A Historical Review of the Role of Theory in Management Research

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Abstract

The aim of the paper is to provide a historical review of theory's role in management research. The literature has a plethora of definitions about theory, emphasizing the diversified nature of theory, the meaning and the usefulness of a theory across various disciplines. A theory could be used as a framework to explain a particular phenomenon and the relationship among studied variables. Theories could be inductive or deductive in nature. In order to be able to explain the conceptual relationship between variables a good theory must have four important properties: (a) definition, (b) domain, (c) relationships, and (d) predictions. This alters the complementary relationship between theory and research. The complementary relationship alters theory as a guiding force for the deployment of a research, and theory development depends on research for ratification and validation. Hence, a research-worthy problem is the cornerstone in the relationship among theory and research. A research-worthy problem sets the pathway in testifying or developing a theory through empirical research. The theoretical contribution concerns theory's originality and utility, representing the contribution of incremental insights to the body of knowledge and the way a theory practically solves problems respectively. The dynamic theory of organizational knowledge creation was used in examining the role of theory in management research. The analysis led to two defects concerning the unclear notion of tacit knowledge within an organizational context, and the empirical validity of the SECI model in western countries.

Part I: Nature and Types of Theories

The first step in exploring the nature and types of theories requires an understanding of theory definition (Upton & Egan, 2010; Locke, 2007; Wacker, 2008). Authors such as Upton and Egan (2010), Locke (2007), Wacker (2008), Gelson (2006) and Harlow (2009) gave a plethora of definitions about theory, emphasizing the diversified nature of theory, the meaning and the usefulness of a theory across various disciplines. The literature, therefore, does not provide a universally accepted approach in defining and utilizing a theory in different disciplines (Locke, 2007; Zahra, 2007). Thus, no consistent explanation of what constitutes a theory is given (Wacker, 2008; Karlsen, Overland & Karlsen, 2010; Upton and Egan, 2010). The following section aims to collate a comprehensive explanation of what constitutes a theory based on the critical review of the work of Wacker (2008), Gregor (2006) and Karlsen et al. (2010).

Views of What Constitutes a Theory

The major conclusion from reviewing the existing literature is the diversity of definitions

given about theory (Wacker, 2008; Gregor, 2006; Stewart et al., 2011; Gelson, 2006; Harlow, 2009; Henderikous, 2010). Gregor (2006) defined theory as a theorem used to explain the relationship of variables, which are based on the philosophical foundations of a discipline. Wacker (2008), however, used theory as an effective explanation of conceptual relationships observed in a particular phenomenon. Finally, Karlsen et al. (2010) used theory as an organized system of laws that helps in examining and better understanding various phenomena and relationships through testified predictions and scientific rules. As such, Karlsen et al. (2010) identified three major components of a theory.

The first element concerns a regulatory framework that determines the relationship among variables. The second element of theory represents a systematic view of various phenomena and their relationships, whereas the third element involves hypothesis testing and predictions. With respect to the differences found in theory definition of Gregor (2006), Wacker (2008) and Karlsen et al. (2010) a common characteristic concerning the use of a theory is concluded. A theory is used as a framework to explain a particular phenomenon, and the relationship among variables. Levy and Ellis (2006) underlined that irrespective of what constitutes theory in various disciplines, theories need empirical validation in order to sustain theory applicability.

Theory and hypothesis.

Wacker (2008) also agreed that in order for a theory to advance knowledge, hypothesis testing is needed. A hypothesis is a proposition which attempts to clarify the positive or negative relationship of a study's variables in a unified way (Zaki, Bah & Rao, 2011; Gelso, 2006). It sets the baseline for an experimental design that testifies the plausibility of the relationship among variables (Zaki et al., 2011). A hypothesis is an inseparable element of a theory which is used as a starting point of testifying or explaining the relationship of variables in observed phenomena (Gregor, 2006; Wacker, 2008; Stewart et al., 2011).

Theory, paradigm and model.

The explanation of phenomena, however, is highly influenced by the researcher's worldview (Henderikous, 2010). Steward et al. (2011) and Henderikous (2010) influenced by positivism worldview, which through scientific reasoning promotes paradigm and modeling as alternatives to theory. Paradigm guides an investigator to understand and use a scientific approach in exploring human activities. The paradigm focuses on the social aspect of a phenomenon, which advances the social nature of the scientific process (Henderikous, 2010). A model, therefore, is an axiomatic method, through which a set of propositions is set in a logical sequence that explains an observation or a phenomenon (Christensen, 2011). Paradigm and modeling are used in order to testify and trace the speculative nature of theory through scientific reasoning and axiomatized scientific laws and procedures (Steward et al., 2010; Christensen, 2011).

Theoretical concept. Study results of Boxenbaum and Rouleau (2011) indicated that due to insufficient empirical material, it is not possible to gain full understanding of the complicated organizational phenomena. A theoretical concept could, indeed, be used in explaining such complicated organizational phenomena in a way that makes sense (Alvesson & Karreman, 2007). Theoretical concepts are general abstractions observed in

empirical phenomena and when theoretical concepts are specified they might become constructs that fortify theory's clarity and inherent structure (Boxenbaum & Rouleau, 2011). Studies by Wacker (2008), Gregor (2006) and Zahra (2007) indicated that in order to constitute a good theory and to be able to explain the conceptual relationship between variables, a theory must have four important properties: (a) definition, (b) domain, (c) relationships, and (d) predictions.

Definition and domain.

Stewart et al. (2011) proposed that a definition represents a system of ideas used to explain a particular phenomenon. The definition should be based on the philosophical foundations of a discipline (Stewart et al., 2011). Philosophical foundations set boundaries and limits, specifying the purpose of using a theory, answering who and what variables and constructs should be considered in a domain (Gregor, 2006). Gregor (2006), Zahra (2007) and Wacker (2008) concluded that a major characteristic of a theory's domain should be the careful subtraction of invalid and unnecessary factors. A theory's domain should specify when and where a theory should be used, promoting theory generalizability and abstractness (Zahra, 2007). Generalizability reflects the ability of a theory to be applied in various research settings, thus, theory abstraction characterizes the operationalization and the ability of a theory to be applied over time and places (Gregor, 2006; Wacker, 2008).

Relationships and predictions.

In exploring the relationship among variables, the operationalization of a theory leads to outlining patterns of causality (Wacker, 2008). Steward et al. (2010), controversially, argued that the most important aspect in examining emerging relationships is not only to outline patterns of causality, but also to examine the possibility of creating a new theory. Although researchers such as Gregor (2006), Christensen (2011) and Upton and Egan (2010) emphasized the importance of understanding the relationship among variables, no reference was made to the properties of the variables. Wacker (2008) indicated that the relationships of the variables should be based on fecundity and internal consistency. Fecundity and internal consistency assists, for example, in identifying emerging new theories or research paths for further theory testing and predictions (Wacker, 2008).

Predictions are normative in nature, providing a clear estimation of what researchers expect from an event, or predictions could be statistical in nature, expressing the probability of an event to occur (Karlsen et al., 2010). Steward et al. (2011) and Wacker (2008) stated, respectively, that a prediction's falsifiability or refutability is a critical property to be considered. The more unlikely a prediction could be, the more consistent the theory would become (Steward et al., 2011). Therefore, obvious conclusions from a study violate falsifiability or refutability criterion which is related to the degree that a theory is worth to be used in a field (Alvesson & Karreman, 2007).

Nature of Theories

Authors such as Zahra (2007), Locke (2007), Upton and Egan (2010), Gregor (2006), Wacker (2008) and Stewart et al. (2011) proposed that the nature of a theory is affected by the purpose and the way a theory is used or testified in a given field. The nature of a theory affects the research framework within which the research was designed, and the data was collected and analyzed (Wacker, 2008). A theory, therefore, could be inductive (Locke, 2007) or deductive

in nature (Henderikus, 2007).

Deductive theories.

The deductive nature of a theory is directly related to positivism which is mainly expressed through quantitative research inquiries (Henderikous, 2010). The deduction holds that a conclusion is the product of a hypothesis that has been testified, assisting researchers to move from a general abstraction to a particular explanation (Brahma, 2009). The challenge for deduction, however, is to secure research validity and soundness (Henderikous, 2010). The weakness is found in any occurring observation that might generate empirical evidence and generalizations that can be explained through theories that consist of unobservable facts (Brahma, 2009).

Inductive theories.

Locke (2007), however, debates the effectiveness of the hypothetico-deductive approach in research, supporting that in most cases, the fact comes before the hypothesis. As a result, inductive reasoning and inductive theories are more effective in observing differences and similarities among phenomena. Inductive reasoning contributes in discovering causal relationships, enhancing theory generalization (Cao, Han, Cui & Kaicheng, 2011). Theory generalization, however, requires a valid philosophical axiom as its foundation (Cao et al. 2011). The philosophical axiom reflects an individual's perception about reality, the personal awareness and the specific nature of the observed phenomena (Locke, 2007). The nature of inductive theories presupposes that a significant amount of observations and data should be collected, allowing researchers to identify evidence of causality (Kaneko & Kline, 2008).

Types of theories.

The literature provides various types of theories that have been used, depending on the discipline, research approach and the utility of a theory (Kaneko & Kline, 2008). Gelson (2006) proposed that both formal and informal theories might be used in order to explain the relationship among variables. Informal theories do not seek to create a consistent body of knowledge, whereas, formal theories are testified through empirical research (Gelson, 2006). Gregor (2006) identifies five types of theory according to the purpose of use: (a) theory for analyzing, (b) theory for explaining, (c) theory for predicting, (d) theory for explaining and predicting and (e) theory for designing and action. A theory is, therefore, the baseline of all research activities and the type of a theory used is determined by the research purpose (Gelson, 2006). The following part of the paper provides a comprehensive discussion of the relationship between theory and research.

Part II: Theory and Research

In a study of examining the influence of theory and research on self-efficacy construct, Reeb, Folger, Langsner, Ryan and Crouse (2010) concluded that theory and research have a complementary relationship. The nature of the complementary relationship alters theory as a guiding force for the deployment of a research, and theory development depends solely on research for ratification and validation (Reeb et al. 2010). A theory, thus, emerges a research agenda which assists in determining needed information, and through scientific analysis will challenge theory generalizability and abstraction (Christensen, 2011).

Research and theory testing or building.

Gottschalk and Solli-Saether (2009) for example, indicated that a theory orients a future research agenda and through the use of a theoretical canvas, researchers will describe and testify the emerging relationship of the variables observed from a particular phenomenon. The relationship of the variables observed, should be based on scientific laws and evidence collected through an appropriate methodology (Reeb et al. 2010). In a conceptual paper critically reviewing the application of Grounded Theory, Mansourian (2006) concluded that various methodological issues play an important role in testifying or building a theory. The purpose of using a particular theory influences the qualitative or quantitative nature of the research inquiry (Harlow, 2006). If the purpose of using a particular theory and research methodology is theory development, two fundamental elements need to be considered.

First, the research techniques used for an in-depth investigation of a phenomenon, looking for emerging relationships of variables (Mansourian, 2006) and second, the formation of a comprehendible research question that torches qualitative research (Reeb et al., 2010). If the purpose, however, is theory testing and the examination of the relationship between variables, then hypothesis testing emerges, dictating the quantitative nature of the research inquiry (Mansourian, 2006). The challenge, however, irrespective of the theory development or theory testing, is to secure the validity of theory and research (Reeb et al., 2010). Similarly, Mansourian (2006) supported that in order to secure theory and research validity a solid and a research-worthy problem is needed.

Identifying research-worthy problem.

Ellis and Levy (2008) identify research-worthy problem as the cornerstone in the relationship among theory and research. A research-worthy problem sets the pathway in answering questions related to why, who, when, where, how and what elements will be involved in testifying or developing a theory (Ellis & Levy, 2008). A research-worthy problem would accurately guide researchers in formulating a problem statement (Reeb et al., 2010). A problem statement, when formulated, should be based on gaps found in literature, hence, the literature will provide the theoretical framework upon which a researcher will deploy the research (Gottschalk & Solli-Saether, 2009).

Qualitative research and theory.

In a mixed method study of 110 individuals concerning the value of quantitative and qualitative research, Binder and Edwards (2010) concluded the superiority of quantitative over qualitative research inquiries. The superiority of the quantitative research was concluded due to the nature of the research that favors hypothesis testing for theory ratification or validation. Pilkington and Fitzgerald (2006) underlined the complex and the diversified background of various industries that call for skeptical and individual attention in studying particular phenomena. The complex and diversified nature of operations management for example, need more systematic observation than hypothesis testing (Gummesson, 2006). The challenge in operations management, therefore, is not theory testing but gaining an understanding of how a theory could be used in explaining different phenomena (Binder & Edwards, 2010).

In a case-study on the Airbus A-380, Gummesson (2006) concluded that, due to the involvement of various disciplines in aircraft development, including engineering, manufacturing, human resource management, logistics and marketing, hypothesis testing might not be effective in determining the specifications of Airbus A-380 giant. For example, the corporate management of Airbus needs to understand two types of customers, the airline companies and the customers of the airline companies, having different priorities, goals and expectations (Gummesson, 2006). Theory development, hence, could explain the interrelationship of customers' behavior for effective decision-making in aircraft development (Pilkington & Fitzgerald, 2006).

Quantitative research and theory.

A qualitative research inquiry could lead to the development of a theory which explains customers' relationship and behavior (Harlow, 2009). The development of a theory, however, in a complex and diversified field, such as the operations management, needs particular examination and validation (Binder & Edwards, 2010). A failure of a theory to provide a consistent explanation could result in disastrous outcomes, considering an operational failure of an Airbus A-380 (Gummesson, 2006). Quantitative research could be useful, then, in testifying the validity of an emerging theory or sub-theories (Binder & Edwards, 2010).

The quantitative research could offer the methodological means and tools to testify conflicting and fragmented issues (Pilkington & Fitzgerald, 2006). In operations management for example, conflicting and fragmented issues are examined through validity or quality tests (Gummesson, 2006). In validity and quality tests, one or more hypotheses are developed, upon which the entire research will be based in selecting appropriate research techniques (Pilkington & Fitzgerald, 2006). Finally, the empirical evidence will be compared with a developed theory, for ratification or to determine theory contribution (Binder & Edwards, 2010). The following section provides a discussion concerning theory contribution with particular reference to the dynamic theory of organizational knowledge creation.

Part III: Theoretical Contribution

In a conceptual paper of what constitutes a theoretical contribution, Corley and Gioia (2011) concluded the necessity to understand the diversified nature of management in theory development and testing. Research, for example, on particular phenomena and issues in the field of management, call for theories utilization from various disciplines including sociology, psychology, philosophy and economics (Rindova, 2008). However, the diversified nature of theory development or testing in management proposes that in understanding theoretical contribution two fundamental elements need to be explained, theory originality and utility (Corley & Gioia, 2011).

Theory originality and utility.

Originality refers to understanding a particular theory through the contribution of incremental insights to the body of knowledge (Corley & Gioia, 2011). The practical utility of a theory is reflected in the applicability of a theory in a way that practically solves problems (Bartunek & Rynes, 2010). Consequently, researchers in understanding and making a theoretical contribution should be able to understand how a change or an adjustment in a theory could affect the granted relationships among variables

(Rindova, 2008). However, scholar and practitioners in order to understand how a change or an adjustment in a theory could affect the granted relationships among variables need to gain an understanding of the theory itself. The following paragraph introduces the dynamic theory of organizational knowledge creation as an example in understanding theory's applicability in terms of originality and utility.

Dynamic Theory of Organizational Knowledge Creation

In a review paper Nonaka, Krogh and Voelpel (2006) precisely defined the dynamic theory of organizational knowledge creation as an explanation of a complicated organizational issue. This theory explains various mechanisms used in order to amplify and use knowledge owned by individuals and groups at the workplace. The major outcome from the knowledge creation process is the development of an organizational knowledge system that taps into tacit and explicit knowledge found in an organization (Augier & Knudsen, 2006). The organizational knowledge creation theory assists in better understanding the role of three important elements (Nonaka et al., 2006): (a) SECI model, (b) Ba, and (c) knowledge assets of the organization.

SECI model.

The organizational knowledge creation theory emphasizes that the ability of an organization to innovate, depends on how individuals, groups and the organization as a system might exchange tacit and explicit for just-in-time decision-making (Augier & Knudsen, 2006). The SECI model prescribes four stages through which knowledge stakeholders such as employees, suppliers and customers might be engaged in a process of exchanging ideas, with efforts to create new knowledge (Shih et al. 2010). The cornerstone, however, at this level concerns the commitment and the ability of top or front-line management to support social interactions within the organization (Nonaka et al. 2006). For example, an organizational culture that favors the development of healthy social interactions throughout the organizational layers encourages employees to amplify professional wisdom for mutual benefit within the organizational Ba (Rowley & Gibbs, 2008).

Ba and knowledge assets.

Ba is translated from Japanese meaning space, representing an organizational physical, virtual or even a mental space (Nonaka et al., 2006). Ba, as a central component of the organizational knowledge creation theory, tends to explain different type of spaces and knowledge stakeholders that might be involved in the knowledge creation process (Shih et al., 2010). Ba is considered as a place for individuals, which is appropriate to share face-to-face opinions and experiences, whereas knowledge assets are the relationships, the competencies and professional knowledge developed by employees (Schneider & Stern, 2010).

Theory contribution.

Understanding the contribution of the dynamic theory of organizational knowledge creation towards the body of knowledge was determined based on the originality and utility, as proposed by Corley and Gioia (2011). The organizational knowledge creation theory offers insights into three important operational variables found in organizations. First, the theory clearly explains the importance of social interactions of employees within an organization (SECI model; Nonaka et al., 2006). Secondly, the theory identifies the important role of Ba in the knowledge creation process. Finally, the theory sets the pathway in understanding important

operational variables such as the relationship among employees, organizational values including commitment, trust and empathy, which are involved in the creation of fruitful conditions for organizational knowledge creation and sharing (Nonaka et al., 2006).

A major contribution of the theory indicates that a healthy relationship between SECI model and Ba will allow top management to create a knowledge management infrastructure (Nonaka et al. 2006). The healthy relationship requires employees' social interactions in order to foster appropriate organizational conditions that favor the conversion of information into useful knowledge (Shih et al., 2010). The failure of any knowledge management initiative to bring together the social aspect of the knowledge creation process along with an appropriate Ba will result in dry information which ends being useless (Nonaka et al., 2006).

The organizational knowledge creation theory, therefore, provides a comprehensive explanation of the organizational attributes that support knowledge assets (Nonaka et al., 2006). The organizational attributes are factors such as organizational culture, politics, organizational citizenship and teamwork that are directly related to the ability of an organization to exploit organizational human, structural and customer capital (Shih et al., 2010). Therefore, the theory provides a motive in defining the origin of knowledge, as well as in identifying what knowledge assets are available to top management in building a knowledge-based competitive advantage (Usoro & Majewski, 2011).

The practical utility of the theory is extremely important since the three components SECI model, Ba, and knowledge asset, are set on a motive where top management could gain the know-how of using available resources to create new or use existing knowledge in anticipating the changing and diversified nature of the management field (Nonaka et al., 2006). SECI model, Ba and knowledge assets, however, cannot be used in isolation, altering the collectivist nature of the theory (Shih et al., 2010). The collectivist nature of the theory promotes communities of practice that elaborate and use knowledge, within which top and middle management should act as activists in creating new knowledge (Nonaka et al., 2006). The role of top or middle management, however, is the actual link in the knowledge creation process between SECI model, Ba and organizational knowledge assets (Gourley, 2006). The following section of the paper indicates two unanswered questions identified in the dynamic theory of organizational knowledge creation process, and the role of managers.

Controversial Issue

Although the literature provided various examples of the application and the usefulness of the dynamic theory of organizational knowledge creation (Augier & Knudsen, 2006; Shih et al., 2010; Nonaka et al., 2006), Gourlay (2006a) indicated two serious defects. The two defects concern the unclear notion of tacit knowledge, and the empirical validity of the SECI model (Gourlay, 2006b). The notion of tacit knowledge seems to surround contradictions (Gourlay, 2006a). The contradictions emerge from the very personal nature of tacit knowledge emended in the competencies, personal knowledge and personality of every employee (Shih et al., 2010). Special and unique knowledge and experience, owned by an individual, might be proven to be a barrier in the knowledge conversion process, reflected in the SECI model (Jakubik, 2008).

Tacit knowledge and organizational tradition.

Tacit knowledge, therefore, is a part of tradition and tradition represents conservatism, which is a main obstacle towards knowledge conversion (Gourlay, 2006a). Gourlay (2006b) stated that tacit knowledge and tradition have no direct relationship, unless posed by a strong organizational culture (Usoro & Majewski, 2011). A relationship, even when it appears within an organizational culture, guarantees no connection between tradition and the knowledge conversion or exchange process (Jakubik, 2008). Pastry cooks, for example, might state clearly all the ingredients needed for a tasty chocolate cake for the purpose of writing a standardized recipe, controlling costs, and contributing to the knowledge conversion process. Pastry cooks, however, might not release important tricks in the method of preparation, prohibiting product consistency throughout the production.

Therefore, a specific proposal was not made on how top management could maintain the relationship between tacit knowledge and organizational tradition (Gourlay, 2006b). The particular reference was made to top management, because top management plays an important role in the knowledge conversion and exchange process (Gourlay, 2006a; Gourlay, 2006b). Top management should support employees' engagement in a collective learning activity and through commitment and organizational trust could enhance the knowledge creation and conversion process (Gourlay, 2006a).

Organizational culture and SECI model.

The second controversial issue about the organizational knowledge creation theory concerns the empirical validity of the SECI model (Gourlay, 2006b). The SECI model has been greatly validated in Japan, yet, in most of the western economies has not been validated through satisfactory empirical tests and evidence (Gourlay, 2006a). The validation of the SECI model in western economies alters the cultural dimension of the organizational knowledge creation theory (Jakubik, 2008). The validation challenge for SECI model is found in the applicability of the theory in creating powerful communities of practice (Shih et al., 2010). Powerful communities of practice encourage employees to amplify professional wisdom, which reflects the actual expertise, knowledge and experience gained by an individual (Rowley & Gibbs, 2008).

Nonaka et al. (2006) explained that the willingness and socialization of employees in amplifying professional wisdom represents the ontological dimension of the organizational knowledge creation theory. The validation of the SECI model in western societies will specify the cultural parameters that managers and employees will employ in the process of exchanging personal and professional wisdom (Rowley & Gibbs, 2008). For example, through empirical investigation and tests, the validation of the model will alter mechanisms that anticipate the diverse biographies and professional background of employees (Nonaka & Von Krogh, 2009). The empirical test and evidence could provide a new diagraph, dictating a transitional pathway that exceeds personal boundaries and a fruitful process of creating new knowledge based on the SECI model in western economies (Gourlay, 2006a).

Summary

The goal of this paper was the exploration of the theory's role in management research. A theory could be used as a theoretical framework in explaining the relationship of various variables

in an observed (Upton & Egan, 2010). However, due to the complicated and diversified field of management, theories call for empirical validation (Christensen, 2011). A good theory should contain a definition and a domain, as well as to explain the relationship among variables and predictions (Wacker, 2008). Theory has a complementary relation to research (Reeb et al., 2010), requiring a research-worthy problem as a point of commencement (Ellis & Levy, 2008). The dynamic theory of organizational knowledge creation assists top management in understanding the needed mechanisms and infrastructure to manage organizational knowledge and maintain a knowledge-based competitive advantage (Nonaka et al., 2006).

The theory promotes social interactions and the exploitation of organizational knowledge assets in understanding the organizational knowledge creation process (Nonaka et al., 2006). The concept of tacit knowledge management along with the validation of the SECI model are two serious contradictions that need empirical research to testify and verify the applicability of the dynamic theory of organizational knowledge creation in western organizations (Gourlay, 2006a).

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