

THE INSTITUTIONALIZATION OF ORGANIZATIONAL LEARNING: A NEOINSTITUTIONAL PERSPECTIVE.

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ABSTRACT

Crossan, Lane and White (1999) presented a model of organizational learning that includes intuiting, interpreting, integrating and institutionalizing processes. Organizational learning studies that have followed Crossan, Lane and White’s 1999 4I framework have explored and elaborated on the initial three processes of organizational learning. These studies however, have not fully elaborated on the processes of the institutionalization of organizational learning. The purpose of this study is to explore, identify and characterize the institutionalization processes that lead to the embedding of knowledge in the organizational memory. This paper discusses the theoretical framework and methodology of a doctoral research study that explores how a company institutionalized knowledge about implementing a sustainable development program.

1 INTRODUCTION

To date, the majority of empirical studies on organizational learning have focused on learning facilitators, barriers and outcomes, rather than on the specific processes of organizational learning. As Thomas, Sussman and Henderson (2001) argued, “there is a paucity of empirical research illustrating particular practices that organizations can institutionalize to achieve...learning” (p. 332). Crossan and Bedrow (2003) also cautioned that before judging the effectiveness of learning, researchers need to describe how learning occurs. Without truly understanding how organizational learning is institutionalized in organizations, companies risk losing the advantages they stand to gain from what they have learned.

A review of research on the institutionalization of learning within organizations indicates that the processes through which knowledge is embedded in the organizational level have yet to be sufficiently explained. In 1999, Crossan, Lane and White presented a model of organizational learning called “The 4I framework” that identified four key processes (intuiting, interpreting, integrating and institutionalizing) as being critical to organizational learning. Studies that have followed the 4I framework or explored its individual processes (e.g. Crossan & Bedrow, 2003; Grant, 1996; Kleysen and Dyck, 2002; Lehesvitra, 2004; Sabherwal & Becerra-Fernandez, 2005; Zietsma, Winn, Branzei & Vertinsky, 2002) have elaborated on and further developed the first three processes of the model. Even in the field of institutional theory “the processes whereby new practices are actually adopted and institutionalized on a case-by-case basis are left unspecified” (Campbell, 2002, p. 14).

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Developing a clearer understanding of the process of institutionalization is critical to supporting organizational learning.

The purpose of this study is to explore, identify and characterize the institutionalization processes and mechanisms that lead to the embedding of knowledge at the organization level. In addition, this study will examine the role, if any, that ‘institutional knowledge carriers’ play in the institutionalization of organizational learning. The implementation of sustainable development (SD) initiatives in a Canadian-based international mining company will be used to provide the specific context within which to study the process of institutionalizing organizational learning.

2 RELEVANT THEORIES

2.1 Organizational Learning

Explicitly defining organizational learning is a considerable challenge because there is no commonly held definition of the term. The literature is replete with an array of partially overlapping and partially contrasting conceptions of organizational learning. Following a review of multiple and often conflicting definitions of organizational learning, this study defines organizational learning as follows:

Organizational learning is a cyclical process through which knowledge that is learned on an individual or group level is objectified on the organizational level, institutionalized and embedded in the organizational memory.

In terms of this definition, **objectification** is the process through which shared knowledge becomes common property and is collectively accepted as being reliable, valuable and useful by the organization’s members (Probst, & Buchel, 1997; Huysman & De Wit, 2002).

Institutionalization involves a deliberate effort to incorporate knowledge at the organizational level so that it may persist and be available for future re-use. Institutionalization is the process through which the “learning that has occurred by individuals and groups...” (Crossan, Lane & White, 1999, p. 525) “...is embedded in the design of the systems, structures, and procedures of the organization” (Crossan, Lane, White & Djurfeldt, 1995, p. 347). It is through institutionalization that individual and group learning is leveraged and capitalized on in an organization (Crossan, Lane & White, 1999).

Organizational memory refers to the knowledge objects and processes that are retained in various tangible and intangible repositories (such as norms, routines, relationships and artifacts) that are accessible by organizational members to inform, direct, influence and have an affect on their actions and decisions.

The aforementioned definition distinguishes organizational learning from other phenomena which are often confused with organizational learning in the literature. Table (1) shows the distinctions between organizational learning and individual learning, knowledge transfer, changes in individual memory and the results of change management.

Table 1: Distinctions of organizational learning from similar phenomena

Phenomenon	Comparison to Organizational Learning	Sources
Individual Learning	Differs from individual learning in terms of the various knowledge stores that are accessible to and the range of potential behaviours that are available to individuals versus organizations.	Bell, Whitwell and Lukas (2002); Chonko et al. (2003); Edmonson and Moingeon (1996); Probst and Buchel (1997).
Knowledge Transfer	Is distinct from knowledge transfer in that it is necessarily applicable, remembered and used by organizational members.	Chonko et al. 2003; Koch, 1999.
Individual Memory	Is distinct from individual memory in that it is created through the shared experiences and collective past of the company’s employees.	Inkpen and Crossan, 1995; Nelson and Winter, 1982; Wexler, 2002.
Organizational Change	Does not involve a process of freezing, changing and unfreezing but rather is an ongoing dynamic process.	Weick and Quinn, 1999; Crossan, Lane and White, 1999, Jacobs, 2002.

2.1.1 The 4I Framework: A Comprehensive Model of Organizational Learning

In 1999, Crossan, Lane and White presented a model of organizational learning called “The 4I framework” which identifies four main processes (intuiting, interpreting, integrating and institutionalizing) through which learning occurs across the three organizational levels (individual, group, organization). The 4I framework is depicted in figure (1) below.

Intuiting occurs when individuals recognize patterns in their own past or present experiences and identify their potential use in their current work environment. In many ways, this process is seen as a preconscious process.

Interpreting is the process through which individuals verbalize or put into action their own insights and ideas. Language and metaphors are often used to help individuals interpret and share their intuitions with others. As the interpretation process moves beyond the individual and the ideas become embraced by the group, integration occurs.

Integrating is the collective development of a shared understanding of new ideas and of how to put them into action. When new ways of thinking and acting are recurrent and have a sufficiently significant impact on organizational action, the changes become institutionalized.

Institutionalization “is the process of embedding learning that has occurred by individuals and groups into the institutions of the organization including systems, structures, procedures, and strategy” (Crossan & Bedrow, 2003, p. 1090). Crossan, Lane and White (1999) also explained that “(i)nstitutionalizing is the process of *ensuring* that routinized actions occur” (italics added) (p. 525). This implies that there is a deliberate effort to embed knowledge at the organizational level so that it may persist and be repeated in the future

with sufficient regularity so that it can be recognized as an institution of the organization. Institutionalization is the process that distinguishes organizational learning from individual and group learning as it is through this process that ideas are transformed into institutions of the organization, which are available to all employees (Lawrence, Mauws, Kleysen and Dyck, 2005).

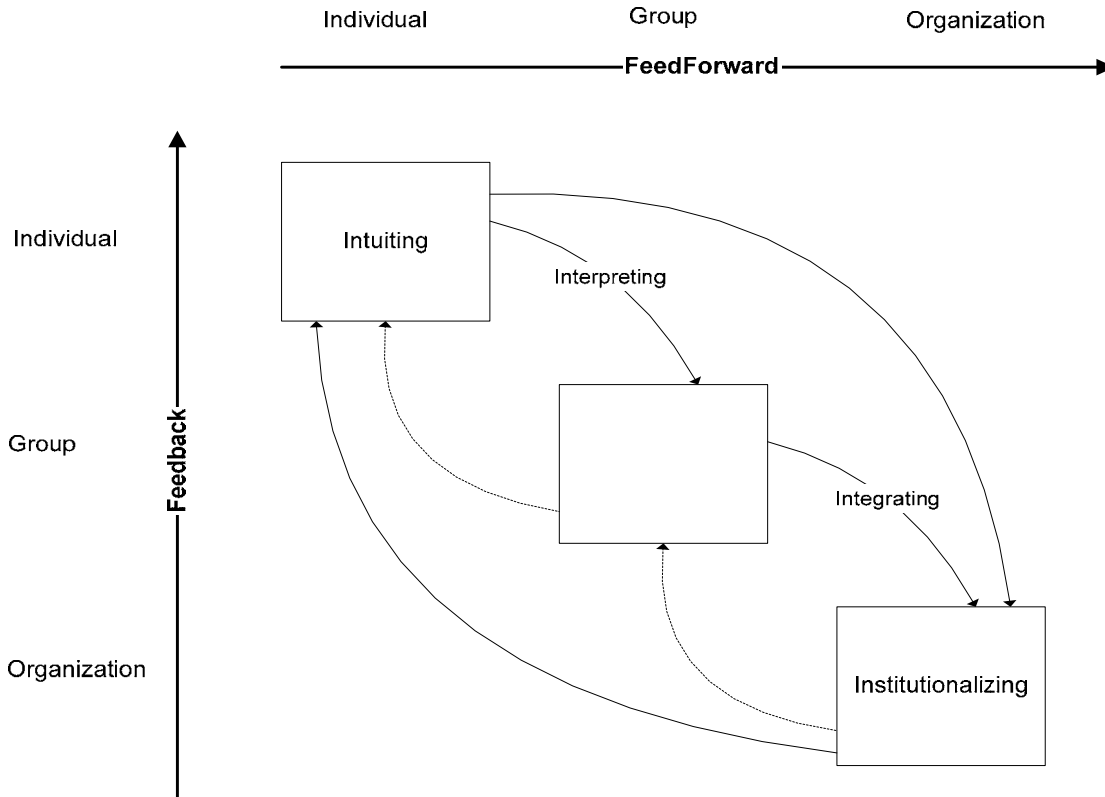


Figure 1. 4I framework of organizational learning (Crossan, Lane and White, 1999).

2.1.2 Research to Date on 4I Framework

A number of empirical studies and theory development has been conducted on the 4I framework or on its specific processes. Each of these studies or discussions has advanced knowledge on the model and/or its processes in their own unique ways. However, as will be seen from a review of a select number of these studies, none of the authors have provided enough new information to enable a sufficiently complete understanding of the processes of institutionalization within the frame of organizational learning.

In an effort to conceptually expand the 4I framework, Kleysen and Dyck (2001) introduced attending as a complementary process to intuiting to show how the environment affects learning. Championing and coalition-building, were added in parallel to interpreting and integrating respectively, to reflect the influence of power and leadership. Additionally encoding and enacting processes were added to the feedback loop (Kleysen & Dyck, 2001).

In 2002, Zietsma, Winn, Branzei and Vertinsky used the 4I framework in their longitudinal exploratory case study of the learning processes involved in the strategic renewal of MacMillan Bloedel. In this study, Zietsma et al. (2002) confirmed the presence of attending

processes 2001 and explained that a parallel active process of experimentation occurs alongside the more cognitive process of interpreting. Preliminary facilitators and enablers of the learning process were also provided. At the institutionalization phase, these facilitators included an erosion of support for previously institutionalized interpretations, endorsement of trusted niche representatives and the solution’s effectiveness for dealing with organizational problems. While these factors do touch on the process of institutionalization, the study does not provide any additional information on how the process of institutionalization occurs.

In 2002, Prochno conducted a study on the transfer of routines to a new car manufacturing plant from its parent organization. This research did not specifically use the 4I framework to describe the underlying processes, but did find evidence of interpreting and integrating activities as described in the 4I framework: “I am borrowing the concepts of ‘interpreting’ and ‘integrating’ from Crossan, Lane and White’s model of organizational learning...because they fit very well with what went on during this phase” (p. 25). In addition, Prochno also found evidence of the process of experimenting that linked interpreting and integrating – thus further supporting Kleysen and Dyck (2001) and Zietsma, Winn, Branzei and Vertinsky’s (2002) theory that experimenting occurs alongside interpreting. Prochno used institutional theory as a lens from which to analyze the process of routine formation in the new plant and found that routines are developed through a process of structuration that involved the phases of encoding, habitualization, recreation, objectification, legitimation, sedimentation and innovation.

Lehesvirta (2004) conducted a four-year ethnography of the learning processes of a leading supplier of technology to describe some of the critical elements in and links between the different levels of learning on the individual and group levels as described by the 4I framework. Lehesvirta found intuition to be initiated by conflicts and confusion. Lehesvirta saw institutionalization as a process that contextualizes subsequent interpretation and integration and as something that guides and even restricts subsequent learning but did not actually examine the process in the study.

Lawrence, Mauws, Dyck and Kleysen (2005), proposed and discussed the inclusion of power and politics into the 4I framework as a means of describing how new knowledge becomes an institution of an organization and how these institutions can be exploited to create new knowledge. These authors proposed that interpreting and integrating are facilitated by episodic power (influence and force), while intuiting and institutionalizing are facilitated by systemic power (discipline and domination). They suggested that the connection of these forms of power with the 4I processes provides a means to discuss the affect that organizational politics has on organizational learning.

Hyttinen (2005) investigated the conversion of individual knowledge creation into organizational knowledge creation and found that Crossan, Lane and White’s 4I model helped inform this process. In an analysis of 4 case studies, Hyttinen found that intuiting, interpreting and integrating were a better fit for the processes that convert individual knowledge to organizational knowledge than simpler individual knowledge creation processes. Institutionalization of knowledge was explicitly beyond the scope of her study.

In 2005 Cramer analyzed the success of 19 Dutch companies that were involved in the adoption of corporate social responsibility (CSR) from an organizational learning

perspective. Cramer used the 4I framework to analyze the learning processes involved and found 3 pre-conditions for the adoption of CSR including: commitment from senior management, money and manpower, and internal support. Because the process of implementing CSR was still underway at the time of the study, Cramer found only a few exceptional cases of institutionalization at the organizational level and thus did not provide much explanation of the process.

Additional theorization on the process of integration was previously made by Grant (1996) in which mechanisms and characteristics of integration were suggested. The two main proposed mechanisms of integration were (1) directions; in which knowledge is captured and codified into rules, procedures and operating manuals, and (2) routines; in which more difficult to capture tacit knowledge is conveyed through sequential patterns of interaction (Grant, 1996). Grant then further evaluated how knowledge integration leads to organizational capabilities based on its efficiency, scope and flexibility. This research was only theory based and was not conducted in relation to the 4I framework.

More recently, the mechanisms of knowledge integration were extended by Sabherwal and Becerra-Fernandez (2005) to include direction, exchange, socialization and internalization following an empirical study of knowledge integration at the John F. Kennedy Space Center. These authors proposed that learning by doing and on-job training are two examples of internalization. Once again, this study was not conducted relation to the 4I framework.


While each of these studies has in some way contributed to our understanding of organizational learning or the specific processes therein, they have not elaborated on the final critical process of institutionalization. Without an understanding of how learning is institutionalized in the organization at a level where it can be re-accessed, reused and influence future behaviours and actions, the cycle of organizational learning cannot be said to be completed or fully understood. If learning is not embedded in the organization, it cannot be fed back to organizational members where it can have an impact on their performance and success. Without the process of institutionalization, organizations run the risk of failing to learn from their experiences.

Table (2) below summarizes the current empirical and conceptual additions that have been made to each of the 4I processes to date.

2.2 Institutional Theory

This study uses neoinstitutional theory as the conceptual basis for exploring and characterizing the process of institutionalizing organizational learning. Institutional theory has been used and studied from a multitude of disciplines and perspectives. Studies in neoinstitutional theory have ranged from those that have viewed institutions as a source of stability and uniformity (e.g. DiMaggio & Powell, 1991a), to those that have focused on the sources and consequences of organizational change, to those that have explored the wide range of responses to institutional processes (Scott, 2003). Neoinstitutional theories from the Carnegie school (e.g. Simon, 1945; March and Simon, 1958), view individuals' behaviour in organizations as governed by organizational values, cognitive frames, rules and routines (Scott, 2001).

Table 2: Advances in research on the 4I processes of organizational learning

Process	Empirical Additions	Conceptual Additions	Authors
Intuiting	<ul style="list-style-type: none"> ○ Attending ○ Initiated by conflict or confusion 	<ul style="list-style-type: none"> ○ Attending ○ Discipline 	Kleysen & Dyck, 2001; Zietsma et al., 2002; Lawrence et al., 2005; Lehesvirta, 2004
Interpreting	<ul style="list-style-type: none"> ○ Experimenting ○ Recognition of need for knowledge sharing 	<ul style="list-style-type: none"> ○ Championing ○ Experimenting ○ Influence 	Zietsma et al., 2002; Kleysen & Dyck ; 2001; Prochno, 2002; Lehesvirta, 2004; Lawrence et al., 2005
Integrating	<ul style="list-style-type: none"> ○ Recognition of need for knowledge sharing ○ Direction ○ Exchange ○ Socialization ○ Internalization 	<ul style="list-style-type: none"> ○ Coalition building ○ Force ○ Direction ○ Routines 	Lehesvirta, 2004; Kleysen & Dyck, 2002; Lawrence et al., 2005; Grant, 1996; Sabherwal & Becerra-Fernandez, 2005
Institutionalizing		<ul style="list-style-type: none"> ○ Domination ○ Contextualizes and guides subsequent learning 	Lawrence et al., 2005; Lehesvirta, 2004

While there are many different theoretical perspectives from which to view institutional theory, Scott (2001) attempted an omnibus definition of institutions that is meant to bridge the differences between the various perspectives. According to Scott (2001),

- “Institutions are social structures that have attained a high degree of resilience.
- Institutions are composed of cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life.
- Institutions are transmitted by various types of carriers, including symbolic systems, relational systems, routines and artifacts.
- Institutions operate at multiple levels of jurisdiction, from the world system to localized interpersonal relationships.
- Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous.” (p. 48).

Although the attempt to bridge various perspectives was made, this definition is notably sociologically based. One of the key distinctions between such a definition, and those that can be found in economic and political streams of institutional theory is the notion that institutions are not necessarily the result of *conscious* human activity or design (DiMaggio & Powell, 1991b). DiMaggio and Powell explained that:

“The new institutionalism in organization theory and sociology comprises a rejection of rational-actor models, an interest in institutions as independent variables, a turn toward

cognitive and cultural explanations, and an interest in properties of supra-individual units of analysis that cannot be reduced to aggregations or direct consequences of individuals’ attributes or motives” (8).

In using this definition, this study positions itself within the neoinstitutional stream of organizational studies that has a particularly sociological basis.

This study will also focus on the cultural-cognitive elements of neoinstitutional theory. The cultural-cognitive branch of neoinstitutional theory is particularly well suited to the study of organizational learning as it focuses on social processes and the cognitive and cultural interpretations that influence the ‘taken-for-grantedness’ of organizational knowledge and practices. As Scott (2001) explained “a cultural cognitive conception of institutions stresses the central role played by the socially mediated construction of a common framework of meaning” (p. 58). Cultural cognitive neoinstitutionalists point to the power of social, cultural and cognitive frameworks and explain that individual interpretive processes are influenced by these scripts. As Douglas (1982) proposed, we should “treat cultural categories as cognitive containers in which social interests are defined and classified, argued, negotiated, and fought out” (p. 12). Cultural-cognitive neoinstitutionalists also emphasize the role that unconscious taken-for-granted assumptions play in establishing institutions. The taken-for-granted nature of these institutions, in many cases, makes other types of behaviours inconceivable (Scott, 2001).

By focusing on the sociological and cultural-cognitive aspects of neoinstitutional theory, this study will contribute to the line of research that Tolbert and Zucker (1996) argued gives institutionalism its “theoretical distinctiveness” (p. 180). This stream of neoinstitutional theory views organizations as “loosely coupled arrays of standardized elements” in which “organizational forms, structural components and rules... are institutionalized” (DiMaggio & Powell, 1991b, p. 14). The process of institutionalization is viewed as one that is essentially a cultural or cognitive process (Zucker, 1983) in which taken-for-granted scripts, rules and classifications are viewed as the basis of institutions.

3 THEORY FUSION

Cultural-cognitive neoinstitutional theories show a number of similarities with social constructivist theories of organizational learning. The first similarity between these two fields is their shared conception of knowledge, learning and institutionalization as socially constructed. From this perspective, knowledge, learning and institutionalization are viewed as being socially taken-for-granted as the result of habitualization and consensus building processes. The second similarity lies in their shared use of the process of objectification to explain their respective phenomena (e.g. Berger & Luckmann, 1966; Huysman & De Wit, 2001; Weick, 1995). In both theories, the collective acceptance and validation that are critical to objectification are necessary for learning and institutionalization to occur. The third similarity appears in the relationship between the four vehicles that act as institutional knowledge carriers, including symbolic systems, routines, relational systems and artifacts, and the knowledge repositories described in the organizational memory literature, which include cultural-cognitive symbols, routines, relationships, and artifacts as well.

3.1 Shared Basis in Social Constructivism

Berger and Luckmann (1966) explained that knowledge is socially created and recognized as knowledge. They explained that our understanding of the social world is a shared understanding that is created and maintained through the social interactions and communications that occur on a daily basis. The knowledge that is used and shared in the normal and regular routines of everyday life is known as “common sense knowledge”. While there may be different perspectives and interpretations of this knowledge, there is still a social stock of knowledge that is held in common and taken for granted as such. The social construction of knowledge is a continuously ongoing process which provides cognitive frames, models, schemas, belief systems and scripts to interpret the world (Scott, 2001). In order to navigate this socially constructed world, people make use of these frames, models and scripts through “recipe” knowledge and “typifications”. Berger and Luckmann (1966) explained that much of the social stock of knowledge is comprised of recipes for carrying out the normal routines of every day life. Along with recipes, standardized typifications – which allow people to quickly understand a situation by associating it with a known object or experience, are used to create routine patterns of interaction. These typifications and their resulting patterns form the social structure of the world.

The social constructionist theory rejects a rationalist perspective which focuses on individualistic and asocial behaviours. Instead, Meyer and Rowan (1977) explained that socially constructed rules and norms constitute the basis for the actions that specific actors can take. This approach emphasizes “the extent to which individual choices are governed by... mutual social obligations” (Scott, 2001, p. 68). Instead of action and interpretation originating ‘inside’ the head of individual actors, this view focuses on the social and collective processes that lead to meaningful activities (Dacin, Ventresca & Beal, 1999). In this view, while actors may still pursue their own interests, their options and choices for action are socially constructed (Scott, 2001).

3.1.1 Institutionalization as a Process of Social Construction

According to a social constructivist perspective, institutionalization is both a process and a property value (Berger & Luckmann, 1966; Meyer & Rowan, 1977; Zucker, 1977). First, it is the process by which actors transmit what is socially defined as real. Meyer and Rowan (1977) explained that institutionalization involves the process through which socially accepted conventions take on the status of being socially accepted in social thought and action. Second, it is a property of those acts and actors who can be defined as a “more or less taken-for-granted part of social reality” (Zucker, 1977, p. 728). Meyer and Rowan (1977) added that these institutionalized actors and actions may not only be taken-for-granted but may also be supported by law or public opinion. Zucker (1977) further qualified the notion of institutionalized acts as a property value by adding that these acts must be both objective and exterior in social reality. “Acts are *objective* when they are potentially repeatable by other actors without changing the common understanding of the act” (p. 728) and they are *exterior* in that the cognitive interpretation of these acts defines them as facts in social life. It is the nature of institutionalized acts and actors that allow them to have a stable and similar meaning for everyone in the social world (Scott, 2001).

Objective acts that can consistently be repeated with minimal thought and effort develop into patterns, contain their own set of recipe knowledge and can be seen as habitualized.

Habitualization allows acts to be embedded in routines and in the taken-for-granted stock of knowledge that enables the act to be repeated in the future with the same amount of effort. Within the social construction perspective, the process of habitualization can be said to precede any institutionalization (Berger & Luckmann 1966).

Institutions generally develop in groups with considerable numbers of people into which new comers can be socialized (Berger & Luckmann 1966). This view sees actors as socially embedded in collectively defined relationships that determine which cognitive frames, models, schemas, belief systems or scripts are available to them (Fligstein, 1997). In this environment, institutionalized actions become predictable and increasingly controlling as their enactment and repetition narrows the choices and options that are available in any given situation. The institutions thus exist outside of the actors and are difficult to change or avoid simply as a result of their taken-for-granted nature. Whereas habits can be recognized as instances of “here we go again”, institutions are socially understood as ‘this is how these things are done’ (Berger & Luckmann 1966, p. 56).

3.1.2 Organizational Learning from a Social Construction Perspective

The social constructionist view of learning provides an integrative and encompassing alternative framework for understanding learning within organizations (Richter, 1998). Social construction is used in organizational learning studies as the basis for conceiving of learners as social beings who build their understanding of the world through social interactions within socially constructed contexts (Easterby-Smith, Crossan, & Nicolini, 2000). Within this social constructionist view, learning is not seen as an individual or isolated activity. Richter (1998) explains that learning and knowledge are not simply embedded in the cognitive minds of individuals but exist in the evolving memberships and relationships that individuals have with various groups and the society as a whole. Learning becomes a part of all social activities in which people interact (Berger & Luckmann, 1966; Richter, 1998; Lave & Wenger, 1991; Chonko et al., 2003). Learning and knowing can be seen as rooted in the relationships that exist between organizational members.

According to the social constructionist approach, organizational learning can be seen as a process of institutionalization in which individual knowledge that has received some degree of consensus, can be recognized as organizational knowledge (Huysmann & De Wit, 2002). As Crossan, Lane and White’s (1999) acknowledged, “...that which becomes institutionalized in organizations has received... a certain degree of consensus or shared understanding...” (p. 530). Knowledge that has been learned reaches the organizational level once it has been socially accepted and taken for granted as part of the reality of the organization. The socially objectified meanings of the institutionalized acts are conceived of as ‘knowledge’ and are socially transmitted as such. “This is the knowledge that is learned in the course of socialization” and this objectified institutionalized knowledge becomes part of the organization’s script of “how these things are done” (Berger & Luckmann, 1966, p. 66). At this point, this socially constructed and institutionalized knowledge influences and becomes part of the organization’s own store of knowledge in the form of routines, rules, procedures, paradigms, structures of belief, strategies and culture (Levitt & March, 1988). Likewise the knowledge that has been learned can be seen in practices and processes that have become habitualized and “sufficiently regular and continuous...to be described as institutions” (Huysmann & De Wit, 2002, p. 30)

3.2 Processes of Objectification

Berger and Luckmann (1966) explained that habitualized actions that persist over time and are passed to subsequent generations along with the institutions that represent them, exist above and beyond the people who enact them and become a crystallized part of the socially constructed reality through the process of objectification. Objectification is the process through which the institutionalized world is socially constructed and interpreted. More specifically, it is the process through which human created products and activities attain the character of being objectively and commonly understood in a social world.

Objectification is part of a three phase cycle through which people interact with a social world. Scott (2001) succinctly describes these three phases as follows:

1. *Externalization* – the production in social interaction, of symbolic structures whose meaning comes to be shared by the participants;
2. *Objectification* – the process by which this production “comes to confront him as a facticity outside of himself” as something “out there” as a reality experienced in common with others; And only then comes
3. *Internalization* – the process by which the objectivated world is “retrojected into consciousness in the course of socialization” (p. 40).

Berger and Luckmann (1966) explained that these three phases are part of a process of institutionalization. Objectification is the phase in which objects and symbolic systems come to have a reality of their own. For instance, a subjective expression of violence can be seen through facial, verbal or bodily movements and gesticulation. Violence however, can also be objectified in a weapon. A weapon, which is a human product, carries with “its own reality” in that a weapon has a general association with violence that is understood by anyone who knows what a weapon is. These objectified meanings are recognized as socially constructed knowledge (Berger & Luckmann, 1966). The socially held stock of knowledge grows as experiences are objectified, retained and accumulated. This accumulation, however is selective and the objectified knowledge actually acts as a control and helps determine what other knowledge will be retained, or forgotten, by individuals and society.

3.2.1 Role of Objectification in Organizational Learning

Learning at the organizational level can only occur once the learning and knowledge at the individual and group levels have been collectively recognized, accepted and used as organizational knowledge. This implies that the knowledge must be collectively validated as being reliable and valuable for use in the organization and be institutionalized as such. As Rowley (2000) put it, a shared reality is based on valid, transferable, reliable and accurate objectified knowledge. While the process of creating a shared reality, of collectively accepting knowledge, can be long, drawn out and might even occur unconsciously, it is of significant strategic importance. Huysman and De Wit (2002) explained that collective acceptance is “the link between individual and organizational learning” (p. 39).

Huysman and De Wit (2002) borrowed Berger and Luckmann’s (1966) three phases of institutionalization to explain the process of institutionalization in relation to organizational learning. They explained that this model has proven relevant when analyzing organizational

learning processes as evidenced in research conducted by Huysman (2000) and Pentland (1998). Their model shows that organizational learning can be viewed as consisting of the same three moments that were described by Berger and Luckmann (1966).

Figure (2) below, shows how Berger and Luckmann’s three phases of institutionalization (externalization, objectification and internalization), carry knowledge from the individual level, to the group level and then eventually to the organizational level.

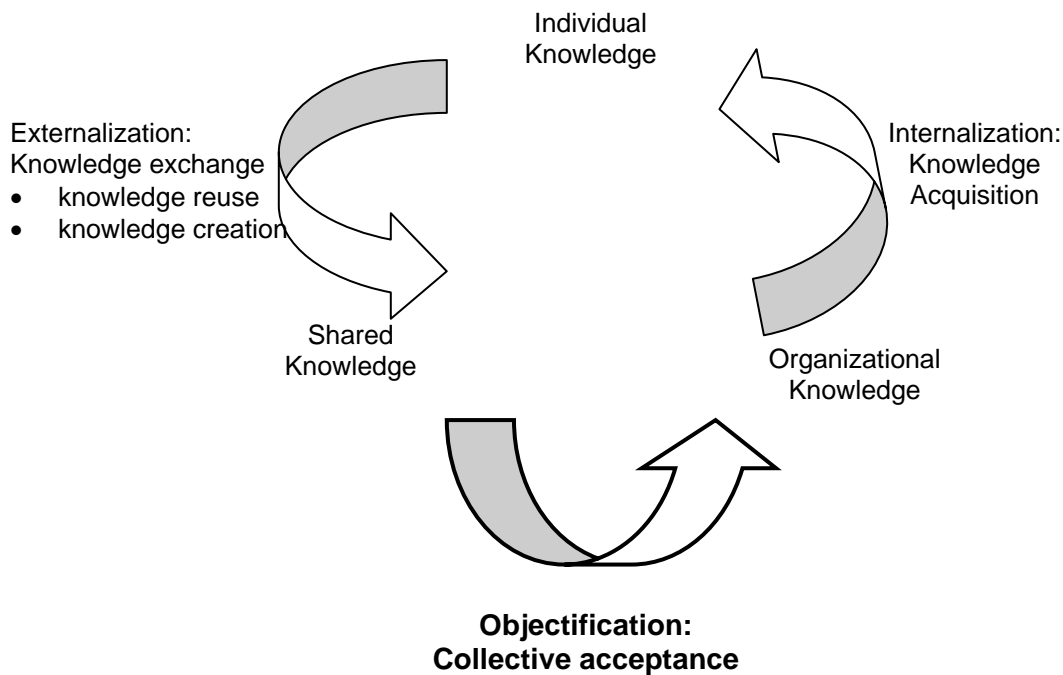


Figure 2: The process of institutionalization with respect to organizational learning processes (Huysman & De Wit, 2002, p. 35).

As can be seen in this model, objectification is the process through which shared knowledge is collectively accepted and becomes a common property of an organization’s members (Huysman and De Wit, 2002; Probst, & Buchel, 1997). When the organization, as a collective, begins to accept local and shared knowledge as organizational knowledge and uses it in that manner, that knowledge has been objectified. Huysman and De Wit (2002) explain that this process is one that is more akin to sedimentation than to knowledge sharing which does not necessarily lead to organizational learning.

3.3 Overlap in Institutional Knowledge Carriers and Organizational Memory Repositories

Institutional knowledge and ideas can be said to be embedded in and carried by four vehicles or carriers (Bjork, 2004; Scott, 1995, 2001, 2003). These carriers can be broken down into four broad categories, including symbolic systems, routines relational systems, and artifacts. These carriers can be described as follows:

- **Symbolic systems** – carry institutional knowledge through different culturally symbolic schemata in which meaningful information is coded (Scott 1995, 2001, 2003).

Symbolic systems carry institutional knowledge through culture, which encompasses the organization’s notions of rules, values, classifications, representations and logics. Each of these elements are subjectively internalized into the cognitive frames and beliefs of actors but can be examined as a social phenomenon that is external to any particular actor. Symbolic systems vary in the extent to which they promote consistency of action, stability, uniformity and order (Scott, 2001). These systems exist not only as “widely held beliefs” that need to be taken into account but also as ideas and values that guide actors’ behaviour (Scott, 2001). Within environmental management efforts, the adoption of ISO 14000, while strictly voluntary, can be seen as a symbolic adoption of socially and economically endorsed sustainability activities.

- **Routines** – carry institutions through habitualized behaviour and the patterns of action that reflect taken-for-granted tacit knowledge held by the actors enacting them (Scott 1995, 2001, 2003).

Routines can be defined as “patterned sequences of learned behaviour involving multiple actors who are linked by relations of communication and / or authority” (Cohen & Bacdayan, 1994, p. 55). Routines arise in areas where action is repeated to the point of eliminating individual thought in the enactment of the action. These patterns of action and habitualized behaviours carry tacit knowledge that is rooted in “deeply ingrained habits and procedures based on inarticulated knowledge and beliefs” (Scott, 2001, p. 80). Organizational stability and success depend on the appropriate use and transfer of these routines because they provide a consistent framework of responses to familiar and unfamiliar environmental stimuli. Routines are distinguished from standard operating procedures (SoPs) in that SoPs are explicitly formulated and have normative standing, whereas routines are *emergent established* patterns of operating that are often distinct from prescribed operations – in other words, routines reflect the way work is really done (Cohen & Bacdayan, 1994).

- **Relational systems** – carry institutional knowledge through both interpersonal and inter-organizational links and relationships (Scott 1995, 2001, 2003).

Institutions can also be carried and influenced by the patterns of expected behaviours that form the relationships found in networks of organizational positions. These relationships are embedded in a broader set of socio-cultural forces that influence how groups interact, how individuals act within an organization and the boundaries of organizational opportunities and constraints (Dacin et al, 1999). Rules that guide behaviours dictate the nature of the social roles and positions that can be found in organizations (Scott, 2001). Within organizational fields, some relational systems are widely shared across many organizations, leading to structural isomorphism (similarities within organizational forms). Other times, the relational systems may be distinctive to a particular organization leading to localized identities and behaviours, and ultimately resulting in organizational uniqueness.

- **Artifacts** – carry institutional knowledge through the material culture that is created by actors to assist in the performance of tasks (Scott 1995, 2001, 2003).

Artifacts embody and represent institutional knowledge that can be viewed as elements of material culture. Modern organizational material culture is often conceived of as the technologies that are embodied in both hardware and software. These artifacts can be examined in terms of “the socially constructed nature of the technology and the extent to which its effects are mediated by situational factors and interpretive processes” (Scott, 2001, p. 81). Artifacts can carry far greater cultural significance than the value of the object would suggest. For instance, the Stanley cup carries far greater significance and value for the winning hockey team than the material of the cup itself does.

3.3.1 Organizational Memory Repositories

It has been argued that organizational learning is not complete until learning is embedded in the organizational memory (OM) (Argyris & Schön, 1978; Huber, 1991; Crossan, Lane and White, 1999; Li, Zhuang and Ying, 2004). Knowledge that has been learned is retained in the organization’s memory, and then influences what may be learned in the future. Understanding how knowledge is institutionalized in the OM has been found to be critical to the management of knowledge and learning within an organization (Chang, Choi & Lee, 2004; Stein 1995; Li, Zhuang & Ying, 2004). Following a review of multiple definitions of OM in the literature (e.g. Argyris & Schön 1978; Walsh & Ungson, 1991; Stein, 1995; Moorman & Miner, 1997, Lukas & Bell, 2000; Ackerman, 2000; Jennex & Olfman, 2002; Chang, Choi & Lee, 2004; Li, Zhuang, Ying & 2004 etc...) this study defines organizational memory as:

The knowledge objects and knowledge processes that are retained in various tangible and intangible repositories that are accessible by organizational members to inform, direct, influence and generally have an effect on their actions and decisions.

Various authors (e.g. Walsh and Ungson, 1991; Hargadon and Sutton, 1997; Bannon and Kuutti, 1996; Argote and Ingram, 2000) have argued that one can trace changes in organizational knowledge through changes in OM repositories. While there are many different conceptualizations of OM repositories (e.g. Walsh and Ungson, 1991; Stein, 1995; Lukas and Whitwell, 2000; Moorman and Miner, 1997; van der Bent, Williams, and Paauwe, 1999; Wang and Ahmed, 2003) they can all be grouped into four broad categories. The first category represents beliefs, values, norms, myths, stories etc..., the second category represents routines, standard operating procedures, scripts, etc..., the third category represents people, their relationships and events etc..., and the fourth category represents physical artifacts. van der Bent, Paauwe and Williams (1999) explained that the elements within these categories are in fact “carriers” of organizational memory. These are each be elaborated upon below.

Organizational learning is often viewed as incomplete until it has been embedded in the organizational memory. Huber (1991) explained that “to demonstrate or use learning, that which has been learned must be stored in memory and then brought forth from memory” (p. 106). Working with this assumption, organizational memory can be seen as playing a critical role in the institutionalization of organizational learning. Like the institutional knowledge carriers described above, organizational memory plays similar roles of constraining and enabling organizational opportunities and behaviours. Organizational memories enable an organization to perform daily tasks and respond to crises based on

ways that have worked in the past (Kransdorff & Williams, 2000). At the same time, these memories can constrain the organization when they are based on past activities that are no longer applicable in current situations but are still relied on and used nonetheless (Walsh and Ungson, 1991; Cohen and Bacdayan, 1994).

3.3.1.1 OM Repository Category of One: Cultural-Cognitive Symbols

Moorman and Miner (1997) explained that memory is found in organizational frames of reference, models, values and shared stories. Stein (1995) explained that these entities form the schemas and cognitive maps that are used by employees to process information more proficiently in relation to their own work tasks and the organization’s goals. These schemas are shared mental models of the organization’s values and beliefs and can be viewed as cognitive maps according to Argyris and Schön (1978), Hedberg (1981) and Fiol and Lyles (1985). These cognitive maps, which are replete with icons, symbols and myths, form the basis of the organization’s culture and contribute to organizational expectations and the outlining of appropriate behaviours and responses (Walsh & Ungson, 1991). Walsh and Ungson explained that these cultural elements are stored and carried throughout the organization through language.

3.3.1.2 OM Repository Category Two: Routines

Moorman and Miner (1997) explained that repetitive learned behaviors are the basis of the organization’s routines which encode both formal and informal organizational knowledge. This knowledge is made up of the lessons that have been learned through past experiences that act as the motivators and logic of established routines (Levitt & March, 1988). Procedural memory (“how-to”) is believed to be at the root of organizational routines, including how they arise, stabilize and change. Routines and standard operating procedures are a means of cutting down on the cost and time wasted in repeatedly deliberating on how to accomplish a given task (Cohen & Bacdayan, 1994). Routines and scripts are less formal descriptions of how to accomplish work activities and how to respond to incoming information from the environment (Gibson, 2001). Scripts often develop into taken-for-granted ways of working. Stein (1995) explained that scripts are formal descriptions of the appropriate sequencing of events and activities. These scripts and routines capture the organization’s memory of how work should be carried out.

3.3.1.3 OM Repository Category Three: Relationships

Organizational memory can also be retained in the relationships that exist between organizational members. Relationships and social networks in the organization are a source of organizational memory. These structures retain memories related to ‘who knows what’ in the organization (Stein, 1995; Cross & Baird, 2000). Social networks also retain collectively interpreted memories that might not be stored or accessible elsewhere in the organization (Olivera, 2000). Organizational roles can also be viewed as a script that describes a shared set of expectations about how people interact with each other in the organization (Walsh and Ungson, 1991).

3.3.1.4 OM Repository Category Four: Artifacts

Artifacts, such as documents, knowledge products, files and IT tools, all contain, to varying degrees, a record of past actions and behaviours. These artifacts thus reflect prior learning and embody organizational memories (Moorman & Miner 1997; Stein 1995). Walsh and Ungson (1991) explained that physical artifacts of the organization can also be found

outside of the organization in competitors’ records of the organization’s activities, news sources, government files etc...

The institutional knowledge carriers reviewed above can be directly mapped onto the categories of organizational memory “carriers” through the specific types of knowledge that is carried by each.

Table (3) below maps the institutional knowledge carriers onto the organizational memory repositories through the elements that are retained and carried by each.

Table 3. Mapping of institutional knowledge carriers onto organizational memory repositories.

Institutional knowledge carriers	Elements of OM retained/ types of knowledge carried	Category OM repositories
Symbolic systems	Beliefs, values, norms, myths, stories, events, etc...	Cultural-cognitive symbols
Routines	Routines, standard operating procedures, etc...	Routines
Relational systems	People, relationships, social networks, roles, etc...	Relationships
Artifacts	Physical artifacts, IT, knowledge products, external documentation, etc...	Artifact

This table shows how the knowledge that is retained in the organization’s cultural-cognitive symbols (beliefs, values, stories etc.) can also be viewed as being carried across the organization through symbolic systems; knowledge that is embedded in the organization’s routines, rules, scripts and the like are carried through routines; knowledge that is retained in the organization’s relationships (which include people, social networks etc...) can be viewed as being carried across the organization through its relational systems; and finally, knowledge that is embedded in the organization’s physical artifacts, IT or knowledge products are carried in institutionalized artifacts.

Figure (3) below summarizes the fusion of institutional theory and organizational learning theory.

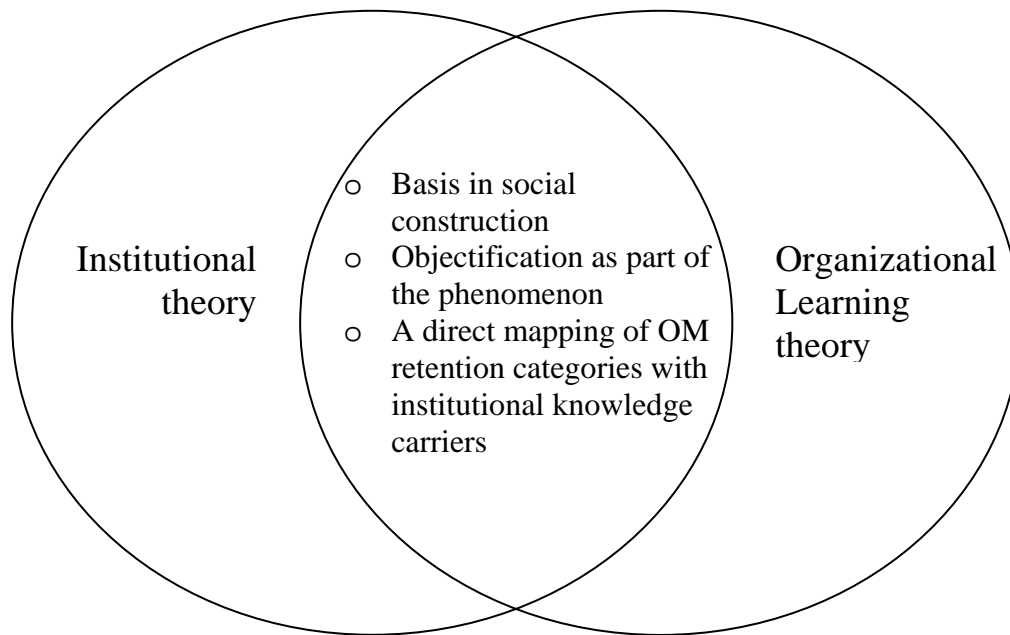


Figure 3: A summary of the similarities between institutional theory and organizational learning theory.

4 RESEARCH METHODOLOGY

Crossan, Lane and White (1999) argued that “(o)rganizational learning can be conceived of as a principal means of achieving the strategic renewal of an enterprise” (p. 522). Therefore, exploring the process of the institutionalization of organizational learning is most effectively accomplished by focusing on a particular strategic issue within an organization. This study focuses on the institutionalization of sustainable development (SD) as the specific strategic issue that requires the institutionalization of organizational learning. The implementation of SD initiatives can be closely linked to three fundamental organizational learning processes: strategic issue recognition and diagnosis, learning through knowledge exploration and exploitation, and validation of new ideas which are institutionalized to transform the organization’s cultural domain (Kennelly, Rindova & Ellerbusch, 1999). Kennelly, Rindova and Ellerbusch (1999) have pointed out that while there is a plethora of research into how organizations respond to environmental issues, “less effort has been focused on understanding how... formal organization-wide principles, guidelines, standards of performance and standard operating procedures become a part of the corporate ethos. In other words how do organizations learn” (p. 199) to institutionalize SD initiatives into their businesses?

This study is being conducted with a predominant publicly traded Canadian-based mining company (hereafter referred to as B&A) with more than 500 operating facilities in 55 countries and regions and roughly 68, 000 employees that supplies raw material as well as produces finished products. B&A began integrating product life cycle work in the 1990s and produced its first environmental report in 1996. In 2000 it initiated its own climate change program, began its triple bottom line reporting and produced its first regional and business group sustainability reports. In 2002 B&A established its current Environmental, Health and Safety (EHS) program and published its first corporate wide sustainability

report. B&A focuses on 8 strategic sustainability areas including energy use, climate change, natural resource stewardship, community development, employee well-being, environmental release, innovation and industry shifts and product stewardship. B&A has been recognized by many national and international groups for its sustainable development and environmental work including being ranked in Canada’s *Best 50 Corporate Citizens* and *Best International Corporate Citizen* by Corporate Knights; Fortune Magazine’s social responsibility index; as an industry leader on the Dow Jones Sustainability Index; and with a GLOBE Award for Environmental Excellence. B&A is also a participant in the UN Global Compact and an active member in the World Business Council for Sustainable Development.

4.1 Data Collection and Analysis

This study uses a grounded theory methodology. Grounded theory (either directly, or in an adapted form) has been successfully used in the fields of organizational learning and institutional theory by such authors as Crossan and Bedrow (2003), Zietsma et al. (2002), Prochno (2002), Zilber (2002) and Greenwood and Suddaby (2006). This study will triangulate data collected from organizational documents and interviews. Arneson (1993) explained that the collection and analysis of historical documents for an organization lends a perspective on institutional processes that can give insight into an organization’s culture and the social processes that have resulted in its present condition. It has also been argued that it is only through “historical investigations that we are able to show the dynamic features of social structures for organizational learning” (Berends, Boersma & Weggeman, 2003, p. 1050).

The first phase of data collection involved full access to B&A’s corporate intranet which resulted in the collection of over 2 GB of data. Every document that could be downloaded or copies was collected over a two week period in an effort to reduce the number of visits to headquarters for data collection. Mindmanager software, a tool which permits visual representation of groups of information and their relationships, was used to map out the structure of the various sections of the intranet. This procedure facilitated cross-checking of the data collected with the data available on the intranet as well as a reconstruction of the relationships between the documents. A second round of data collection was completed to acquire documents that were unsuccessfully copied in the first round and all subsequent missing documents were requested and later provided by a B&A contact. These documents are being used to map out the story of the institutionalization of SD practices at B&A and will be used to guide, cross-check and augment the interview data. Interviews will be open-ended in nature, will follow a general interview guide and interviewees will be selected through the process of theoretical sampling. The purpose of the interviews is to gain additional insight and depth of understanding into the process of institutionalization that may not be identifiable through the document analysis. Analysis is currently being done on B&A’s SD reports with subsequent documents being selected through theoretical sampling. The SD reports, starting with the earliest and moving to the most recent, were chosen as the first group of documents to analyze because they contain the most complete representation of B&A’s interpretation and institutionalization of SD.

Analysis has begun with NVIVO, a qualitative analysis program which is highly suited to grounded theory analysis. Each document is converted into an appropriate format (.doc, .txt, .rtf) and most images are removed from the text, and replaced with a simple annotation

of its content and location in the original document (generally .pdf or .html). This step improves the speed of NVIVO which manages pictures with a certain degree of difficulty. Through microanalysis, which analyzes word by word and line by line, codes are applied to the text to represent conceptual (rather than descriptive) analysis. These codes are derived from the data rather than from existing literature on the process of institutionalization to ensure that the final theory is truly grounded in the data. That being said, the coding process is guided by an organizational learning and institutional theory perspective in order to highlight the substantive issues regarding the research questions of this study. All codes are potential indicators of the phenomenon in question (i.e. the process of institutionalization) and are considered provisional until they are repeatedly found in the data.

For each code, a memo is created to describe the meaning of the code. These memos are further developed as the coding continues and new properties and dimensions of the codes are identified. Following this phase of coding, these memos are compared for similarities and differences and are grouped into categories that conceptually represent the data. These categories are further developed in terms of the properties and dimensions of the phenomena they represent, the conditions that give rise to them, the actions by which they are expressed and the consequences that they produce. These specifications help define the categories and give them their explanatory powers. By constantly comparing the data and grouping similar phenomena that have the same conceptual label, the core concepts of the theory begin to accumulate (Corbin & Strauss 1990). As the core concept develops, it is continually revised based on subsequently analyzed data. The constant comparing with newly collected data helps develop precision (in that phenomena are grouped only will similar phenomena and categories are subdivided when properties of a phenomenon differ from other similar phenomena) and consistency (all similar phenomena are always grouped together). The final core category, and the relationships between it and other categories, is progressively abstracted and used to develop the overarching theory of the process of institutionalization.

5 CONCLUSION

After reviewing the literature on organizational learning and the theories of institutionalization, a preliminary model of the process of institutionalization emerges. This model depicts some of the prerequisite steps in the institutionalization of organizational learning. In viewing the process of organizational learning from the 4I framework, pre-institutionalization can be said to involve processes of intuiting, interpreting, integrating, habitualizing, consensus building, collective validation and acceptance and objectification of knowledge. After these prerequisite processes have occurred, knowledge has the potential to become institutionalized and embedded in the organizational memory. In the model below, the column of institutionalization represents the questions that will be explored in this study:

- What are the mechanisms through which learning is institutionalized in an organization?
- What are the characteristics of the process of institutionalization?
- What roles do institutional knowledge carriers play in the institutionalization of organizational learning?

Once knowledge is institutionalized, it can be found in the various repositories of the organizational memory which have been found to play a role in controlling and determining what knowledge is retained and forgotten by the organization. Figure (3) below depicts a preliminary model of the process and components of institutionalization based on the literature reviews.

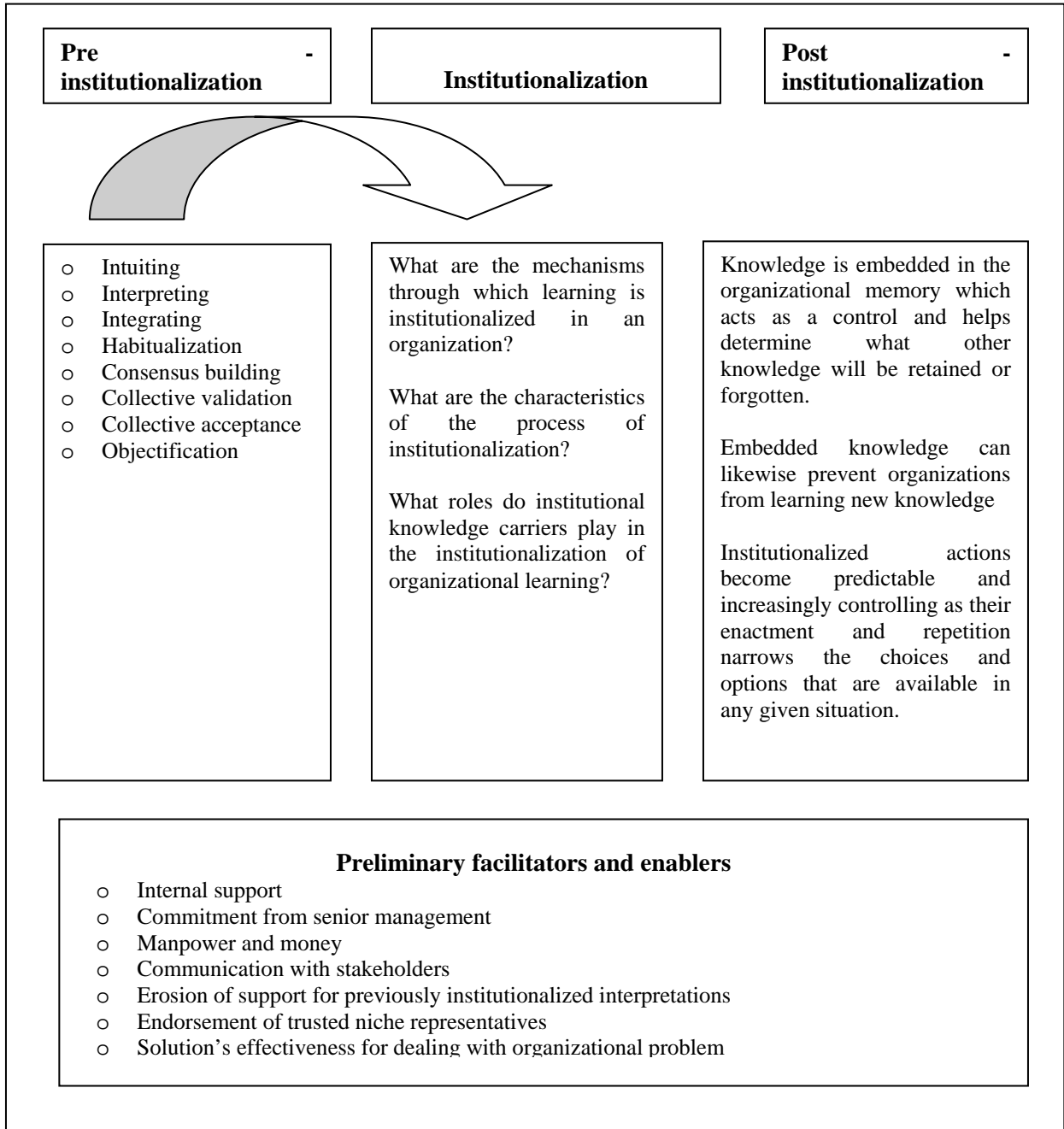


Figure 3: Preliminary model of the process and components of institutionalization

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Proceedings of OLKC 2007 – “Learning Fusion”

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