

How Tacit Is Tacit Knowledge?

Ilkka Virtanen

Department of Computer Sciences, 33014 University of Tampere, Finland
ilkka.virtanen@cs.uta.fi

Abstract. Our study concerns *tacit knowledge* that has been one of the most discussed concepts in the field of contemporary knowledge management. We are particularly interested in the issues concerning 1) the nature of tacit knowledge, and 2) the idea of explication of tacit knowledge. We approach these questions from the perspective of cognitive science. Tacit knowledge is deeply related to conceptual modeling because all concepts are based on tacit knowledge, but all tacit knowledge is not elaborative to concepts.

Keywords: Tacit knowledge, explication of tacit knowledge

1 Introduction

Tacit knowledge has been one of the most discussed concepts in area of knowledge management during the recent years. Tacit knowledge is usually characterized as “knowledge difficult to articulate” (e.g. Nonaka and Takeuchi [12]; Baumard [3]), and is therefore often used to refer to practical knowledge, such as skills, know-how and professional intuition.

The origin of the concept of tacit knowledge is traced back to Michael Polanyi’s [14] theory of knowledge in the mid 1900’s. The starting point of Polanyi’s theory was the observation that people generally know more than they are able to tell; conscious knowledge consists of elements that are not attainable for the focal awareness. This idea became enormously popular in the knowledge management literature in the mid 90’s.

The main motivation for the popularity of the concept in the area of knowledge management is the widely supported claim that organizations can achieve competitive advantages by using effectively their unique knowledge [3]. In a wider context this idea is related to so-called ‘resource-based’ theory of the organization in which the strategic interest is focused on idiosyncratic and rare, yet sustainable knowledge [17]. According to many authors tacit knowledge possessed by individuals is an important source of unique and sustainable knowledge in the organizational context (e.g. Argote and Ingram [2]; Kikoski and Kikoski [10]).

Particularly *explication* and *sharing* of tacit knowledge have been in focus for several reasons. Explication of tacit knowledge refers to an operation that aims making individual’s tacit knowledge (for example a certain skill or context-specific know-how) accessible, visible and thereby usable by other individuals. In other words, it is an operation where tacit knowledge is converted into a linguistic

representation. The most common reasons for discussing the idea of explication of tacit knowledge in the field of knowledge management seem to be

- the capturing of expertise by articulating tacit knowledge of the professionals (e.g. Cimino [5]; Sternberg [18]);
- the improving of the performance of teams by maximizing usage of organizational intellectual capital (e.g. Busch [4]);
- the achieving of competitive advantage by effective usage of unique knowledge (e.g. Spender [17]; Baumard [3]), and
- the generation of innovation (e.g. Nonaka and Takeuchi [12]; Leonard and Sensiper [11]).

Thus, the innermost aim of making tacit knowledge explicit is to harness individual's intangible but unique knowledge for public use in organizations.

2 The Research

We claim that two significant problems are involved in the idea of explication of tacit knowledge. First, despite the growing amount of literature concerning the exploitation of individuals' tacit knowledge there is no agreement on the question *what tacit knowledge really is*. The loose characterization 'knowledge difficult to articulate' has left the concept open to varying interpretations. Therefore, the tacitness of tacit knowledge is a question dependent on the emphasis of the author and the theory; tacit knowledge may mean practically anything between embodied knowledge impossible to express in words (e.g. Tsoukas [20]; Hislop [8]) and explicit knowledge concealed for some practical reason (e.g. Leonard and Sensiper [11]; Szulanski [19]). In fact, it seems that many authors have taken advantage of the inconsistent definition of that concept characterizing it to a direction more useful or related to their area of interest, which has created even more confusion about the nature of tacit knowledge.

Second, the idea of explication of tacit knowledge is considered to be a practical application, or even an extension, of Polanyi's theory of knowledge from which the concept is adopted [12]. However, the idea of explication of tacit knowledge seem problematic from that viewpoint; in Polanyi's [15] theory tacit knowledge is unattainable by definition. Therefore, explication of something unattainable indeed seems complicated. From this perspective the idea of explication of tacit knowledge is not as simple as presented in the contemporary knowledge management literature. These two problems presented above are tied to each other; if tacit knowledge were more clearly defined, or even characterized, there would probably be a better possibility to assess the possibility of explication of it. In sum, the subject matter seems *inadequately studied*.

It is evident that epistemological issues are not the most central matter of interest of management studies. However, we claim that epistemological issues, such as the nature of knowledge, have become increasingly important also in the field of knowledge management, because many contemporary knowledge management theories discuss such phenomena as *knowledge conversion* from tacit to explicit, and

creation of new knowledge based on explication of tacit knowledge—these theories should not bypass the epistemological background from which the concept of tacit knowledge is derived. We argue that the explanation of tacit knowledge must be strictly based on Polanyi's epistemology for three reasons.

1. There is generally no disagreement over the origin of the concept. The idea of tacit knowledge comes from Polanyi's theory of knowledge that developed during over three decades in various writings after mid 1900's.
2. Polanyi spent a great deal of his career studying this phenomenon and developing his epistemology. Therefore, he is not only "the father" of the concept of tacit knowledge, but also, as far as is known, the scientist who has studied the phenomenon most.
3. Loose or partial interpretations of Polanyi's theory have led to loose interpretations of the concept. Due to the fact that Polanyi's theory is the source of the concept of tacit knowledge, the original characterization of the concept should not be changed even if applied in more practical context.

From these three points of view presented above Polanyi's theory is the source where the discussion concerning tacit knowledge should get off the ground.

The most significant question of our research is, how tacit knowing should be understood as a cognitive phenomenon. Is it even a consistent concept to describe human cognitive processes in the light of contemporary cognitive science? Also, the problem of indeterminacy concerning the definition and the nature of tacit knowledge cannot be solved without a profound analysis of Polanyi's theory. The theories stressing the importance of explication of tacit knowledge generally seem to have bypassed this kind of analyses. We apply in our analysis the findings of contemporary cognitive and neurosciences—these fields of research have only been developing when Polanyi presented his most important results. As far as it is known, Polanyi's epistemology has not been studied from this perspective.

The analysis of Polanyi's theory done so far has revealed that tacit knowing is present in all levels of cognition from the most basic perceptual processes to the highest levels of executive processes. Based on this observation we are developing taxonomy of different types of tacit knowledge that should clarify the understanding and discussion concerning tacit knowledge; it is obvious that the general conception of tacit knowledge applied for example in knowledge management literature is far too narrow and simplified.

Based on better understanding of the cognitive nature of tacit knowing it is possible to reassess the idea of explication of tacit knowledge. According to the research work done so far it seems that the concept of tacit knowledge has been brought to certain important knowledge management theories without studying the epistemological whole from which the concept is adopted; the theories stressing the importance of explication of tacit knowledge do not fully take into consideration the mechanisms that Polanyi stressed in his theory.

According to Polanyi [15], significant part of knowledge, even scientific, possessed by humans cannot be converted into natural language, which suggests that knowing is more complex cognitive phenomenon than it is generally considered. The terms 'knowledge' and 'knowing' typically evoke an impression of linguistic representation. Although linguistic processes are an important form of human cognition, contemporary findings in the areas of cognitive psychology (e.g. Paivio [13], Reber [16]) and neuroscience (e.g. Damasio [6], Duncan and Feldman Barret [7]) suggest that non-verbal processes may even be more significant forms of thinking than representations based on language. The importance of non-verbal processes is why the subject matter does not concern only the ongoing knowledge management discussion about the nature of tacit knowledge, but is also related to problem of knowledge representation in general, which is one of the most central issues of information system science and conceptual modeling.

In conceptual modeling it is pursued to describe certain part of reality using a set of concepts and relations between them in order to understand and explain that part of reality better for a certain purpose. It is important to take into consideration that a technical representation, usually presented using a certain language, is based on more fundamental knowledge that the technical representation might not be able to embody. Also, it cannot be assumed structures of the real world can be captured rationally and unambiguously [9]. According to Polanyi's theory human understanding of all concepts and relations between them is based on personal tacit knowledge that cannot be formulated to language. One the other hand, the more we know about the origin of the target we are dealing with, the more appropriate representations we are able to model. An attempt to understand how tacit elements affect the way humans structure and explain concepts and relations between them is an important, yet quite often ignored, aspect of information system science.

3 Summary

Our study concerns tacit knowledge that language cannot fully translate. The objective of the study is to explain what tacit knowledge is from the viewpoint of cognitive science. In this sense the study could also be described as an attempt to reduce the gap between Polanyi's theory of knowledge and cognitive sciences. More importantly, we reassess critically the idea of explication of tacit knowledge that has been a widely discussed phenomenon in the field of knowledge management. It seems that the subject matter is still studied seriously inadequately despite the wide application of the concept of tacit knowledge.

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