literature.

Keywords: tacit knowledge, knowledge management, Polanyi, Nonaka, perspectives

1. INTRODUCTION

Tacit knowledge is a term which Michael Polanyi uses to describe and discuss the central idea of his phenomenology of experience. Polanyi calls this experience tacit knowing. For him, all knowing is tacit knowing and results from the way of being in the world, which he calls indwelling.

Another discovered perspective is Nonaka's focused use of the term, tacit knowledge, in his body of work on knowledge management, or, specifically, his theory of how organizations create knowledge for innovation in the business world. Understanding his sense of the nature of tacit knowledge is difficult, although perhaps for most it does not appear difficult, because Nonaka insists that his use of the term, his conceptualization, is formally grounded in Zen Buddhism, and what he calls the Japanese way of knowing.

Tacit knowledge is also a central concept in the language of knowledge management, generally. This forms another perspective which, while supposedly based on Polanyi's work, is a wholly different take on the nature of tacit knowledge. This take, or conceptualization, usually describes the idea, and the experience, as an individualist or cognitivist phenomenon. There is also as part of this conceptualization, a collectivist approach. Consequentially, this perspective grounds tacit knowledge either in the person or individual, in the form of cognitive schemas, or in a community of practice, in the form of practices.

This essay is an effort to settle a perceived problem in the knowledge management literature. This problematic, which is tacit at its roots, arose because, while many authors reference either Polanyi or Nonaka about tacit knowledge, it seemed as if another way of conceiving the nature of tacit knowledge was being expressed. The purpose of the essay is to express and clarify this sensed problem in the literature. The essay proposes several frames for understanding the nature of tacit knowledge and presents them in taxonomic form.

2. POLANYI'S PERSPECTIVE ON TACIT KNOWING

Polanyi (1966) writes of "tacit knowing" (p. 10) as an affair of understanding the details of a situation, or thing, in terms of the general idea expressive of the details worked together as a coherent object. Tacit knowing is always a "from – to relationship" (Polanyi, 1966, p. 10; Polanyi, 1969, pp. 125, 141). "Tacit knowing commonly integrates groups of particulars into their joint meanings" (Polanyi & Prosch, 1975, p. 52). For Polanyi (1969), all knowing is tacit or grounded in the tacit (p. 195). Polanyi [and Prosch] (1975) ontologically anchors tacit knowing (p. 34) in the world of particular actions taken, things encountered, and dealt with in everyday situations. These singular individualized aspects of experience are subsidiaries to what we do know. Although directly experienced, they are mere contributions to what we know, that is, the focus of our actions, and they are silent because our attention and our intentions are elsewhere. What we know tacitly or silently are the details, individual aspects or even qualities, which make up or constitute the general object or "entirety" (Ortega & Gasset, 1967, p. 38-46) that we know explicitly, or focally, and which we use to pull together these specific details meaningfully. The details are the things and actions directly and immediately present to us: These words being written by this pen [in the original draft] on this paper by myself reflecting on my experience. These details are instrumental, or subsidiary, and tacit, i.e., they are known only in terms of "writing this essay" (Polanyi, 1962, p. 88), because they are subsidiary elements known not in themselves but constitutive of the writing of this essay, their meaning. Ortega y Gasset (1957) makes a similar inference: "What we are accustomed to is things, but not the ingredients of which they are made up" (p. 60).

For example, we are watching adults and children swimming in a pool of water. Individuals engaged in a fun-thing, splashing and laughing. But this activity, this swimming, is not an ordinary act of swimming. It is a detailed activity of experience, of a "birthday party;" it is one of several activities which make up this "birthday party." These individuals are swimming because they are at a "birthday party." The meaning of this swimming and other activities is the fact (the social fact) that these details, these activities, of experience happen in and take their meaning from the "birthday party." This is the meaning of this swimming. Another meaning present could be that the swimming is part of an "exercise session." The focal object "birthday party" or "exercise session" is the meaning of this subsidiary detail, the swimming (Polanyi & Prosch, 1975, p. 35). And, to do a "birthday party", to understand it, we live in, dwell in, the activities of the party (Polanyi & Prosch, 1975, p. 37).

The process of knowing tacitly involves four structural relationships” the “functional,” the ‘phenomenal,’ the “semantic,” and the “ontological” (Polanyi, 1966, pp. 10-13; Polanyi, 1969, pp. 140-145; Polanyi & Prosch, 1975, pp. 34-36).

In tacit knowing, the tacit relation is from A to Z, or from the details to the construed generality structured according to the four aspects of tacit knowing. That is, functionally, we tacitly are aware, know, or understand the details because we know or understand the general affair or object or the idea. We know about the details only because we know the general idea, field, situation, or background (Polanyi, 1966, p. 10). Phenomenally, it is by means of how the general appears that we can know or understand the details. The details appear or present themselves tacitly in the generality. For example, we know the symptoms of an illness or a disease only in our diagnosis of the disease (Polanyi, 1966, p.11). Semantically, the details are meaningful or significant in terms of the general object. The general affair makes the details signs by inferring the generality as their meaning. The general object allows and constrains; it acts as an interpretive object, or an understanding of the details as signs of itself (Polanyi, 1966, pp. 11-12). Ontologically, a combination of the details and generality creates, as an existential entity, the object, thing, or affair in the world, as understood or known (Polanyi, 1966, p. 13).

For example, when we write of a Computer Information Systems (CIS) department meeting, we are able to describe (the words used analyze the singular acts of the situation, even as they designate) the items, the things, agenda items, doings and sayings, which constitute the affair called “CIS department meeting,” by writing or speaking about the many actions, events covered by the name, and which must occur to “have” a department meeting. We experience the CIS department meeting as a field because we experience the singular individual aspects of the situation, or elements of the entirety. The meaning, or semantics, of these singular affairs is “CIS department meeting;” the detailed actions of individuals function or work to make the phenomenal affair called “CIS department meeting” happen; as a result there is an ontological entity called “CIS department meeting.” The known focus is this “CIS department meeting” consisting of subsidiary actions and events (the particular details such as a discussion of enrollment numbers, curricular proposals made and voted upon, and which are recorded in the minutes of the meeting), encapsulates and makes meaningful the subsidiary affairs occurring in a place of intersubjectivity or conviviality (Polanyi, 1962, pp. 203-204): lived-togetherness or indwelling-togetherness.

For Polanyi (1966), what we known or understand about an affair in the world, and how we know this, is a result of our “indwelling” in the particulars of the affair (p. 160; Polanyi & Prosch, 1975, p. 37). We “interiorize” the particulars (Polanyi, 1969, p. 148). Polanyi (1962) writes that we are aware of two affairs (p. 55): one being a “subsidiary awareness” (p. 55) which implies a “focal awareness” (p. 55) of what we are in the process of understanding some focused upon thing. For Polanyi (1962), “indwelling” is a frame of being situated in the world and its affairs, and using a language to describe and analyze experiential affairs (pp. 59, 198-199). For Polanyi (1962), tacit knowing is embedded knowing, “convivial” indwelling (pp. 203, 209-211), within a language and a culture (pp. 289, 375). Polanyi’s (1962) term “conviviality” (p. 203) describes a communal indwelling by a group of people in a world and their sharing or dwelling-together in a system of meanings or a culture (p. 203). By dwelling in or participating in convivial situations, an individual’s actions are participatory of consensual, communal affairs; the actions taken are convivial and ritualistic or habitual (Polanyi, 1962, pp. 206-211). Conviviality, for Polanyi (1962), is a way of describing a group’s action emerging from the joined individual actions of a group’s members. For example, a “department meeting” which takes place repeatedly in a designated room and at a designated time and date is a communal, or convivial, ritualistic affair in which individuals participate, or indwell, and which is an opportunity for transcending individuality by the emergence of a communal agreement, or consensus, e. g., after much discussion of a topic a vote is taken on a proposal which is the meaning of the discussion, and which has emerged from the discussion (Polanyi, 1962, pp. 208-212).

2.1 Polanyi’s taxonomy of tacit knowing

Ineffable and personal knowing
From – to relationship
Proximal terms to distal terms
Subsidiary awareness to focal awareness

Details to comprehensive or coherent entity
Details + coherent entity = meaning
Aspects or qualities of tacit knowing: functional, phenomenal, semantic, and ontological
Indwelling or interiorization
Personal knowing and commitment
Levels of emergence
Conviviality or communal consensus

3. NONAKA'S PERSPECTIVE ON TACIT KNOWLEDGE

The Japanese way (grounded in Zen Buddhism) views knowledge as being fundamentally “tacit” (Nonaka, 1994, pp. 16, 24; Nonaka & Takeuchi, 1995, pp. 8-9; Nonaka & Konno, 1998, p. 42). This affair of tacit knowledge is, in the Japanese tradition, a personal experiential affair (Nonaka, 1994, pp. 17, 24; Nonaka & Takeuchi, 1995, p. 3) of the immediacy of experience of things in situations, a harmonious unity situationally with things and people (Nonaka & Takeuchi, 1995, pp. 27-33).

According to Nonaka, all knowledge is tacit. This is also Polanyi's argument. But we live-in a world of explicitness. So the problem is changing what we covertly know to what we can overtly know, or arriving at a stage of enlightenment. Although our tacit knowing of things is experiential or “inductive” initially, there are “abductive” and “deductive” aspects. Making what we know tacitly explicit requires that we demonstrate all these aspects of the logic of our claims about our world. This is difficult to do, but not impossible. It requires a move from a monistic view to a dualistic view. In his theory of the knowledge-creating organization, Nonaka develops his theory of knowledge conversion, that is, how within a group environment, personal tacit knowings become public knowings.

Tacit knowledge is a “personal” or “individual” affair (Nonaka & Takeuchi, 1995, pp. 8, 13) of “direct experience” which is “subjective and intuitive” and “physical” qualitatively (Nonaka & Takeuchi, 1995, pp. 10, 9, 59, 60). There are “cognitive and technical elements” (Nonaka & Takeuchi, 1995, p. 60) of this Japanese view of personal experience and knowing in the world. Some cognitive aspects of tacit knowledge in Nonaka's model are “mental models, such as schemata, paradigms, perspectives, beliefs, and viewpoints” (Nonaka & Takeuchi, 1995, pp. 8, 60, 70). These cognitive affairs are mostly “inexpressible” being “active” and “subjective” (Nonaka & Takeuchi, 1995, pp. 8, 66, 59). Tacit knowledge in the form of mental models is “deeply rooted in action, commitment, and involvement in a specific context” (Nonaka, 1994, p. 16) or “embodied action” (Nonaka, 1994, p. 16). Mental models are how individuals “perceive and define their worlds” (Nonaka & Takeuchi, 1995, p. 60). These mental models, or cognitive schemas, are “working models of the world” (Nonaka, 1994, p. 16). Mental models function as a set of interpretive frames of experience. These interpretive frames allow and constrain habitual visions of the world. The technical aspect consists of “know-how” (Nonaka & Takeuchi, 1995, p. 8).

Tacit knowledge is “inarticulated” (Nonaka & von Krogh, 2009, p. 635) and “not easily visible and expressible (Nonaka & Konno, 1998, p. 42). What people tacitly know is “hard to formalize” and thus, “difficult to communicate or share” (Nonaka & Konno, 1998, p. 42). What people tacitly know is “deeply rooted in individual's actions and experience” (Nonaka & Konno, 1998, p. 42) and in “procedures, routines, commitment, ideals, values, and emotions” (Nonaka & Konno, 1998, p. 42; Nonaka & von Krogh, 2009, p. 636).

For Nonaka, this is the unfolding of the Japanese way (Nonaka & Takeuchi, 1995, p. 27). Experience (the what and hows) is summed up in three Zen Buddhist principles: “Oneness of humanity and Nature” (Nonaka & Takeuchi, 1995, p.27), “Oneness of body and mind” (Nonaka & Takeuchi, 1995, p.29), and the “Oneness of self and other” (Nonaka & Takeuchi, 1995, p.31). Within this cultural matrix or meaning-system of Zen Buddhism, there is a monism, a togetherness, consubstantial almost, of humanity and nature, body and mind as person, and self and other as group. This monistic view consists of what people know tacitly.

But people live-in a public, and explicit world, especially in the world of business. Thus, what is known tacitly must be converted to explicit proposals for getting things done publically. The work of making tacit and hidden knowings, “the articulation of tacit mental models” (Nonaka & Takeuchi, 1995, p. 60), is a process of enlightenment (*satori*), or a work of converting the tacit to the explicit in a public manner. For Nonaka, there are four ways of doing this ((Nonaka & Takeuchi, 1995, p. 62). He calls

them “socialization,” “externalization,” “combination,” and “internalization” (Nonaka & Takeuchi, 1995, p. 62).

In Nonaka’s SECI model, “socialization” is a process of “sharing tacit knowledge” (Nonaka & Konno, 1998, p. 42). Socialization is a concept used to understand the knowledge needed to work in groups. It is about that individuals become members of a group or team, or “learn” to dwell in situations by participating in the place, or situation (Nonaka & Konno, 1998, p. 42; Nonaka, 1998, p. 28; Nonaka & Takeuchi, 1995, pp. 62-64). “Externalization” is about communicating as much as possible what one knows in understandable forms (Nonaka & Konno, 1998, p. 43). Individuals’ points of view are integrated in a group’s worldview (Nonaka & Konno, 1998, pp. 43-44). Externalization is about the process of personal tacit knowledge forming a consensual collaborative way of knowing (Nonaka & Konno, 1998, pp. 43-44). It shows up as the interpretation of personal vocabulary into communal vocabulary (Nonaka & Takeuchi, 1995, pp. 664-67; Nonaka & Konno, 1998, p. 44; Nonaka, 1998, p. 29). “Combination” is about further elaboration of explicit forms of knowing and discussion of conjoint use of things (Nonaka & Konno, 1998, p44); this process, over time, is a formation of an emergent organizational place or communal situation (“Ba”) (Nonaka & Takeuchi, 1995, pp. 67-69; Nonaka & Konno, 1998, p. 45; Nonaka, 1998, , p. 29). “Internalization” is about the process, over time, of developing implicit (tacit) ways of knowing, or doing and saying within an organization becoming taken-for-granted, or intuitive practices and policies (Nonaka & Takeuchi, 1995, pp. 69-70; Nonaka, 1998, p. 29; Nonaka & Konno, 1998, p. 45).

In the case of socialization, this is the basic interactive and situational participatory affairs of engaging in collective living-in, in a group’s lived-in world. Socialization is a process of living-in a shared and silent (perhaps unconscious or taken-for-granted) worldview (a social-cultural matrix) shaping all behaviors, and determining styles of action (Nonaka & Takeuchi, 1995, p. 62).

In the case of externalization, there is the interactive and participatory situation of making the socialized tacit knowings publicly and explicitly known. Situationally, what we tacitly know, to be useful, is through speaking or writing, and using a specific vocabulary, is articulated in forms of slogans, metaphors, analogies, and models. What people tacitly know is best expressed through metaphor and analogy, in the use of “slogans” which work as Zen Buddhist koans in the articulation of the ineffable (Nonaka & Takeuchi, 1995, pp. 66-67; Nonaka, 1998, p. 31). Nonaka (1998) argues that the process of converting tacit knowledge to explicit knowledge is a process which begins in metaphor, moves to analogies, and finally to models (pp. 33-36). “Metaphor expresses the inexpressible” (Nonaka, 1998, p. 31). The metaphor to analogy to model sequence is Nonaka’s (1994) method for converting tacit knowledge to some explicit knowledge form (pp. 20-21). These cultural and linguistic forms are ways of realizing the tacitly known (Nonaka & Takeuchi, 1995, pp. 64-65). The conversion process is “the sequential use of metaphor, analogy, and finally model” (Nonaka & Takeuchi, 1995, p. 66). The process of realizing tacitly known aspects of the world is a process of describing and explaining affairs or things symbolically with metaphor, analogy, and lastly models (Nonaka & Takeuchi, 1995, p. 64). For Nonaka, metaphor affords an understanding of an uncertain situation or thing in terms of something better realized conceptually (Nonaka & Takeuchi, 1995, p. 66-67; Lakoff & Johnson, 1980, p. 5; Pinker, 2007, pp. 238, 243-244). Further conceptual development is by means of analogy which clarifies and harmonizes any ambiguity of metaphor in describing and explaining different concepts by making notice of the same aspects or qualities of the concepts (Nonaka & Takeuchi, 1995, p. 67; Copi, 1986, p. 405). Analogy makes ideas more explicit in a seemingly more solid way so that the final conversion stage can be implemented. This final stage is the creating of a model that best denotes the best conceptualization of the thing (Nonaka & Takeuchi, 1995, p. 67).

In the case of combination, the process consists of realizing, as another interactive situation, an ecology or system of organizationally explicit knowledge (Nonaka & Takeuchi, 1995, p. 67). This ecology results in a “[r]econfiguration of existing information (Nonaka & Takeuchi, 1995, p. 67) into a system of knowledge, an organizational ontology.

In the case of internalization, there is an re-integration of organizationally realized knowledge into the tacit and participatory worldview shared by all. Explicitly realized knowledge is joined to habitual ways of doing and saying, enhancing and changing how things are done. An awareness of what one knows comes in the practiced doing. (Nonaka & Takeuchi, 1995, p. 67-70).

For Nonaka, these methods of knowledge conversion are sites, or fields, of interaction (Nonaka, 1994, p. 20) [later called “Ba” (Nonaka & Konno, 1998)] which present as “ontological levels” (Nonaka &

Takeuchi, 1995, p. 72) wherein different aspects of a knowledge object are realized. The participatory and interactive Gestalten of socializing which presents knowing as a “sharing of members’ experience and mental models” (Nonaka & Takeuchi, 1995, p. 71), of externalizing which realizes knowing as “using appropriate metaphor and analogy ... to articulate hidden tacit knowledge” (Nonaka & Takeuchi, 1995, p. 71), of combining which forms an knowledge ecology from a web of explicit concepts “crystalized’ in various forms (Nonaka & Takeuchi, 1995, p. 71), of internalizing which realizes organized and systematized knowledge in behavior (Nonaka & Takeuchi, 1995, p. 71). As a result, socializing gives “sympathized knowledge”; externalizing gives “conceptual knowledge”; combining gives “systemic knowledge”; and internalizing gives “operational knowledge”. This is Nonaka’s knowledge spiral which is a process of enlightenment (satori) from the personal level to the organizational level (Nonaka & Takeuchi, 1995, p. 72).

There is an integration of self and objects and others in the situation holistically (Nonaka & Takeuchi, 1995, p. 60). This follows Zen Buddhist practice of understanding that the personal self (and what it knows) is one with the collective self (and what it knows) as both are encapsulated by Japanese culture or meaning-systems (Suzuki, 1959). Knowing or experiencing from a personal individual view is knowing culturally, knowing as the meaning-systems allow and restrain. We (personal selves) know according to the cultural matrix, in which we live, encapsulated by what we can and cannot know (Sekida, 1985; Suzuki, 1999; Suzuki, 2002).

Tacit knowledge is not disembodied. It is a process at work within collaborative situations. Nonaka’s perspective on tacit knowledge includes his notions of how this tacit process is structured and the types of situations this process functions. Respectively, these are Nonaka’s SECI model and Ba concepts.

“Ba,” a Japanese word meaning “place” according to Nonaka and Konno (1998, p. 40; Gueldenberg & Helting, 2007, p. 109) becomes, in the Japanese way of understanding knowledge management “a shared space for emerging relationships” (Nonaka & Konno, 1998, p. 40). A Ba, or “interactive field” (Nonaka, 1994, p. 25) is an associative context of behavior and reality; it is “a place” for expressing knowledge (Nonaka, 1994, p. 23; Hawryszkiewicz, 2002, p. 219). Ba, or place, field, frame, or situation, is where people do and say things interactively and intersubjectively. It is the space, as perhaps a Japanese garden, which emerges from the relationships of things, even as it defines the relationships, and how things are known and knowable. There are multiples of Ba, or spaces with different qualities and aspects (Nonaka & Konno, 1998, p. 11). Some are “physical,” others “virtual,” and others “mental” (Nonaka & Konno, 1998, p. 40). Further, some are social and others are symbolic (of meanings). A Ba is a given horizon of meanings or “lived time-space” (Gueldenberg & Helting, 2007, pp. 107, 109-110). But, every Ba is personal and physical, even as experiential space establishes and manifests networks of action and webs of meaning. A Ba is a basis for a “transcendental perspective”, that is, a Ba is a location of possible self-transcendence, or going beyond the confines of one’s personal life-history (Nonaka & Konno, 1998, p. 40); it is the encapsulating of all doings and sayings. A Ba is a place, organizationally, where personal logic integrates with a group’s logic, or worldview (Nonaka & Konno, 1998, pp. 43-44).

The concept of “Ba” (Nonaka & Konno, 1998, pp. 40-41) is a concept of knowledge emergence or levels of enlightenment. The notion of Ba presents an understanding of knowing as a way of “self-transcendence” (Nonaka & Konno, 1998, p. 42). These levels coincide with the four ways of knowledge conversion. But there are multiples of Ba present in everyday experience. A Ba is social place, or space, emerging wherever a person participates interactively with others; a Ba is a situation of possible transcendence, the opening of another horizon within a taken-for-granted frame of understanding. Within a Ba, the tacitly known becomes explicitly realized at a higher level encompassing the tacit as the ground of a now clarified and explicit understanding. The meaning of the tacit is presented in the explicit objects and their qualities directly experienced (Nonaka & Konno, 1998, pp. 42-45).

Even as the Ba encapsulates, it is shared space among individuals and it is a “common place” (Nonaka & Takeuchi, 1995, p. 85; Nonaka & Konno, 1998, p. 43). This is the ground of communication; the sharing of frames of meanings (Nonaka & Konno, 1998, p. 41), which are anchored in physical and logical situations, as ways and means of discourse, or places of language. As places of language, they are locations of meaning (Nonaka & Konno, 1998, p. 40). A Ba is ontological space, a structure of ways of dealing with known objects, and a structure (structuring) of

known objects. A Ba is a field, context, situation where things and people exist; it is of living, or group's lived-world (Gueldenberg & Helting, 2007, p. 118). A Ba is a "phenomenal place" (Nonaka & Konno, 1998, p. 41), where persons and things exist together in an environment of action.

According to Nonaka and Konno (1998), there are four kinds of Ba: the "originating Ba" (p. 46), the "interacting Ba" (p. 47), the "collaborative Ba" (p. 47), and the "exercising Ba" (p. 47). The originating Ba is the space of being in a place, a *lebenswelt*, which is formed in the actual being together physically dealing with others. We interrelate with one another, therefore we are (Nonaka & Konno, 1998, p. 46). The interacting BA is that space, the place created in conversations and conjoint establishing of common vocabularies and meanings. We speak the same language, vocabulary, therefore we are. Individual mental frameworks are joined into a common group schema (Nonaka & Konno, 1998, p. 47). The exercising Ba is the use of commonly explicit knowings folding the knowings back into the established group schemas, or group processes of doings and sayings. We act together as a group, therefore we are. This is an organizational Ba where innovative knowledge can emerge (Nonaka & Konno, 1998, pp. 47-51). An ecology or *basho* emerges at the next level (Nonaka & Konno, 1998, pp. 51-52). Thus, knowledge emerges from the structures of personal and group, or collaborative, integrative interaction wherein the knowledge tacitly has been embedded (Nonaka & Konno, 1998, pp. 40-41).

3.1 Nonaka's taxonomy of tacit knowledge

Japanese approach or Zen Buddhism
Inarticulate and invisible
Direct, sensory, physical and personal experience
Indwelling as embodiment
Taken-for-granted mental models, beliefs, perspectives
Intuitions and implicit rules of thumb, subjective insights, hunches
Rooted in actions, procedures, routines, commitments, ideals, beliefs
Uses symbols, analogies, and metaphors for expression
Dimensions; cognitive and technical
Knowledge spiral: SECI
BA: existential, experiential, reflective, phenomenal

4. KM'S PERSPECTIVE ON TACIT KNOWLEDGE

Tacit knowledge is the taken-for-granted frames and cognitive models which we use (or they use us) to perceive and think about and act in everyday situations. Mostly, we don't think much, if at all, about the things we do and say, we just do and say things. Because we have spent much time acquiring our mental models and frames, and because we have lived with and through them, they present only in our habitual ways of doing and saying things, of interacting with others and things in the world. They are, in most cases, the basis for our idiosyncratic takes on the world. They run silent and deep in our daily lives. These silent habits of knowing configure everything naturally in meaningful ways. O'Brien (1981) gives a very good novelistic description of tacit knowledge without using the term in his description of the "nautical mind" (pp. 80-81). Tacit knowledge has two dimensions; the cognitive and the technical; the cognitive consists of "beliefs, ideas, and values (cognitive scripts) that are often taken for granted" (Insch, MacIntyre & Dawley, 2008, p. 563; Alavi & Leidner, 2001, p. 110); the technical aspect refers to "know-how, or informal, hard-to-pin-down skills" (Insch, MacIntyre & Dawley, 2008, p. 563; Jennex, 2007, p. 3; Desouza, Awazu & Wan, 2006, p. 36). Some add a third dimension: the social (Insch, MacIntyre & Dawley, 2008, p. 563).

The term and concept "tacit knowledge" is a mantra of the knowledge management literature; usually, there is also a customary 'bow' to either Nonaka or Polanyi. However, many writers in the knowledge management tradition do not define tacit knowledge. There is an assumption that the terms and concept are communal property of the KM community of discourse (Desouza & Evaristo, 2004, p. 85). To work at understanding, at the level of discourse, the conceptualization of "tacit knowledge" is also to work at understanding a conceptualization of "knowledge and its theoretical ground. According to Alavi and Leidner (2001); "...knowledge is information possessed in the mind of individuals. It is personalized information...related to facts, procedures, concepts, interpretations, ideas, observations, and judgments" (p. 109). Davenport and Prusak (2000) argue that knowledge, inclusive of tacit knowledge, is a system, or set of frames, of cognitive schemas which order and organize approaches

for understanding the affairs of experience. These frames, and this affair called knowledge, are rational and intellectual creations as interpretive organizers of everyday experience (p. 5). These are “mental structures” (Russo & Schoemaker, 2002, p. 21), which condition “how we see the world” (Schoemaker & Russo, 2001, p. 133).

In the knowledge management literature, tacit knowledge is described as either in the head, or in the social practices people engage in. Tacit knowledge is “ingrained at a subconscious level” (Bergeron, 2003, p. 17), or “what people possess in their minds” or “heads” (Ceric, 2003, p. 20; Eisenhart, 2001, p. 49; Norman, 1988, pp. 52-63). It is “subjective” (Rao & Babu, 2002, p. 116; Pai, Miller, Honavar, Wong, & Nilakanta, 2002, p. 267; White & Sutton, 2002, p. 314). Tacit knowledge is “experience, intuitions, [and] beliefs” (Pai, Miller, Honavar, Wong, & Nilakanta, 2002, p. 267; Tschetter & Tschetter, 2010, pp. 46, 49). Tacit knowledge consists of “insights, intuitions, and hunches” (Becerra-Fernandez, Gonzalez & Sabherwal, 2004, p. 20). There is a sense that it is an unconscious knowing, or unaware knowing, even as this knowledge underlies, or is background to, what and how one does things. Tacit knowledge presents itself as “context-specific knowledge” (Tiwana, 2002, p. 45), or is grounded in experience (Davenport & Prusak, 2000, pp. 71, 81; Detlor, 2002, p. 196; Jentzsch & Prekop, 2002, p. 109; Frappaolo, 2006, p. 108). Tacit knowledge is an affair of understanding and interpretative of experience (Cook & Brown, 1999, p. 390; Bantista-Fries, Romero-Gonzalez & Morgan-Beltran, 2012, p. 50), handicapped by its lack of explicitness and constant inability to be straight-forwardly “communicated” or “articulated” (Argote, McEvily & Reagans, 2003, p. 574; Goffin & Koners, 2011, p. 301).

A community of practices is a commons of habits of working to accomplish organizational goals. A practice is a normal and usual way of doing something within an organizational situation lived-in with other people. Tacit knowledge is communal knowledge, collectively known in everyday activities, qualities of the “collective social mind” (Brown, 1998, p. 167; McInerney, 2002, p. 1013). Tacit knowledge is based in behavior and personal practical skills or “know-how” which is “inarticulate” (Insch, MacIntyre & Dawley, 2008, pp. 561-562), by which work is done (Brown & Duguid, 2000, p. 97). What people know is what people do. Tacit knowledge is “embodied in us, in our ways of thinking” (Brown, 2005, p. 56); it lives “between people, in communities of practice” (Brown & Duguid, 2000, pp. 97, 129, 141; McInerney, 2002, p. 1015; Brown, 2005, p. 61). Tacit knowledge resides in work habits, formal and informal procedures in place regulating the activities and events of the workplace (Brown, 1998, pp. 162-163). People do work within “communities of practice” (Bergeron, 2003, p. 49; Correa de Silva & Agusti-Cullell, 2003, p. 131). A community of practice presents practitioners’ worldview as an ontology of affairs lived-with and a set of methods lived-by; they are the “capabilities” of group living (Leonard-Barton, 1995, p. 4).

4.1 KM’s taxonomy of tacit knowledge

Individual, personal or organizational, collective orientation
 Dimensions: cognitive, technical, and social
 Difficult to express and communication or explain
 Embodied (personal, in the head) frames, perceptions, beliefs, values
 Grounded in individual, collective experience
 Personal competencies or skills
 Personal actions or performance
 Exists as knowledge in the head, mental maps, cognitive schemas, mental symbols, individual brains, theories-in-use, or cognitive preferences, know-how, heuristics
 Personal subjective knowledge or minds of knowers
 Practices and community of practice
 Collective mind or organizational culture or climate

5. CONCLUSION

Tacit knowledge is a relative term and idea. As a result, this paper has suggested and articulated that there are three major conceptions of tacit knowledge in the knowledge management (KM) literature. One of the basic concepts is Polanyi’s (1966). Polanyi clearly articulates a view of tacit knowledge, as I understand it, that is referenced a great deal, but not generally understood (not that this essay represents a good understanding). Nonaka (in Nonaka & Takeuchi, 1995) has also articulated a view of tacit knowledge, albeit grounded in Zen Buddhism, a frame ignored by all but a few; Nonaka’s sense is clouded by his ideas of Ba and the SECI model, which this paper tries to work out. Finally, the

KM literature itself presents a notion of tacit knowledge, sometimes tied to Polanyi and sometimes based in Nonaka. In the KM literature, tacit knowledge is based in psychological view, i.e., mental models, or in a sociological view, i.e., practices and communities of practice. But, this perspective of knowledge management is not as coherent of understanding tacit knowledge, as are Polanyi's and Nonaka's ideas.

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