

Creating a Graphical Three (3) Dimensional Diagram of the Knowledge Transfer Process

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ABSTRACT

Polanyi's tacit and explicit knowledge theory will be integrated with coalescent knowledge theory (a shared knowledge concept) to create a graphical three (3) dimensional diagram of the knowledge transfer process. This diagram can be used by management consultants to understand and create a customized knowledge transfer process for clients.

Introduction

Today, human knowledge is usually classified as either tacit or explicit. There are numerous definitions of tacit knowledge, but the originator of the concept was Polanyi. In his personal knowledge/knowing theory (1958), Polanyi sees tacit knowledge as the primary source of all personal/individual knowledge (Gill, 2000). His theory has tacit knowledge/knowing creating explicit knowledge through indwelling (Kane, 1982). Gill (2000) defines Polanyi's indwelling as "the process of immersing oneself in the particulars of a subsidiary awareness by means of embodied activity until these particulars come together as a meaningful whole as an interactive act." In this process, Polanyi claims that physical and conceptual skills and understanding are achieved (Kane, 1982). To summarize, Polanyi sees self as the source of knowledge. In fact, there could be two potential sources of knowledge: 1. Self and 2. Others (Mother, father, teachers, etc). The second source of knowledge is addressed by the coalescent knowledge theory (a shared knowledge concept). In this paper, Polanyi's tacit and explicit knowledge theory will be integrated with coalescent knowledge theory to create a graphical three (3) dimensional diagram of the knowledge transfer process. This diagram can be used by management consultants to understand and create a customized knowledge transfer process for clients

The Coalescent Knowledge Dimension

Morgan, Merino, Morabito, and Reilly first proposed the coalescent knowledge dimension in 2001. This theory proposes that a person has three (3) knowledge dimensions. The first is Polanyi's (1958, 1966) tacit knowledge dimension. Tacit is the knowledge a person is unaware that they are using. The second dimension is the explicit knowledge dimension (Plato 384-322 BC). Explicit is the knowledge that a person knows (aware of) they possess and it is always

linked to tacit knowledge. This knowledge is considered information when it is externalized by writing a document, etc. In this case, the document is explicit knowledge to the writer and information to the reader. In modern times, Polanyi devoted a majority of his work to the interplay between the explicit and tacit components of human experience (Gill, 2000).

The third dimension coalescent knowledge is shared knowledge that exists between two or more people ([Morgan, Merino, Morabito, and Reilly, 2001], [Morgan, Morabito, and Merino, 2004]). Some form of dialogue and/or observation creates this shared knowledge. A scenario of coalescent knowledge creation would be two people discussing a method of splitting wood to burn in a stove or fireplace. In this process, the first person instructs the second person on how to split wood by demonstration and dialogue. The second person links this information to their knowledge and does an integration of the information into their knowledge base. In the next step, the second person confirms with the first person the understanding of how to split wood by demonstrating the splitting of wood with an axe. This process continues until both people agree that the second person has the knowledge set needed to split wood. This process has created a shared knowledge that only exists between the two people involved in the dialogue. Since it is shared and expressible in words and action, this knowledge does not meet the definition for Polanyi's tacit or explicit knowledge. Morgan, Merino, Morabito, and Reilly (2001) concluded that if this shared knowledge did not link to the definitions of tacit and explicit knowledge, then it must reside in a new knowledge dimension that is shared. They searched for a word to describe this dimension and selected coalescent. It is defined as coming together to form a new whole. The coalescing of knowledge of two or more people has created a new-shared knowledge

that is expressible in words and/or action. A graphical representation of the knowledge created is presented in Figure 1.

Graphical Representation of Coalescent Knowledge

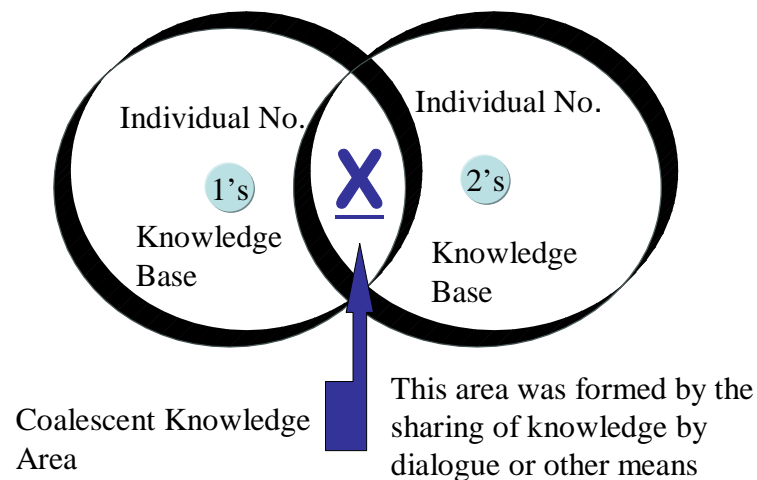


Figure 1

The coalescent knowledge dimension has the following characteristics:

- Shared
- Expressible by words and/or action
- Private or Public
- Scalable (2 + people)
- Facilitates the opportunity for individuals to act as if they have one mind

Polanyi's Knowledge Theories

Polanyi's research focuses on personal/individual tacit knowledge. He concluded that the tacit dimension or self was the source of all knowledge. It should be noted that "since the main

emphases and concerns of explicit knowing have received such thorough treatment in the history of Western thought, especially the modern period, Polanyi devotes the majority of his efforts to expounding on and exploring the nature of tacit knowing” (Gill, 2000). Therefore, Gill’s approach in analyzing Polanyi’s writing is to include the modern version of explicit knowing. By doing this, the analysis provides a greater understanding of the interaction between Polanyi and his peers, regarding the viability of tacit knowing at that time. Jha (1995) arrived at a similar conclusion and suggested that Polanyi’s tacit knowing should encompass explicit knowing, to provide a more complete presentation of it. In his approach, Gill (2000) views this work from multiple dimensions with complex interaction based on experience, cognitive activities, and dimensional structure. This enhances the individual understanding of the “nature of meaning at all levels” (Gill, 2000). His analysis tool, used to provide an understanding of Polanyi’s papers, is in the following complex vectorial model: Gill’s model representing this interplay is presented in Figure 2 below.

Gill's Model for Understanding Polanyi's Writings

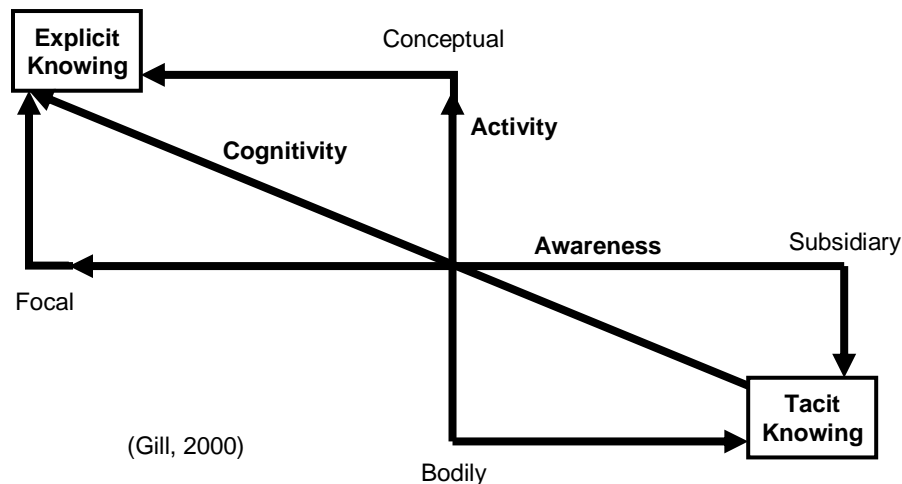


Figure 2

In Gill's diagram, a horizontal line called Awareness dimension represents the focal and subsidiary sub-categories. Awareness dimension has two endpoints or poles: Focal and Subsidiary. The Activity dimension is the vertical line that crosses the horizontal Awareness dimension line at its center. This dimension has two endpoints or poles: Conceptual and Bodily. All human activity takes place between the Conceptual and Bodily poles. These two dimensions cover the range of human experience, with awareness acting as the input and activity as the output. The third dimension is cognitivity. Be sure to note that this dimension only moves in one direction (See arrow). The arrow shows that cognitivity flows in one direction from the tacit to the explicit pole. The focal pole of the awareness dimension and the conceptual dimension pole of the activity dimension combine to create what Polanyi would call explicit knowing. The subsidiary pole of the Awareness dimension and the Bodily pole of the Activity dimension

combine to create what he refers to as Tacit Knowing. The tacit and explicit knowing become the poles of human experience (Cognitivity). This dimensional model provides greater richness in understanding the wholeness of the human experience by handling both the cognitive and physical world. (Gill, 2000) One could also say that this diagram provides the Polanyi schema for seeing human experience.

The cognitivity dimension arises from the interaction between focal awareness and conceptual activity thus facilitating explicit knowing and the interaction of bodily activity and subsidiary awareness. Therefore, the interplay between the explicit and tacit poles of human experience creates the cognitivity dimension. The cognitivity dimension uses Polanyi's indwelling to create explicit knowing (Kane, 1982). Gill (2000) defines Polanyi's indwelling as "the process of immersing oneself in the particulars of a subsidiary awareness by means of embodied activity until these particulars come together as a meaningful whole as an interactive act." In this process, Polanyi claims that physical and conceptual skills and understanding are achieved (Kane, 1982). Gill (2006) stated, "Polanyi's view is that tacit knowing is the primary source of all knowledge". He goes on to state that it is logically impossible to have explicit knowledge apart from some form of tacit knowing, it then follows that tacit knowing (in the body) is the source of all knowledge. In other words, Polanyi sees the primary source of knowledge as beginning at the tacit knowing (knowledge) pole. This is the cognitivity dimension in Gill's model, which starts at the tacit knowing pole and ends at the explicit knowing pole. Therefore, in Polanyi's view, tacit and explicit knowing is personal or is an individual (self) activity. (Jha, 1995; Gill, 2000; Kane, 1982)

Integrating Coalescent & Polanyi's Knowledge Theories

On the other hand, the coalescent knowledge dimension theory embraces the concept that not all knowledge comes from self. Some portion of a person's knowledge comes from others (Mother, father, teacher, etc.). Because the knowledge is from a source that we trust or want to believe, the knowledge is accepted. This dimension's endpoints would be expressible in words and/or in action. An example of a shared expressible knowledge in action would be a knowledge relationship between a football quarterback and a wide receiver. Their shared knowledge is displayed when they work together in making plays that look as though they have one mind. Figure 3 is a graphical representation of the integration of Polanyi human experience tacit and explicit dimension and the coalescent knowledge dimensions moving through time.

Intergraded Knowledge Dimensions

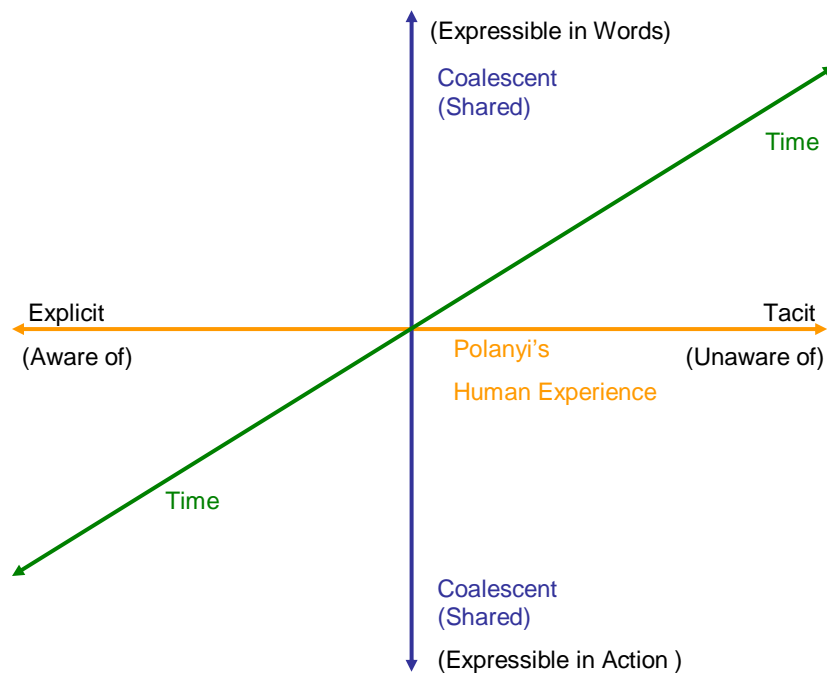


Figure 3

With the integrated knowledge dimension diagram, management consultants can understand the dimensions that the knowledge resides in and create a customized knowledge transfer process for their clients. The consultant would first seek to understand the distribution of knowledge to be transferred in each of the dimensions listed above. In the process of determining the distribution, the location of the knowledge is discovered and refined for transfer purposes. It is an accepted fact that in order to use explicit knowledge, there must be tacit knowledge for the knowledge to be useful. Since a person is unaware of this required knowledge, the ability to transfer it would be low to none, unless a portion of it was actually distributed in the coalescent dimension. By discovering the real distribution of knowledge across the knowledge dimensions, a consultant could formulate a plan to transfer the knowledge based on the dimension it resides in. This approach would provide a more complete transfer and reduce the learning curve on the receiving end of the transfer process.

Example of Knowledge Transfer between Dimensions

Figure 4 is an example of knowledge transfer between dimensions.

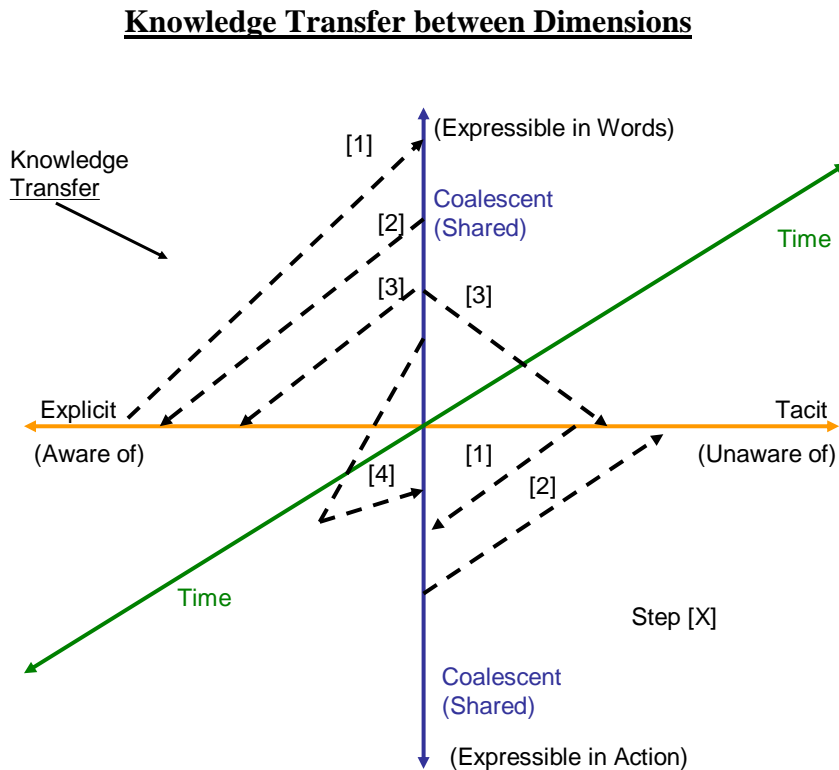


Figure 4

The transfer of knowledge between dimensions starts [Step 1] at either Polanyi's explicit dimension via dialogue or the tacit dimension via observation or both. The example of learning to drive a car will be used to discuss a knowledge transfer process. Most people that are learning to drive a car have ridden in a car and observed how other people drive a car. A person has agreed to give the learner driving lessons. The instructor demonstrates how to drive the car by driving a car (tacit knowledge transfer via observation) and while doing the driving they explain the operation and rationale involved (explicit knowledge transfer). The learner and the instructor discuss the information being transferred until they come to a shared knowledge of how to drive a car [Step 1 of the knowledge transfer process]. The learner is now given the opportunity to

drive. In doing this activity, the learner takes the shared knowledge and uses it to drive the car. While the learner is using the coalescent knowledge, some of the knowledge is becoming personal explicit and tacit knowledge [Step 2]. Other portions of the knowledge that were transferred will remain coalescent knowledge. As the learner becomes more proficient at driving the car, more of their coalescent knowledge will move to their explicit and tacit knowledge as the linkage to the source of this knowledge moves further into the background [Step 3].

A knowledge transfer that could occur, but is not used in this example, is from coalescent (expressible) knowledge can be converted into coalescent (expressible in action) via repetition [Step 4]. This step would be used when coalescent knowledge expressed in words is used at a frequency that causes the detailed aspects of the knowledge to be lost. This type of event would move this knowledge to coalescent –expressible in action. Example: Quarterback and wide receiver knowledge sharing process discussed earlier. It should be noted that explicit knowledge can be used at a frequency that could cause it to become tacit (un-aware of) knowledge. Example: While driving a car, the level of detail that driver is actively controlling will decrease as the driver's driving experience increases.

Conclusion

The key to creating or understanding the knowledge transfer process is in coalescent knowledge dimension. This knowledge is shared, expressible in words or action, private or public, scalable (2 + people), and facilitates the opportunity for individuals to act as if they have one mind. When coalescent knowledge theory, which is the third component of human knowing, is integrated with Polanyi's tacit and explicit knowledge theory a graphical three (3) dimensional

knowledge transfer diagram is created. This diagram can be used to customize a knowledge transfer process to facilitate a more efficient transfer of knowledge.

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