

An Examination of Knowledge in Nonaka's Theory in terms of the TEAM Linguistic Framework and in relation to Organization Studies in the West

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Abstract

This paper aims to examine knowledge in Nonaka's theory of organizational knowledge creation in a theoretical context of organization studies in the West. In so doing, TEAM linguistic theory has been utilized as a framework to analyze Nonaka's theory and its ontology in particular. In addition, Nonaka's theory, focusing on knowledge, has been considered, examined and compared with the literature of organization studies in the West. The analysis has revealed that from these perspectives, Nonaka takes a dualistic stance of both epistemology (tacit and explicit knowledge) and ontology (individuality and collectivity) while the traditional argument of knowledge in organization studies in the West is fundamentally narrow and, epistemologically and ontologically, monistic in its theoretical position.

Key words : Knowledge, Nonaka's theory, Epistemology, Ontology, TEAM linguistic theory

1. Introduction

This paper aims to examine knowledge in Nonaka's theory of organizational knowledge creation in relation to a theoretical context of organization studies in the West¹. In so doing, firstly, TEAM linguistic theory will be introduced, which is utilized as a framework to analyze Nonaka's theory and its ontology in particular. Secondly, Nonaka's theory will be considered, examined and compared with extensive related literature; namely, the literature of organization studies in the West in terms of epistemology and ontology. Finally, knowledge in Nonaka's theory, focusing on its ontology, will be examined in terms of the TEAM linguistic framework.

2. Analytical framework

In this paper, TEAM linguistic theory and

its notions are utilized as a framework to analyze Nonaka's theory and its ontology in particular. A number of notions of the TEAM linguistic approach developed by Nishibe (1996) are introduced. In paying attention to the meaning of language and at the same time acknowledging the multiplicity of that meaning, Nishibe (1996) divides the meaning function of language into four; namely, functions of (T) *transmitting* meaning, (E) *expressing* meaning, (A) *accumulating* meaning, and (M) *measuring* meaning.² Figure 2-1 shows the TEAM linguistic structure, which puts the four meaning functions of language into a four-fold matrix framework. This matrix is coordinated by axes, one regarding *explicitness / implicitness* and the other regarding *difference / identity*.

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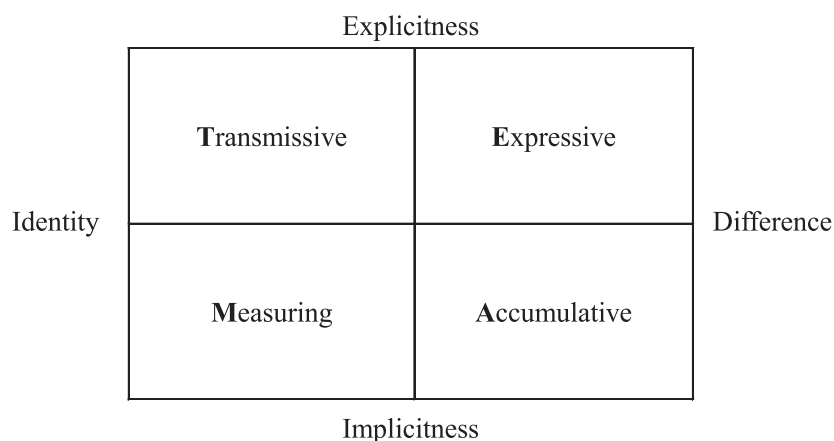


Figure 2-1: TEAM structure: Linguistic meaning functions and the structure of language (Source: Nishibe, 1996)

An explanation of the TEAM structure will now be made. For example, if I say to a lady "I love you", I *explicitly* 'express' my feeling (meaning) towards her by using language. This has a characteristic which is *differentiated* from the others because someone may use the words 'fancy', 'like' or 'crazy about' instead of 'love' when he expresses such a feeling. This is the *expressive* function of language (the quadrant of explicitness-difference in Figure 2-1). I do so because I want to 'transmit' my feeling of love (the meaning) to her in an *explicit* form of spoken language. This is possible because there is an *identified* horizon or domain between her and me to understand the meaning of the words. In other words, the language allows her to understand my explicit spoken words. This is the *transmissive* function of language (the quadrant of explicitness-identity in Figure 2-1). Moreover, the sentence "I love you" I used is also based on my own implicitly 'accumulated' experience, which is *differentiated* from others (the *accumulative* function of language) (the quadrant of implicitness-difference in Figure 2-1). For example, I had probably been impressed by American films and the phrase has

been accumulated for use in certain circumstances. Or I had some previous experience of love affairs. These are different experiences from other people that led me to say to her "I love you" on this occasion. That is say, my exposure to Hollywood films and previous love affairs account for this. However, at the same time, language can be 'measured' by comparing it to others (the *measuring* function of language) because language is made up of an *implicit* value system, which can be *identified* (or shared) with others who can use the language (the quadrant of implicitness-identify in Figure 2-1). That is, she may measure or judge that my expression is, for example, too 'straight' or very passionate. According to Nishibe (1996), language is mainly composed of these four meaning functions and sustained when the four functions are maintained in a balanced way. Taking into consideration that economic activities of a company, for example, inevitably rely on the linguistic activities of members of the company, TEAM linguistic theory, which focuses on the human activities of *transmitting*, *expressing*, *accumulating* and *measuring* linguistic meaning, should help grasp a better understanding of them. The

four-fold matrix framework, coordinated by axes of the *explicitness / implicitness* and the *difference / identity*, is mainly used as the analytical framework in this paper.

In order to examine human behaviour in general and activities associated with human 'knowledge' in particular, in the organizational context, it is also important to link the TEAM

linguistic structure with the *individual-collective relationship (ontology)*. Figure 2-2 provides this linkage. An assumption is made by Nishibe (1996) that when the (TEAM) meaning structure of language is transferred into the human structure of character; namely, the individual-collective relationship, a gap occurs like Figure 2-2.

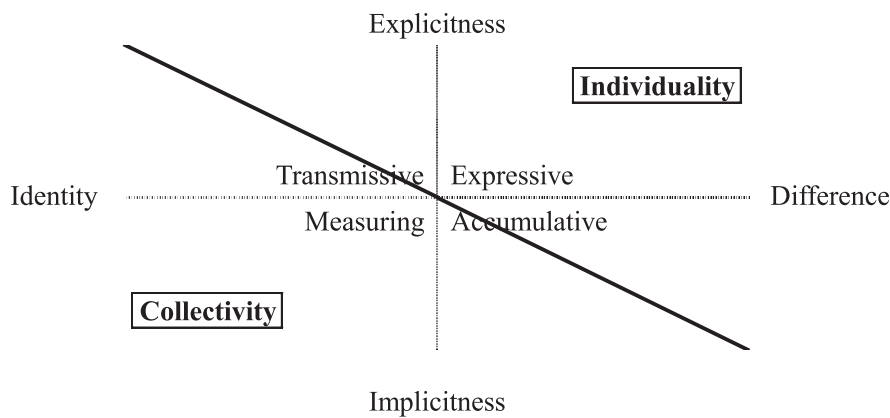


Figure 2-2: Individual-collective relationship (ontology) within the TEAM linguistic structure (Source: Nishibe, 1996)

For example, the term 'individuality' is characterized not only as *differentiated* from others, but also as *explicit*. In other words, it is marked primarily as the expressive function of the TEAM structure. On the other hand, the term 'collectivity' is characterized not only as *identified* with others, but also as *implicit*. Likewise, it is marked primarily as the measuring function (providing latent value). This meaning is that individual managers, for example, play a crucial role in decision making processes of product creation mainly by 'expressing' their own ideas, which are collectively 'measured' based on existing latent value.

3. Examining traditional epistemology in the West

The dictionary definition of epistemology is 'that division of philosophy that investigates the origin and nature of knowledge' (Spender, 1998). The major breakthrough of Nonaka's theory of organizational knowledge creation has to do with this epistemological dimension (Magalhães, 1998). Although the epistemology of Nonaka's theory can be, as will be expanded in chapter 4, differentiated from traditional Western epistemology, it is pertinent to critically review the Western tradition of epistemology in organization studies. This will then enable Nonaka's epistemological assumption to be better cross-examined in relation to the Western tradition.

One of the most influential theorists who devoted a great deal of time to working on organization theory in terms of epistemology was Herbert Simon (see e.g. 1976).³ His work was greatly influenced by the development of the computer and cognitive science and he (1976) viewed an organization as an 'information-processing machine' in his scientific theory of problem solving and decision-making. Simon believed that because human capacity is inherently limited, often referred to as 'bounded rationality', the organization can expand its rationality by systematically but simply dividing work into specialized boundaries, and efficiently developing communication systems. Moreover, he argued that perception and imagery could be handled in terms of 'prepositional, digital encoding' (Goldman, 1986, p 254) and thus assumed that all information can be *codified*. For Simon, implicit knowledge, such as nonlinguistic mental processes and behavioral knowledge, is nothing more than 'noise'⁴ (Nonaka & Takeuchi, 1995) and he implied that in terms of epistemology, there is only one type of information (or knowledge) and therefore no difference exists between knowledge, information and data.

A number of Japanese authors (see e.g. Saeki, 1985; Nonaka & Takeuchi, 1995; Takeuchi, 2001) have suggested that the modern rational view of knowledge propounded by Simon, which has been dominant in the field of organization studies, is rooted in the work of Rene Descartes (2000). Takeuchi (2001) claims that Western philosophy has a *tradition of dualism* which separates 'the subject who knows (*the knower*)' from 'the object that is known (*the known*)', also *mind* and *body*, and *reason* and *sense*. Takeuchi also claims that Descartes considered that 'true' knowledge is

knowledge that is acquired only through *reason* or *mind* and therefore knowledge that can be acquired though *sense* or *body* is ignored. The kind of thinking which places emphasis on only reason (and mind) is called *rationalism*. Another influential Japanese thinker, Saeki (1985) lends support to this argument, and states that although scholars through the ages from the Greek civilization to those in the middle ages attempted to strike a balance between *sense* and *reason* in their epistemology, modern scholars in the West ignored *intuitional ability*, which is related to sense and body, emphasizing *logical ability*, which is related to reason and mind. This modern Cartesian-like rationalist view of knowledge is called *monist epistemology* because it acknowledges only one dimension of knowledge of the dualism (see Spender 1996, 1998). These arguments have been supported by Western theorists such Spender (1998) who argue that there are the prevailing western academic conventions, which assume a separation of the knower and the known, and focus on objects rather than our perceptions. In the same context, Spender (1996) argues that a number of organizational theorists have built their theories by adopting a Cartesian-like rationalist view of knowledge, which suggests that Cartesian-like rationalism has been the mainstream of Western epistemology and has had and continues to have a major influence on organizational theorists in the West.

Importantly, the Cartesian-like rationalist view of knowledge can only correspond to the part of *explicitness* in the vertical axe of *implicitness/explicitness* in the TEAM linguistic framework in chapter 2 (see **Figure 2-1**). This is because the perspective, as mentioned earlier, tends to ignore the *implicit* dimension of knowledge (acquired through *sense or body*)

as 'noise'.

Recently, a number of European and American academics engaged in research related to organization theory (see e.g. Spender, 1998; Swan et al., 1999; Swan et al., 2000) have claimed that this kind of Cartesian-like monist epistemology, mentioned earlier, is in some respects problematic in the organizational context and this is so because the Cartesian-like rationalist view fails to take into account the significance of pre-existing organizational structures, norms and cultural values (Swan et al., 1999). It is also problematic because the epistemology views a human being as rational and cannot therefore shed light on non-rational activities such as *innovation* and *trust* in the organization (see Swan et al., 1999). Finally, it poses problems because the processes through which knowledge is created within an organization cannot be explained (see, Spender, 1998). As will be argued in the next chapter, Nonaka gives attention to both sides of the contrasting epistemological positions within the two categories.

4. Examining the epistemology of Nonaka's theory

4. 1 Definition of knowledge

It is evident from ongoing debates within the literature that 'knowledge' as a term is intrinsically ambiguous and equivocal.⁵ In spite of the complex nature of knowledge, the western traditional definition accepts that it represents a *justified true belief*, which is a concept that was first propounded by Plato in his 'Meno, Phaedo, and Theaetetus'. Whilst Nonaka (Nonaka & Takeuchi, 1995) has taken different epistemological assumptions from those employed by western orthodox theorists of organization such as Simon (1976), he does, in principal, employ the same definition of

knowledge as a 'justified true belief' within the western traditional view.

The difference in the definition of knowledge between Nonaka and the Western tradition is in its emphasis. Nonaka (1994; Nonaka & Takeuchi, 1995) claims that the argument of the traditional epistemology in the West focuses on *truthfulness* and that a personal *belief* and the *justification* of knowledge should receive more emphasis when translated to the organizational context. In the case of Nonaka, the emphasis is on dynamic and subjective aspects, rather than the static and objective nature of a human being, and claims that a personal 'belief' and the 'justification' between members in an organization play crucial roles in creating knowledge. In this respect, Nonaka also suggests that too much emphasis on 'truthfulness' reduces creative activities in an organization.

Recently, the emphasis on the humanistic dimension of a personal 'belief' and the communicative dimension of the 'justification' of knowledge in the organizational context is supported by researchers in the UK such as Galliers & Newell (2000) and Blackler (1995). Galliers & Newell (2000) argue that a 'belief' is, by definition, a human phenomenon and that in the organizational context 'truth' is socially constructed (and justified) through interaction between individuals and groups. Blackler (1995) emphasizes 'knowing as a process' in an organization, pointing out the situated, provisional and reflexive nature of knowledge. What they emphasize is, that knowledge in the organization is related to commitment, human action and is also context-specific, which is consistent with Nonaka's theory.

4. 2 Two types of knowledge

Importantly, Nonaka (1991; 1994; Nonaka & Takeuchi, 1995) assumes that there are two types of knowledge; namely, *tacit* and *explicit knowledge*.⁶ According to Nonaka (see 1991, 1994; Nonaka & Takeuchi, 1995), *explicit (or codified) knowledge* refers to knowledge that is transmittable in formal, systematic language. In other words, it can be expressed in words, numbers and diagrams, and shared in the form of data, scientific formulae, manual

and the like. This kind of knowledge is generally equated to information, which was assumed by Simon (1976). On the other hand, *tacit knowledge* is highly personal and context-specific, and therefore, it makes it difficult to communicate or share with others and therefore, it can only be acquired and exchanged through non-verbal communication, such as experience and observation.⁷ Table 4-1 shows features of two types of knowledge.

Table 4- 1 : Two types of knowledge (Author: Nonaka & Takeuchi, 1995)

Tacit Knowledge (Subjective)	Explicit Knowledge (Objective)
The known Body Sense (Knowledge of experience) Simultaneous knowledge (Here and now) Analog knowledge (Practice)	The knower Mind Reason (Knowledge of rationality) Sequential knowledge (There and then) Digital knowledge (Theory)

This notion was first defined by Michael Polanyi (see 1966) who emphasised more tacit knowledge, than explicit knowledge, claiming 'We can know more than we call tell' (1966, p 4). What the author meant by this is that knowledge as expressed in words and numbers, is explicit knowledge, and thus so to speak, covers only the tip of the iceberg of the entire body of (both tacit and explicit) knowledge. Whilst Polanyi argued the contents of tacit knowledge from a philosophical context, Nonaka expands the theory of tacit knowledge in a more practical direction (see 1991, 1994; Nonaka & Takeuchi, 1995). In this sense, it can be said that Nonaka takes a *pluralist (or dualist) epistemology* due to the dualistic view of tacit and explicit knowledge, rather than the Cartesian-like monist epistemology which Simon (1976) took,

considering all knowledge to be explicit (which was discussed in chapter 3).⁸ In other words, Nonaka incorporates epistemological positions, *the knower* and *the known*, *mind* and *body*, *reason* and *sense* into his theory by distinguishing between tacit and explicit knowledge (see Table 4 - 1).

Importantly, the distinction between tacit and explicit knowledge is also approximately in line with the distinction between the vertical axe of *implicitness / explicitness* in the TEAM linguistic framework introduced in chapter 2 (see Figure 2 - 1 & 2 - 2).

5. Examining the ontology of Nonaka's theory

In Nonaka's theory, the 'ontological' dimension, which is concerned with the levels of knowledge-creating entities, is as important as the epistemological dimension because Nonaka

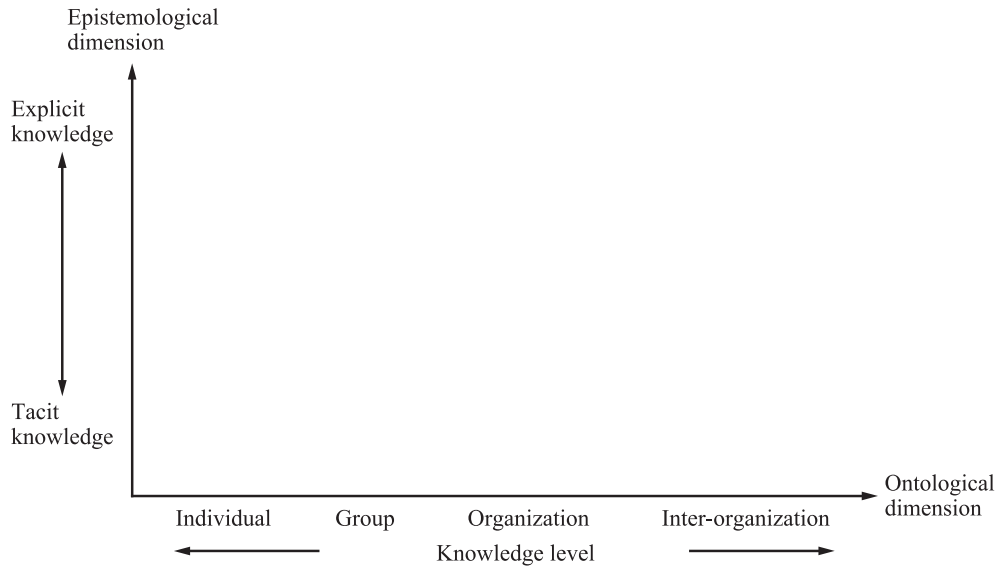


Figure 5-1: Two dimensions of knowledge creation (Source: Nonaka & Takeuchi, 1995)

ka looks at knowledge creation in the context of the organizational activity, rather than of the individual activity. Nonaka (Nonaka & Takeuchi, 1995) differentiates knowledge in an organization into four *entities*; *individual*, *group*, *organizational*, and *inter-organizational*. Figure 5-1 combines these four levels of the ontological with the epistemological dimension (explicit and tacit knowledge).

It suggests that organizational knowledge dynamically moves from a lower (individual) ontological level to higher levels through the interaction between tacit and explicit knowledge (for more explanation, see Nonaka & Takeuchi(1995)).

In relation to the ontological dimension, Nonaka (Nonaka & Takeuchi, 1995) assumes that knowledge is basically *created* by individuals, while it is 'organizationally' *amplified*, *crystallized* and also *internalized* as a part of the knowledge network of the organization. The emphasis placed by Nonaka on individuals as the knowledge-creating entity and its diverse classification of the ontological level have attracted a great deal of critical attention

from a number of western theorists related to organizational knowledge (see e.g. Blackler, 1995; Spender, 1998). For example, Blackler (1995) criticizes Nonaka's approach for being rather traditional because Nonaka claims that knowledge is a specific entity, formed in the minds of individuals, rather than of groups. This criticism is supported by Spender (1996, 1998) who argues that Nonaka's distinction of ontology is narrow and shaky because he dismisses the individual/organizational dichotomy, assuming that only the individual thinks. In contrast to Nonaka, Spender emphasizes the importance of *collective knowledge*, which is defined as social, implicit knowledge, rather than individual knowledge, pointing out the existence of the western academic tradition, such as the work of Durkheim and Halbwachs in sociology, that emphasizes *social knowledge* (see e.g. Durkheim, 1964; Halbwachs, 1992).

In applying the TEAM linguistic framework introduced in chapter 2 (see Figure 2-2) to the arguments on the different emphasis in ontology between Nonaka and the

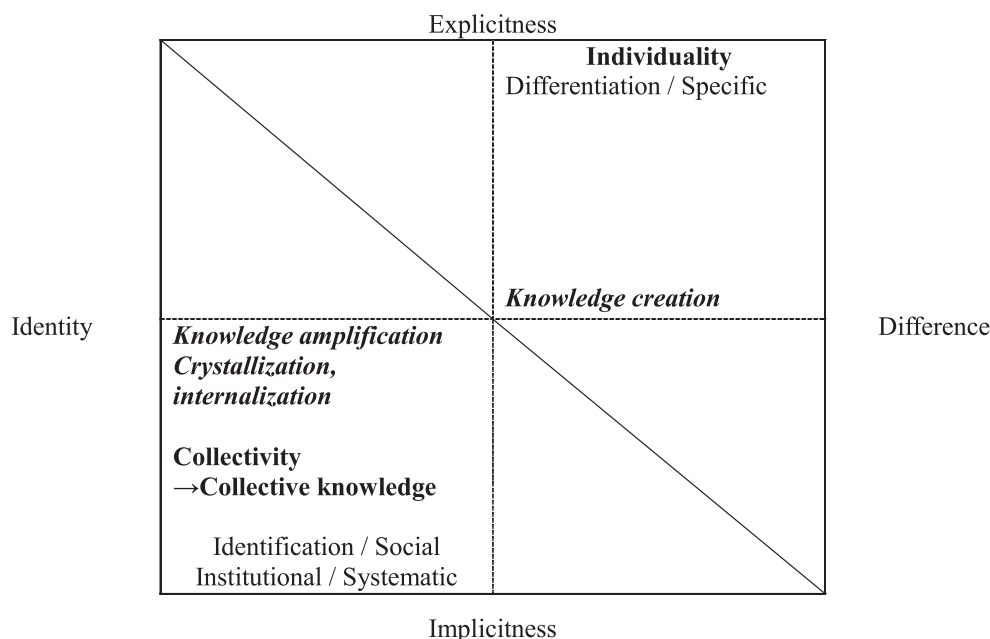


Figure 5-2: Ontological dimension of the linguistic framework and knowledge creation (Source: Author)

western organizational theorists such as Spender and Blackler the results have been most interesting (see Figure 5-2).

Figure 5-2 suggests that it is, as Spender (1996, 1998) and Blackler (1995) pointed out, crucial to pay attention to the implicit, collective knowledge because it constitutes the institutional framework of an organization as a (systematic) knowledge base, which presents and develops latent organizational capacity. This is in line with Nonaka's idea that knowledge is organizationally *amplified, crystallized* and also *internalized*. However, since *knowledge creation* is an *expressive* activity that creates new knowledge (new words), that is, differentiates it from existing knowledge in a specific, actual context, it also has to lie heavily on an individual activity. This is in line with Nonaka's ideas of *knowledge creation* based on individual creativity. In short, the knowledge activity in an organization has a *dualistic* nature, which includes not only an institutional, identified dimension but also a

specific, differentiating dimension as Nonaka assumes. This analysis in turn, suggests that in the dimension of new knowledge creation, Nonaka's assertion of the emphasis on individuals as *creating* subjects is valid in terms of the linguistic perspective and shows the theoretical limitations of Spender and Blackler.

6. Conclusions

This paper has examined Nonaka's theory, focusing on its epistemology and ontology, in relation to the literature of organization studies in the West and in terms of the TEAM linguistic framework. The analysis has revealed that from these perspectives, Nonaka takes a dualistic stance of both epistemology (tacit and explicit knowledge) and ontology (individuality and collectivity) while the traditional argument of knowledge in organization studies in the West is fundamentally narrow and, epistemologically and ontologically, tends to be monistic in its theoretical position.

Notes

- 1 Throughout this research the term *West* is referred to as post-industrialized countries of European origin such as North America, Western Europe, Australia and Canada.
- 2 It may be easy to understand a function of 'measuring meaning' as of 'sharing and providing latent value'.
- 3 For a brief review of organization theory on rationalism including Simon, see Reed (1996).
- 4 Nonaka (Nonaka & Takeuchi, 1995) claims that in order to place too much emphasize on the logical aspect of decision-making, Simon ignored implicit knowledge as 'noise'. The word 'noise' possibly means things useless in this context.
- 5 The history of philosophy since the classical Greek period can be regarded as a never-ending search for the meaning of knowledge. Nonaka critically reviews philosophical debates regarding knowledge in the Western historical context, see Nonaka & Takeuchi (1995).
- 6 The above distinction between tacit and explicit knowledge is equivalent to Rye's famous distinction of 'knowing how' and 'knowing what' (Nahapiet & Ghoshal, 1998). Spender (1996), however, suggests that the notion of tacit, rather than know-how, is richer because it can explain a post-Freudian psychological dimension that goes beyond conscious knowledge and into the sub- and pre-conscious modes of knowing.
- 7 The assumption made by Nonaka is that there are two dimensions to tacit knowledge, the first being the *technical dimension*, which covers concrete know-how, crafts, and skills that apply to specific contexts, while the other dimension of tacit knowledge is a *cognitive dimension*, which consists of beliefs, perceptions, ideals, values, emotions and mental models. See Nonaka & Takeuchi (1995).
- 8 More recently, apart from Nonaka, these definitions have been widely cited within the literature of organization studies related to knowledge not only in the USA, but also in European countries (see e.g. Nahapiet & Ghoshal, 1998; von Krogh, 1998; Seufert et al, 1999; Baumard, 1998; Lam, 2000; Swan et al., 2000; Robertson et al., 2000; Johannessen et al, 2001; Walsham, 2001).

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