In Search for a Theoretically Firmer Epistemological Foundation for the Relationship Between Tacit and Explicit Knowledge

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Abstract. Tacit knowledge has become one of the most used buzzwords in many scientific areas, especially in the area of knowledge management, during the past twenty years. In the mainstream of contemporary KM literature the concept of tacit knowledge has been brought in a relatively rough way alongside the traditional conception of knowledge (explicit knowledge) without further analysing the theoretical coherence of the resulting epistemology. Moreover, tacit knowledge is usually defined only vaguely as "knowledge difficult to articulate" as opposed to articulate, explicit knowledge. These factors have led to puzzling or even internally contradictory epistemological views. We critically analyse the predominant epistemological views in the knowledge management literature from the theoretical perspective. We outline a theoretically firmer epistemological model based on Polanyi's original conception of tacit knowledge. We claim that although knowledge management is relatively new scientific area, its roots should be firmly grounded in the philosophical problems concerning knowledge if it is expected to present credible theories that could support knowledge management practices.

Keywords: epistemology, explication, explicit knowledge, Polanyi, tacit knowledge, theory of knowledge

1. Introduction

For over two decades tacit knowledge and its relation to explicit knowledge have been widely discussed topics in the fields of management studies, information system science and particularly in knowledge management (KM). In the 1990's the concept, originally adopted from Polanyi's theory of knowledge, became related in the KM literature to the widely supported claim that organizations could achieve competitive advantages by using effectively their unique knowledge (see e.g. Nonaka and Takeuchi 1995). As a result, the focus of KM literature shifted from explicit forms of knowledge to softer and more complex resources of knowledge that were not stored in information systems but held in human minds. Since then hundreds of scientific papers and reports have presented possible procedures, models and theories for making tacit knowledge representable by converting it to explicit knowledge. The innermost aim of these suggestions is to harness valuable personal understanding and insights to common benefit in organizations.

However, analysis of epistemic views discussing the relation between tacit and explicit knowledge, and particularly the ones that stress the importance of making tacit knowledge explicit, shows that the concept is often used in inconsistent, even misleading ways. According to Cowan et al (2000), very often the meaning of the concept itself remains literally tacit. Various authors (e.g. Grant 2007; Wilson 2002; Tsoukas 2003) have argued that the fundamental content of the concept has been misinterpreted. This suggests that the subject area is still inadequately studied.

Conceptual clarity is not important only from the perspective of internal theoretical consistency of KM; KM is a multidisciplinary field of science, which means that it should communicate with other relevant fields of science. This naturally becomes difficult if central concepts adopted outside the field are redefined. Instead, theoretical statements from different disciplines should refer to the same set of phenomena (Bunge 1967).

The focus of KM is evidently on the management and use of knowledge, which means that the area is above all practical. In this sense it may seem doubtful to introduce profound epistemological considerations to the practices of the field. However, the moment we begin to discuss *theories of knowledge creation* and *explication of tacit knowledge* we cannot avoid epistemological consideration because we have to know what we are theorizing about; from the scientific perspective the problem is significant because theories based on vague concepts are themselves vague and hence close to meaningless.

Reference this paper as: Virtanen, I. "In Search for a Theoretically Firmer Epistemological Foundation for the Relationship Between Tacit and Explicit Knowledge" *The Electronic Journal of Knowledge Management* Volume 11 Issue 2 (pp118-126) available online at www.ejkm.com

The question about the relationship between tacit and explicit knowledge is important because it lies in the very heart of the KM theory. Although Nonaka and Takeuchi's original theory has been revised and modified (see e.g. Nonaka and Peltokorpi 2007), the epistemological foundation (namely the classification of knowledge into tacit and explicit) of their original theory has gained a dominant role as the basis for epistemology in the KM theory (Maasdorp 2007; Stacey 2001). Moreover, since the publication of Nonaka and Takeuchi's theory the epistemological distinction between tacit and explicit knowledge has been so influential that even the whole field of KM has been defined basing on it. For example, according to different authors KM means

> *"…systemic and organizationally specified process for acquiring, organizing, and communicating both tacit and explicit knowledge…" (Alavi and Leidner 1999: 6);*
>
> *"The identification, optimization, and active management of intellectual assets, either in the form of explicit knowledge held in artefacts or as tacit knowledge possessed by individuals or communities." (Snowden 2002: 63);*
>
> *"…the formalized, integrated approach of managing an enterprise's articulated and tacit knowledge assets." (Capeda-Carrión 2006: 34).*

Theories can be considered as a systemization of practice, and as such they serve as a framework for making sense of the subject area. Respectively, indefinite theoretical frameworks may cause wider problems for the practices of the field by directing research to wrong lines. For example, technology developed to mine tacit knowledge of the users is of little value if it is unclear what exactly should be mined. Grant and Qureshi (2006) remark that many KM projects have stated as their aim the conversion of tacit to explicit knowledge, and storing and sharing it by developing proper ICT-systems for the purpose. These projects, however, often have had very limited success (Grant and Qureshi 2006). As Grant (2007) suggests, this might have very negative effects on organizations.

Tacit knowledge is usually defined simply as "knowledge difficult to articulate" or "unexpressed knowledge" as opposed to articulate, explicit knowledge (e.g. Nonaka and Takeuchi 1995; Baumard 1999; Steward 1997).We argue that one key factor behind the conceptual vagueness of the concept of tacit knowledge is the lack of profoundly studied epistemological foundation of the relation between tacit and explicit knowledge. Generally, the meanings of theoretical concepts are determined by the scientific theories in which they occur (Tuomela 1973). Accordingly, to attain a better theoretical understanding of tacit knowledge and its relation to explicit knowledge we have to go back to Polanyi's epistemology—and not just for picking up one concept but to assess the theory as a whole because not only the expression providing a definition of the concept but that entire theoretical context signifies the concept to be defined (Tuomela 1973).

We claim that Polanyi's theory has not been taken into account as a whole in the epistemological foundations upon which the theories of application of tacit knowledge rest--despite the fact that Polanyi's theory is mentioned and referred basically by every author. The concept has been brought alongside with the traditional conception of knowledge, which leads to theoretical confusion as will be shown. We critically analyse the two epistemological theories (knowledge as tacit and explicit categories; knowledge as spectrum) that seem to have wide influence in the contemporary KM literature. Based on Polanyi's epistemology, we sketch an epistemological model that aims to conceptual clarification of tacit and explicit knowledge and the relationship between the two. We examine in this work the components of which different conceptions of knowledge consist in order to compare them and to assess their internal consistency. The aim of this work is to point some flaws in the mainstream epistemic view of KM and present more coherent epistemological model, still based on Polanyi's theory.

2. Epistemologies of KM literature–how Polanyi's theory has been interpreted

Based on the foundations of positivist epistemology, the majority of the contemporary knowledge literature develops typologies that distinguish between different types of knowledge (Hislop 2005). The most common distinction, and also the one that we are interested in, is between tacit and explicit knowledge. This view can be considered significant because the most cited authors of knowledge management and intellectual capital literature[1] (e.g. Nonaka and Takeuchi 1995; Davenport and Prusak 1998; Steward 1997) embrace it, and many

[1] According to Serenko and Bontis' (2004) meta-review of knowledge management and intellectual capital literature that surveyed all citations of the topic (about 60 publications in total) in three major knowledge management journals (Journal of Intellectual Capital, Journal of Knowledge Management and Knowledge and Process Management.

authors after them have adopted it (e.g. Johannessen et al 2000; Kikoski and Kikoski 2004; Seidler-de Alvis and Hartmann 2008). The tacit/explicit distinction came to prominence in KM literature through the work of Nonaka and Takeuchi's theory of knowledge creation (Mooradian 2005). Nonaka and Takeuchi (1995: viii) express the foundation of their epistemology clearly:

> *"In this book we classify human knowledge into two kinds. One is explicit knowledge, which can be articulated in formal language including grammatical statements, mathematical expressions, specifications, manuals and so forth. This kind of knowledge thus can be transmitted across individuals formally and easily. … However, we shall argue, a more important kind of knowledge is tacit knowledge, which is hard to articulate with formal language. It is personal knowledge embedded in individual experience and involves intangible factors such as personal belief, perspective, and the value system. "*

This view treats (explicit) knowledge in a traditional way, namely defining it as justified, true belief. For example, Nonaka and Takeuchi (1995: 58) state: "In our theory of organizational knowledge creation, we adopt the traditional definition of knowledge as 'justified true belief.'" A fundamental assumption that this view makes is that (explicit) knowledge is objective and discrete entity (Hislop 2005). As tacit knowledge is seen convertible into explicit knowledge, the most crucial KM process is to identify the sources of significant tacit knowledge and codify that tacit knowledge to explicit (Nonaka and Takeuchi 1995; Steward 1997; Kikoski and Kikoski 2004).

However, this view has some theoretical problems, and we next discuss briefly the two most significant of them.

First, Polanyi never said that there existed two types of knowledge ontologically although many authors claim so (e.g. Baumard 1996; Spender 1996; Jasimuddin et al. 2005). In Polanyi's theory tacit and explicit knowledge are related to two different kinds of awareness, subsidiary awareness and focal awareness respectively. The things that we are attending to and that we are consciously aware of (e.g. propositional belief, mental image, external object, read sentence etc.) belong to focal awareness. However, all focal awareness is dependent on subsidiary awareness that consists of variety of clues, elements and processes (personal knowledge structures, emotional processes, past experiences, motor responses etc.) that enable focal awareness giving rise to the personal meaning of its contents. This is the structure of all acts of knowing (Polanyi 1969). Hence, the focal object is always identifiable and in this sense explicit, whereas subsidiary content is unidentifiable, tacit. In addition, the two kinds of awareness are mutually exclusive; when the attention is switched to something hitherto subsidiary, it becomes focal losing its subsidiary meaning (Polanyi 1964). Most importantly, this tacit-explicit structure concerns *all acts of knowing*; tacit knowledge is not a separate category of knowledge but an integral component of all knowledge. Hence, to divide knowledge into two categories is not only misunderstanding of Polanyi's thinking but totally opposite approach to knowledge. Also other authors have addressed this problem (e.g. Hedesstrom and Whitley 2000; Tsoukas 2003; Grant 2007). Polanyi's theory is often referred as "theory of tacit knowledge" (e.g. Refaiy and Labib 2009; Mooradian 2005; Stenmark 2000), which might feed the misinterpretation. Importantly, Polanyi's theory is a *theory of knowledge*, whose vital component the tacit dimension is. Tacit dimension is present in *all knowledge*.

Second, the categorisation of knowledge into tacit and explicit and the idea of conversion of tacit knowledge into explicit knowledge leads to puzzling, even internally contradictory, overall epistemology. For example, Nonaka and Takeuchi (1995) originally saw rather unproblematic that something subjective and intangible (as they characterised tacit knowledge) became converted justified, objective and true belief. However, the process of explication (or externalization) does not explain how tacit knowledge becomes justified and true. The main point of Polanyi's epistemology was that specifically due to the tacit dimension of knowledge it could never be objective or fully justified.

The epistemology that divides knowledge into two categories has also one practical constraint that does not coincide with our everyday experience. For example, I might be able to articulate reasons why I choose one option over another being, however, unable to exhaustively explain all the factors that have affected my choice. In this sense the described epistemological view is a rather rigid because knowledge is defined either tacit or explicit but the forms of knowing "in-between" are not explained. A logical consequence is that the definitions of these two categories of knowledge become unavoidably vague in the case of borderline instances of knowledge.

It has been argued (e.g. Hislop 2005; Tsoukas 2003; Brown and Duguid 2001) that tacit-explicit dichotomy misunderstands Polanyi's analysis of knowledge. Indeed, it seems to give a simplified conception of knowledge in a sense that it is a compromise between polanyian epistemology and traditional definition of knowledge, which leads to non-realistic epistemic view. Supposedly for these reasons this perspective has been afterwards modified to more workable theory of knowledge that recognizes the inseparability between tacit and explicit knowledge better but still supports the idea of sharing of tacit knowledge.

The modified view is based on the idea that all knowledge exists on a spectrum (or continuum) that runs from tacit (uncodified) knowledge at one extreme to explicit (codified) knowledge at the other (Leonard and Sensiper 1998; Hall and Andriani 2003; Jasimuddin et al 2005). Leonard and Sensiper (1998) remark that most knowledge exists in between these two extremes, which is the main modification compared to the tacit-explicit dichotomy discussed above. This conception of knowledge takes into account Polanyi's thinking, namely the idea that knowledge has both tacit and explicit dimensions. The position of knowledge on the tacit-explicit spectrum is then determined by its tacit-explicit mix (Jasimuddin et al 2005). This epistemic perspective[2] is described (as we understand it) in figure 1.

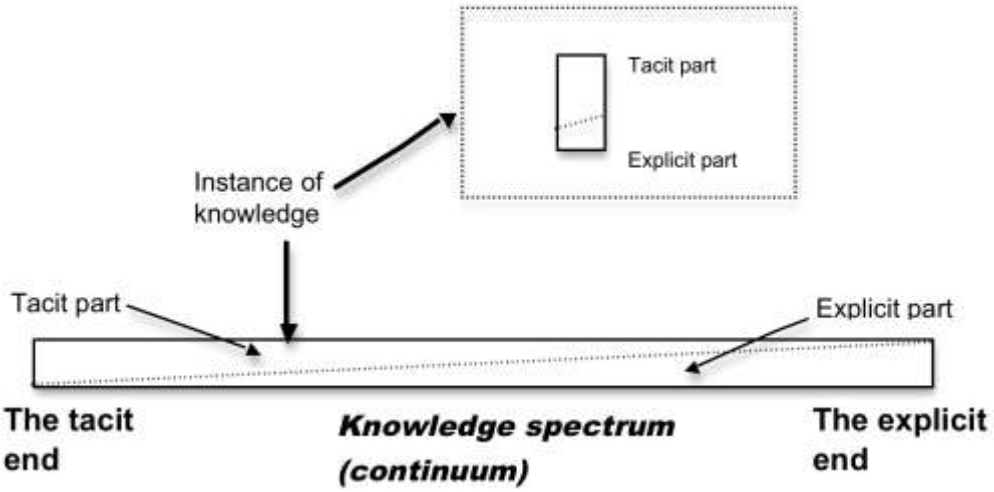

Figure 1: Knowledge seen as a spectrum. According to this view knowledge-spectrum has tacit and explicit ends. Hence, any given instance of knowledge has a tacit part and an explicit part unless not taken from either of the ends

However, as a theory of knowledge this view also has some illogical or at least unexplained features. First, the explicit pole of the knowledge continuum still is not in line with Polanyi's theory. Polanyi denied the existence of wholly explicit knowledge (because all knowledge is tacit or based on tacit knowledge, see Polanyi 1966). However, it would be obviously simple to modify the model and figure 1 so that in the explicit end knowledge only approached explicitness but the continuum ended before *total* explicitness. In fact, Leonard and Sensiper (1998: 113) seem to think so as they write: "At the other end of the spectrum, knowledge is almost completely explicit". However, most authors seem to think as does McAdam et al (2007: 47): "Knowledge can be viewed as a spectrum where one extreme is seen as completely tacit and implicit knowledge and the other as completely explicit or codified knowledge."

It is an interesting question how different instances of knowledge then are situated in the continuum. For example, Hall and Andriani (2003) situate 'intuitions' to the tacit end and 'theory of gravitation' to the explicit end. It might be possible to *present* the theory of gravitation "explicitly", but as a form of knowledge many scientific theories are anything but explicit; the theory of gravitation probably represents very different kind of things to a novice compared to its meaning to an experienced physicist based on their experiences and existing

[2] There are similar views to 'knowledge as spectrum'-view, only described in a different manner. For example, Edwards (2009) presents knowledge as two circles with the tacit part as a smaller circle within the bigger, explicit circle. The size of the inner circle (tacit part) varies depending on the level of tacitness/explicitness of the particular instance of knowledge. Hence, the relational amounts of tacit and explicit parts of any instance of knowledge can be presented with this model in an analogical way to the way an instance of knowledge is presented in figure 1. The obvious difference is that Edwards' model is not continuous in a same way that knowledge as spectrum-view.

knowledge structures, among others. Exactly this is the significance of the tacit dimension that enters into every act of knowing–and why completely explicit end of the spectrum is not very realistic.

Second, spectrum-view of knowledge also seems to lead to relatively sharp tacit-explicit dichotomy as many authors apply it as a background theory for sharing of tacit knowledge (e.g. Leonard and Sensiper 1998; Hall and Andriani 2003; Jasimuddin et al 2005). Let us observe any given instance of knowledge on a knowledge spectrum; it has a tacit and an explicit part. In order to share tacit knowledge we should codify it first (Nonaka and Takeuchi 1995; Hall and Andriani 2003). The process of codification means that tacit knowledge is converted explicit. Hence, a certain amount of the tacit part of that particular instance of knowledge would be replaced by explicit knowledge. This means that the proportion of explicit part to tacit part grows and hence, that particular instance of knowledge must shift towards the explicit end of the spectrum if the codification succeeds.

Consequently, the same knowledge can exist in various points in the spectrum. In a logical sense this means that the same instance of knowledge can exist in various forms in the knowledge spectrum. Thus, a presupposition of the process of explication/externalization/codification of tacit knowledge always presupposes also two different forms (or categories) of knowledge. For example, Hall and Andriani (2003: 146) explain: "Until the system of bass and treble clef notation was devised [in C12th] the knowledge of music could only be acquired by direct experience." Hence, they situate 'music pre C12th' almost to the tacit end of the spectrum and 'music post C12th' almost to the explicit end of the spectrum. The authors seem to suggest that more or less the same knowledge of music can exist in two different forms of knowledge, tacit and explicit. Basically this leads back to categorization of knowledge and some kind of knower-independent, objective ideal of knowledge–which, again, are issues that Polanyi wanted to criticise with the concept of tacit knowledge.

Third, even if it were assumed that some tacit knowledge could be traced, supposedly most of it would remain hidden. This means that it is impossible to specify the amount of tacit knowledge that a given instance of knowledge includes. Following from that, it is also impossible to specify the location of any given instance of knowledge on the knowledge spectrum. Therefore we might ask what explanatory power the 'knowledge as spectrum'-view actually provides? Compared to 'knowledge as category'–view it takes into account that there exists forms of knowledge "between" tacit knowledge and explicit knowledge. Besides that it does not seem to resolve other problems of 'knowledge as category'-view. Moreover, whereas the 'knowledge as category'–view makes it rather clear that tacit knowledge is dependent on knower and explicit knowledge is independent of knower, the spectrum-view does not provide very clear explanation of the role of the knower in the process of knowing. Evidently, tacit end and explicit end represent knower-dependent and knower-independent knowledge respectively, but what about the instances in between? Accordingly, the spectrum-model is argued to provide a unified conception of knowledge but it cannot explain what the knower's relationship to knowledge is. Hence, although it covers different types of knowledge, no supporters of this view have provided further explication of the nature of knowledge in general suggesting that the view has not been considered completely.

3. Towards theoretically firmer epistemology

We base our understanding of the nature of knowledge on the polanyian argument that knowledge requires active participation of the knower and is hence knower dependent. Knowing is an act of a particular individual. The claim that there is knowledge in itself, without a concrete knowing subject, is fantastic (Bunge 1974). Whenever we express what we know we can only do so by "sending" messages of some form. Such messages, however, carry for the most part information, which only a knowing mind can assimilate, understand and incorporate into its own knowledge structures (Wilson 2002). Despite the various ways to codify and store "knowledge", stored knowledge does not seem to have much meaning until it is used for some purpose (by someone). When we know something, we engage in that what we know and cannot be neutral or indifferent in relation to it; we have no means to abstract the knowledge from our life and experiences by the means of which we understand that knowledge.

If the knower dependency of all instances of knowing is accepted it means that the tacit dimension of knowing also enters in all types of knowledge as Polanyi argues; knowledge is represented in the mind of the knower and it is thus necessarily dependent on the processes and elements that take part in the forming of that representation. In this sense even an instance of knowledge that is presented in an explicit form (e.g. a note written on the paper) has a tacit dimension. The conscious representation in turn forms the explicit dimension of knowledge.

It is important to bear in mind that knowledge presented in an explicit form can only be originated from a relatively clear representation in the mind; we can articulate and describe only things that we are conscious of (Ledoux 2002). In Polanyi's terms, explicit knowledge is created to focal awareness as a result of tacit processes in subsidiary awareness. In this sense for example any proposition is equally explicit whether we read it, hear it said by another person or come to think it spontaneously by ourselves. The main point is that explicitness of knowledge does not refer only to the form in which a given instance of knowledge is presented; the clarity of knowledge and the way we regard it is not dependent on the form of presentation of that knowledge. Hence, in the epistemic sense explicitness refers to the coherence of knowledge, which in turn refers to origins and justifiability of the belief in question.

In sum, given that knowing occurs within a human knower, all knowledge has necessarily a tacit dimension that refers to subconscious or otherwise subsidiary processes and elements that reflect the experiences of that particular knowing subject, but are also typical to any human cognition. As a result of the tacit factors the knower forms a focal conception of the matter, which represents more or less explicit knowledge. Hence, all instances of knowledge have tacit and explicit parts (Polanyi argued that all knowledge can be tacit, that is, an instance of knowledge that does not have an explicit part. However, in this case even the knower does not consciously know that he is knowing something tacitly and such a situation can be considered as a special case of knowing that simply cannot be commented on much). When this basic structure of knowledge is taken into account, knowledge can be further divided into categories in a suitable way (for example in a way adopted from psychological memory research: conditioned knowledge, semantic knowledge, episodic knowledge, procedural knowledge). Importantly, *all* categories in the model should manifest this structure. The basic structure of knowledge is described in figure 2.

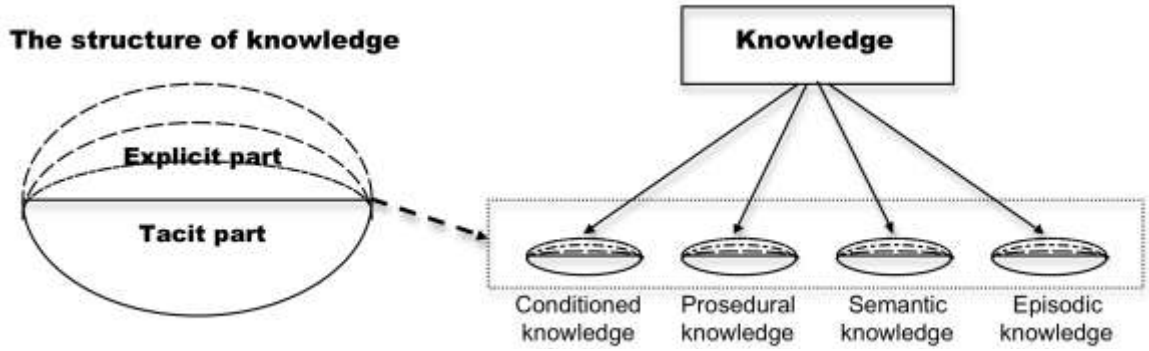

Figure 2: The structure of knowledge. Knowledge has a tacit part upon which the possible explicit part is founded.

All instances of knowledge manifest this structure, even if knowledge is further categorized in a suitable way depending on the context. In this figure is presented an example of categorization adopted from the psychological memory research

It is useful to relate this conception to the traditional definition of knowledge (knowledge as justified, true belief) in order to clarify it. The starting point of knowledge in the traditional definition is the belief; knowing something posits that the thing being known must be believed. However, according to this definition we must distinguish correct beliefs from incorrect ones. Thus, the belief must somehow correspond to the state of things in reality in order to be considered knowledge. This, however, is still not enough because for example a lucky guess could be interpreted to be knowledge. Therefore there has to be some grounds for holding a certain belief–the belief must be justified. Indeed, traditional theory of knowledge as a branch of philosophy is most basically a theory about epistemic justification (Pollock and Cruz 1999).

Whereas the traditional analysis of knowledge described above starts from the belief and the analyses truthfulness and justification of the belief, Polanyi's analysis is focused on the factors that *form the belief*. In this sense Polanyi's theory expands traditional view on knowledge. This idea is described in figure 3.

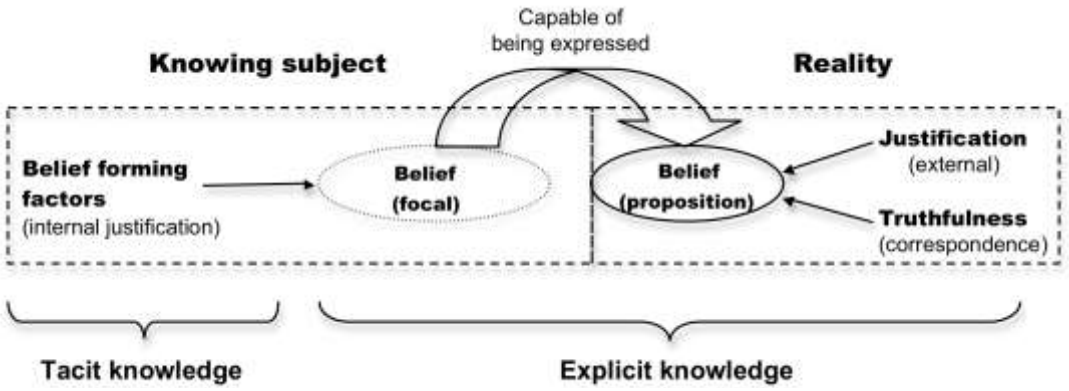

Figure 3: The relation between traditional definition of knowledge ('Reality') and Polanyi's theory of knowledge ('Knowing subject').

In Polanyi's theory both the focal belief in the knower's mind and articulate belief represent explicit knowledge. Tacit knowledge refers to belief forming factors that cannot be fully traced. In this sense tacit knowledge can be understood as an internal justification for the focal belief. Instead, the traditional approach to knowledge studies justification and truthfulness of propositional beliefs

This view suggests that knowledge has two types of justification. External justification refers to justification in the traditional sense; the requirement to objective explanation/argumentation of how that belief has been attained. It is specifically related to the ability to publicly present evidence supporting a claim (Niiniluoto 1999). Thus, (external) justification is directed at the belief or other form of representation that the knower holds. But all evaluations of beliefs derive from belief-forming processes (Goldman 1986). In this sense the idea of internal justification comes close to the basic argument of naturalized epistemology according to which epistemic status of a belief state depends on psychological processes that generate and sustain it (Kitcher 1992). Accordingly, natural cognitive and physiological processes involved in the process of knowing refer to internal justification of the formed belief and cannot be bypassed in an analysis of knowledge. Instead of being particularly interested in the norms that justify human knowledge, Polanyi stressed the importance of confidence in human cognitive capacities in understanding reality.

The epistemological conception presented above has considerable strengths compared to the two models predominant in the KM literature discussed in the section four. First, instead of simply picking up the concept of tacit knowledge from Polanyi's theory and transferring it to more objectivist epistemological environment, we have begun from Polanyi's theory and related it with the traditional conception of knowledge. The analysis shows that the traditional view and Polanyi's view are incompatible–mainly because of considerably different conceptions of the requirement of justification of knowledge. Second, we express clearly the knower-dependency of knowledge. Every individual knows in his own way, from his basis. Interestingly, this has been originally the starting point of knowledge sharing but from the theoretical perspective the idea seems to get lost somewhere *en route*. Third, as other critics have also suggested tacit knowledge is narrower phenomenon that KM literature intimates in the sense that our narratives, beliefs, impressions etc. do not represent tacit but focal ("explicit") knowledge whose interpretation is the charge of the receiver and his tacit mental capacity.

4. Conclusions

The predominant epistemological conceptions behind the relationship between tacit and explicit knowledge and the idea of explication of tacit knowledge are not based on the proper analysis of knowledge nor Polanyi's theory. As a result, the epistemological foundations behind the tacit knowledge discussion tend to wake more questions than provide answers. This has led to confusion and inconsistency in the discourse concerning tacit knowledge and its relation to explicit knowledge–even up to a point that some critics (e.g. Wilson 2002; Grant 2007) have claimed that the concept of tacit knowledge has become meaningless nonsense.

The origin of the problem of conceptual vagueness is that the concept of tacit knowledge is taken from an epistemological environment that differs radically from the theoretical environment that it has been brought to. In order to get the concept function in the new context it has been interpreted very loosely. Moreover, given that one of most important functions of theoretical models (for example the models of explication of

tacit knowledge) is to make predictions, it is obvious that models including poorly defined concepts make wider amount of predictions--up to a point at which the made predictions are anything but accurate, reliable or even very clear. Therefore not surprisingly, in the case of tacit knowledge it is somewhat simple to report positive results in the experiments concerning explication or externalization of tacit knowledge because some assumptions, beliefs, insights or previously unspoken "knowledge" can always be "externalized" out of the subjects regardless of the used method. Instead, a little attention seems to have been paid on the question, in which sense the "explicated tacit knowledge" has been previously tacit.

The application of Polanyi's theory of knowledge as the basis of KM theory is justified because knowledge understood traditionally as justified true belief simply is too narrow to explain human way to know and act in complex environments. One of the most significant contributions of Polanyi's epistemology is the consideration of pre-logical phases of knowing that unavoidably affect the way we know. Polanyi's theory broadens the scope of knowledge as he accepts feelings and intuitions not only as valid but also as necessary elements of knowing. Polanyi's argument concerning the knower-dependency of knowledge (that knowledge is necessarily dependent on the subjective processes and elements that take part in the forming of the focal part of knowing) is also well justified from the psychological perspective.

We have suggested a simple epistemological model that is in line with polanyian theory of knowledge. We argue that this model provides more coherent foundation for KM theory than the two epistemological views that are predominant in the contemporary KM literature. Given that tacit knowledge is inarticulate and inaccessible by definition, we suggest that in attempts to classify knowledge the focus should be on different forms of focal ("explicit") knowledge; instead of explication of tacit knowledge we should discuss crystallization of (focal) knowledge that is difficult to articulate. Hence, we would like to stress that our aim is not to criticize the goals and methods of knowledge sharing in general but to develop the aspects that are shown to be inconsistent in the present KM theory.

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