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PHENOMENOLOGY AS A BASE OF SYSTEMS ANALYSIS

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Abstract

It has been ten years since Truex et al. (1999) advocated the continuous development of information systems by business professionals or workers themselves. A few methods for systems analysis (SA) by business professionals have appeared during this time. However, systems analysis by business professionals has not gained widespread interest among researchers. One of the reasons is considered that there is no foundational theory or philosophical base of the systems analysis, thereby the development of the methods being still a low-key theme in IS related researches. We will take phenomenology as a candidate of a foundational theory of the systems analysis, and examine the roles and functionality expected to the systems analysis against phenomenology in terms of the problem of knowledge, the mode of knowledge, and the method. It is made clear from the examination that the systems analysis can be considered an instance or application of phenomenology because the roles and functionality of the systems analysis falls within the idea and scope of phenomenology. Phenomenology is, then, expected to show what the systems analysis is and how it should be. In our examination, in fact, phenomenology helped make us conscious of an unnoticed role of the systems analysis that is important but not articulated.

Keywords: systems analysis, phenomenology, information systems, first person perspective, business professionals

1 INTRODUCTION

The world is all around me, not in front of me (Merleau-Ponty, 1964, p.178). If it were in front of me, i.e., out there, the world would be a natural one regulated by causal laws, letting specialists analyze the world. If it is all around us, the world is a social one where the naturalistic attitude is subordinated to the personalistic. That is the world where everyone has to participate, not leaving our future with specialists, because 'to live is always to live-in-the-certainty-of-the-world' (Husserl, 1970, p.142).

Our aim of research is to search for a firm ground for systems analysis (SA) by business professionals (BP). Although there has never been a universally accepted definition of systems analysis, we often see five phases in a classic or typical project associated with systems analysis: scope definition, problem analysis, requirement analysis, logical design, and decision analysis (Witten et al., 2004, pp.186-187). The earlier phases are more concerned with business systems, while the later phases more with information or software systems. Our research interest is in the earlier phases. It can be noted that new approaches like 'agile software development' (Hightsmith et al, 2001) are concerned with the later phases.

It has been ten years since Truex et al. (1999) advocated a new systems analysis and development that business professionals practice themselves to take the initiative in systems analysis and development. During this period, there has been some progress in new SA methods as can been seen in a few related researches including Alter (2002, 2004), Bednar (2000), Korpela et al. (2002), and Whitaker (2007). However, systems analysis by business professionals has not gained widespread interest among researchers. One of the reasons is considered that there is no foundational theory or philosophical base of systems analysis, thereby the development of the methods being still a low-key theme in information systems (IS) related researches.

Kosaka (2008, 2009a, 2009b, 2009c) identified and verified the role and functionality of the new systems analysis proposed by researchers including Truex et al. (1999) and others, in light of researches on management and organization. One of the prior researches is the management theory by Stacey et al. (2000) based on complexity theory, dissipative structure in particular. Another is research on resistance to change (RTC) including Coch et al. (1948). The other is research on job enrichment including Hackman et al. (1975). Kosaka's researches show the role and functionality of systems analysis by business professionals as follows.

- BP's participation or initiatives in systems analysis; communicative action; and continuous analysis from Stacey et al.'s theory of management.

- Total participation that every BP participates in systems analysis; and collective perspective from researches on RTC.

- The first person perspective (1PP); and a shift of viewpoint from action to activity from researches on job enrichment.

We intend to find a foundational theory or philosophical base for systems analysis by business professionals that includes the role and functionality mentioned above. As will be discussed in the section of prior researches later, the existing SA methods have been developed primarily based on the practical needs derived from the developer's experiences, not on theoretical needs derived from a foundational theory or philosophical base. In order to have a firm ground for the new systems analysis, here we will discuss whether late phenomenology of Husserl that includes the concept of life-world is appropriate for it or not.

The outline of our discussion is as follows. After briefly reviewing prior research, we will examine the systems analysis against phenomenology in terms of the problem of knowledge, the mode of knowledge, and the method, respectively. In each section, we find the systems analysis is within the scope and idea of phenomenology, and finally conclude that it is possible to see phenomenology as a foundational theory or philosophical base of the systems analysis.

Hereafter the systems analysis practiced by business professionals or workers and the systems analysis methods for them are respectively referred to as the new systems analysis and the new SA methods.

2 PRIOR RESEARCHES

We are looking for a foundational theory or philosophical base to the new systems analysis as physics to mechanical engineering. A few methods for business professionals or workers are appearing on the scene, however, their developments are mostly based on the practical needs coming from the experiences of consultants or practitioners. For example, Alter (2004) mentions that his motivation for the development is based on his consulting experience, and developed his work systems method based on theories including the idea of inheritance for knowledge representation. In case of Whitaker (2007), he criticizes that conventional IS methodologies are predicated on logical empiricism, and instead advocates the first person perspective (1PP) in systems analysis. He developed a SA method by which a systems specialist emulates a worker. In case of Bednar (2000) who extended learning from organizational one to individual one, he proposed a need for producing a method for workers and created a method SST. To sum up, they are not necessarily based on a theoretical base as far as a foundational theory or philosophical base is concerned.

To our knowledge there is one theoretical research. It is Truex et al's research (1999) that focuses on the theoretical needs. They proposed the needs for transforming IS development on a project base to continuous development. They implicitly suggested systems analysis by business professionals or workers. However their research is based on problematic Luhmann's systems theory. As known, Luhmann's social system is problematic in case of IS research because the entity of an organization is assumed to be simply communication not humans (Kay, 2001). The experiences of individuals in an organization are not taken into consideration. It is therefore not clearly mentioned in their paper that business professionals should practice systems analysis.

As a pioneering work for systems analysis by business professionals there is Soft Systems Methodology developed by Checkland (1993) and his colleagues. He mentions that because phenomenology was a younger tradition, practical methodology and substantive findings were harder to find (Checkland, 1993, p.273). SSM is not necessarily based on phenomenology, but on his own unique ideas coming from system thinking developed with his colleagues.

It can be concluded from the review of literature above that the theoretical needs for the new SA method have not been discussed enough, and also that there is little theoretical investigation into the foundational theory or philosophical base of the new systems analysis. In order to develop the new SA method based on a foundational theory in the future, here we will discuss whether late phenomenology of Husserl is appropriate for it. The late phenomenology of Husserl that includes the concept of life-world has increasing attention as a foundational or philosophical base for human science today.

3 PROBLEM OF KNOWLEDGE

Systems analysis has been usually practiced by SA specialists with some participation of end users, and sometimes is not practiced substantively only with the adoption of a software package. Therefore there are a few types of SA practices: the existing systems analysis practiced by specialists, the new systems analysis practiced by business professionals and no systems analysis practiced. 'No systems analysis practiced' can be further classified into two types: 'in-house development of IS without systems analysis' and 'adoption of a software package without systems analysis'.

Therefore, we have four types of SA practices:

- In-house development of IS without systems analysis
- Adoption of a software package without systems analysis
- The existing SA practice

- The new SA practice, i.e., systems analysis practiced by business professionals

In this section, to understand the differences among these types of SA practices, we will explore relationships between the problem of systems analysis and the problem of knowledge, i.e., the problem that phenomenology addresses in particular.

There are a few types of attitudes toward truth. One is that the truth exists beyond us. Another is that there is no truth, i.e., relativism. Phenomenology tried to find a way between them. Merleau-Ponty (1964, p.48) describes what is the problem that Husserl addressed in phenomenology as follows. From the beginning to the end of his career, Husserl tried to discover a way between logicism and psychologism. The attitude of logicism admits that beyond the chain of psychological and social causes there is a special sphere, the place of thought in the strict sense of the term, where the philosopher may get in touch with an intrinsic truth (ib, p.48). Logicism is considered to have its origin in Kantian world of thing in itself (Ding an sich) (Husserl, 2001, p.154). Concerning psychologism, by contrast, "by showing that all our thinking is the expression of a social situation whose limitations prevent it from being true, one falls into the danger of proving too much, since psychologism also will bear no true meaning in itself" (Merleau-Ponty, 1964, p.48). It was against these dangers that Husserl decided to return to the task of the philosopher: to restore certitude and the distinction of the true from the false (ib, p.48).

Phenomenology would be a science of the universal 'how' of the pregivenness of the world, i.e., of what makes it a universal ground for any sort of objectivity (Husserl, 1970, p.146). The interest of the phenomenologist is not aimed at the ready-made world or at external, purposeful activity in it, which itself is something constituted (id, p.177). The world that phenomenology intends to address is neither that of psychologism or relativism nor that of logicism that admits that there exist things but they are unknowable. The world that phenomenology intends to address is, between them, a sort of the world being constituted under a strong power, or weltanschauung as depicted by Nietzsche (Takeda, 2004, pp.60-61).

It is phenomenology, however, that goes further beyond this by mentioning: "Necessarily, we believe in the world, whose things only appear to us differently but are the same" (Husserl, 1970, P.23). Phenomenology is more active than the previous three. "The phenomenological world is not the bringing to an explicit expression of a pre-existing being, but the laying down of being. Philosophy is not the reflection of a pre-existing truth, but, like art, the act of bringing truth into being." (Merleau-Ponty, 1962, xxii-xxiii) Phenomenology is interested in conditioning conditions or ways with which a living life-world is being shaped. Phenomenologists go back to the ways in which this subjectivity has, 'has brought about,' and continues to shape the world through its concealed internal method (Husserl, 1970, p.177).

From the above discussion four types of world, i.e., four types of problem of knowledge, can be derived:

- The world of psychologism or relativism

- The world of logicism, thing in itself (Ding an sich) out there

- The world constituted by a dominant weltanschauung

- The phenomenological world

If we make rough matches between the type of problem of knowledge and the type of SA practice, we can have the followings:

The world of psychologism	–	In-house development of IS without systems analysis
The world of logicism	–	Adoption of a software package without systems analysis

The world constituted	–	The existing SA practice
The phenomenological world	–	The new SA practice

'In-house development of IS without systems analysis' means that IS developers with functional thinking believe in their ways unconsciously or unconditionally, corresponding to the world of psychologism, with little attention to alternative IS. 'Adoption of a software package without systems analysis' is related to the world where there exists a truth out there like the best practice. The existing SA practice is related to the world constituted under a specific strong power, or weltanschauung which is dominant within an organization, or the world constituted under the functional view as described in Use Case diagrams where all humans are simply treated as roles with no weltanschauung. The new SA practice is related to the phenomenological world, which is related to the world being constituted in a way of Habermas's communicative rationality with multiple perspectives floating in an organization.

With these relationships, it is reasonable to think of a possibility that the new SA method is based on late phenomenology of Husserl that includes the concepts of life-world and inter-subjectivity. It can be expected that the more we understand the conditions and structures of constitution with the new SA method, the more we are capable to practice communicative rationality among us. That is because if one is conscious of conditions that govern one's belief, one can no longer hold the certitude that there is only one belief in the world. Communicative rationality comes into play when one becomes conscious that beliefs change if conditions change.

4 MODE OF KNOWLEDGE

As the new systems analysis has been examined and revealed to have the same problem of knowledge with phenomenology, we then examine whether the mode of knowledge of the new systems analysis is similar to that of phenomenology. Firstly, we will show what the mode of knowledge or cognition is in phenomenology.

Husserl presents a concern associated with knowledge or cognition as follows: "In all of its manifestations, knowledge is a mental experience: knowledge belongs to a knowing subject. The known objects stand over against it. How, then, can knowledge be sure of its agreement with the known objects?" (Husserl, 1999, p.17).

It is known in Kantian thinking that there is an idea about the 'thing in itself,' which is tangible but not perceivable. The world is divided into two in this thinking. One is a world of the 'thing in itself' that only God know. The other is a world of phenomenon that human can know only through experiences. Since the advent of this thinking, the congruence between subjects and objects has not mattered. Going further beyond this, phenomenology considers that one perceives a thing as an object through the immanence. Being is called transcendent because it is inexhaustible, as mentioned by Husserl. It can always happen that the further course of experience will compel us to abandon what has already been set down and justified in the light of empirical canons of rightness (Husserl, 2002, 144).

A person perceives what is transcendent by constituting in the immanence. For example, let's say that there is a glass in front of a person. He senses a circle as it so appears when he takes a look at it from above, and senses a rectangle when he takes a look at it from the side, and then perceives or experiences a tube as that which appears. And still further, he senses a mouth when he takes a look at it from an angle and then perceives or experiences a glass as a convincing image or certitude. Human beings have this primordial mode of knowledge or cognition that constitutes that which appears from various appearances. Husserl paraphrased the relation between that which appears and various appearances as universal 'a priori of correlation' between an experienced object and manners of givenness. He reflected that his discovery of this 'a priori of correlation' affected him so deeply that his whole subsequent life-work had been dominated by the task of systematically elaborating on it (Husserl, 1970, p.166).

In other words, human beings have a primordial mode of perception that constitutes an identity (that which appear) from its manifold of presentations (various appearances). The identity transcend its manifold of presentations, it goes beyond them. In the construct of the identity and its manifold of presentations, the configuration of 'immanence – transcendence' that helps a person capture the world as a convincing being is a basic structure of knowledge. Husserl also called this configuration of 'immanence – transcendence' as the 'noesis – noema' structure. The noematic field is that of the unitary, the noetic that of the 'constituting' variety factors (Husserl, 2002, p.288).

An experience is the consciousness of something (Husserl, 2002, p.120). It is widely known as a motto of phenomenology that consciousness is always consciousness of something. Consciousness is of intentional experience (Husserl, 2002, p.363). 'To return to things themselves' as a catch-phrase of phenomenology means to return to the intentional experiences and to constitute in immanence what is transcendental as a convincing image by oneself. Intentionality is used to show the distinction between physical phenomenon and subjective one (Husserl, 2002, p.249). Consciousness is the consciousness of something, for example, perceiving is the perceiving of something (Husserl, 2002, pp.242-243). The essential difference between them is shown by the fact that there is no such unique peculiarity of experiences in physical phenomenon.

In order to have a more concrete understanding of the mode of knowledge in phenomenology, we will use an example in the field of management in organizations. A manager has reporting from subordinates. The reports show the presence or absence of some problems in their fields where his subordinates work. Some manager believes in the presence or absence of some problem as reported, the other manager who are excel in management often practices 'management by walking around' (MBWA) to have a more actual understanding of the problem. Although it is widely known to be effective in motivating subordinates, MBWA also provides the manager with an opportunity to have a constituting or transcendental subjectivity, that is, a noetic momentum, described by phenomenology. In other words MBWA means an opportunity for a manager 'to return to things themselves,' through which he senses a manifold of appearances, and perceives that which appears with his own subjectivity, that is, constitutes as a more plausible image what the problem actually is in the field.

Here we will discuss possible relations between the constituting subjectivity and the new systems analysis. Exercising constituting subjectivity means not believing in everything one hears but constituting what is transcendent on one's own. It is considered that this coincides with the mode of knowledge practiced in the first person perspective in the new systems analysis. By contrast, the existing SA practice by specialists corresponds to the mode of knowledge where specialists believe in what they hear from BP or users. It postulates the presence of pre-existing needs, so that specialists make efforts to derive the needs from hearing.

By referring to phenomenology of Husserl, Merleau-Ponty talks about the needs for participation or commitment: "… our commitment which is itself thus made to appear as a spectacle, … But it is clear that the essence is here not the end, but a means, that our effective involvement in the world is precisely what has to be understood and made amenable to conceptualization, … " (Merleau-Ponty, 2002, p.xvi). Effective involvement means the participation of business professionals or users. In case of SA, constituting subjectivity is what must be undertaken by business professionals or workers in organizations. This requirement of involvement, therefore, coincides with the mode of the new systems analysis.

Immanence where constituting takes place is absolutely immanence not transcendence. This implies the character of endlessness of knowledge or cognition. In addition, an actual business environment has a character to continue to change. Therefore continuous analysis and development is a prerequisite for the constituting of social reality. This also coincides with the concept of the new systems analysis that systems analysis is not a project activity but a continuous one.

Due to space limit, briefly stating, phenomenology has a premise that "the naturalistic attitude is subordinated to the personalistic" (Husserl, 1989, p.193). This means that the base of knowledge or cognition in phenomenology is a life-world that is an interweaving network of things and events, and

also means that motivation dominates in the life-world rather than cause and effect in nature. This implies that information systems should not be analyzed and designed independently from the life-world or work systems. Further, the importance of inter-subjectivity in phenomenology is consistent with the premise of the new systems analysis that it should take for granted multiple floating weltanschauungs in an organization.

Systems analysis usually confronts the multiple weltanschauungs often in conflict within an organization. However, the existing and dominant systems analysis has avoided the situation. The new systems analysis cannot get by with avoiding. The attitude of the new systems analysis is, therefore, consistent with an ideal of phenomenology mentioned by Husserl: "Pre-scientifically, in everyday sense-experience, the world is given in a subjectively relative way. … But we do not think that, because of this, there are many worlds. Necessarily, we believe in the world, whose things only appear to us differently but are the same." (Husserl, 1970, p.23) If we have empathy among us by revealing and sharing the structures and conditions of a conviction of each person, there is a greater possibility that we believe in having a social reality where communicative rationality of Habermas works.

5 METHODS

In the previous discussion we understood that the new systems analysis has the same problem of knowledge and the same mode of knowledge with phenomenology. We will then examine whether the new systems analysis has much in common with phenomenology in terms of method. Phenomenology is a method as Husserl mentions: It [Phenomenology] designates at the same time and above all a method and an attitude of thought (Husserl, 1999, p.19). It is considered, as far as method is concerned, that the major components of phenomenology are transcendental reduction, epoché, and eidetic reduction (Mealeau-Ponty, 2002, pp.vii-xxiv).

Transcendental reduction means that a person returns from a natural attitude to a transcendental subjectivity where constituting subjectivity works. That is, it means returning to the field where in face of a thing or an event a person constitutes in immanence what is transcendental. In terms of management in organizations, transcendental reduction can be found in the behavior of a manager practicing BMWA instead of judgment based on reporting from subordinates.

Transcendental reduction is a truly radical reflection, which reveals the prejudices established in us by the external environment (Merleau-Ponty, 1964, p.48). By this truly radical reflection, a person attempts to transform this automatic conditioning into a conscious conditioning (Merleau-Ponty, 1964, pp.48-49). It reveals our conditions and structures which our actual knowledge or cognition comes from.

Husserl requires us to exercise epoché to have transcendental reduction. "It is because we are through and through compounded of relationships with the world that for us the only way to become aware of the fact is to suspend the resultant activity, to refuse it our complicity, or yet again, to put it 'out of play'. Not because we reject the certainties of common sense and a natural attitude to things but because, being the presupposed basis of any thought, they are taken for granted, and go unnoticed, and because in order to arouse them and bring them to view, we have to suspend for a moment our recognition of them." (Merleau-Ponty, 2002, pp.xiv-xv) In terms of management, it is reasonable to say that a manager neither takes at face value everything he hears from his subordinates nor negates it, but temporally suspends it until he goes to the field.

Every reduction, says Husserl, as well as being transcendental is necessarily eidetic (Merleau-Ponty, 2002, p.xvi). It is a technical work in the study of essences whose goal is to draw out the absolutely necessary and invariable components. This is done by imaginative free changes or variation by which one attempts to reduce phenomenon into the absolutely necessary and invariable components. Merleau-Ponty also refers to this: "… a knowledge of facts is never sufficient for grasping an essence and (though) the construction of 'idealizing fictions' is always necessary …" (Merleau-Ponty, 1964, p.75). The need to proceed by way of essences means "…that our existence is too tightly held in the

world to be able to know itself as such at the moment of its involvement, and that it requires the field of ideality in order to become acquainted with and to prevail over its facticity." (Merleau-Ponty, 2002, p.xvi) Along with transcendental reduction, eidetic reduction that brings about the findings of necessary and invariable components is expected to provide people with a foundation with which they can acknowledge the conditions and structures for empathy in their organization.

In identifying relations between phenomenology and the new systems analysis, transcendental reduction corresponds to the first person perspective (1PP) under the participation in systems analysis, because the 1PP under the participation in systems analysis does not simply accept what specialists propose but makes an opportunity to reflect on conditioning in ones' life-world, that is, work systems where IT or information systems are applied. Epoché is fully related to the needs for suspending preoccupied ideas in order to reexamine the existing practices and what one believes in. As Brynjolfsson et al. (2002) say, in the age of an oligopolistic market, companies must build their own intangible assets to produce their unique products and services, without succumbing to the temptation of the existence of external best practices. Therefore, business professionals or workers in organizations need to reflect on their existing practices and environments to build their own future image, instead of simply introducing alluring external best practices that specialists including IT consultants often advocate. In so doing, it is epoché that business professionals firstly have to exercise.

Eidetic reduction is what has not been articulated in the requirements of the new systems analysis. Phenomenology, instead, shows us that eidetic reduction is an indispensable prerequisite for searching for conditioning conditions and structures with which people can collaborate in an organization that a variety of people are involved in.

6 CONCLUSION

It is often considered that the purpose of systems analysis (SA) is to build a logical model of a new system with the first step being requirements modeling. In the age of empowerment and global oligopolistic economy where innovation is required to survive, people need to participate in systems analysis, not letting professional systems analysts undertake it alone. They need to start understanding themselves, their organizations and environments. It means that they need to understand their setting of the world that is presupposed at every moment of their thought. It is expected that phenomenology helps them be conscious of links that bind them to the physical, social, and cultural world in their organization.

With an expectation of an advancement of systems analysis by phenomenology, we have tried to investigate into the relation between phenomenology and systems analysis by business professionals. Our investigation has revealed the possibility that systems analysis by business professionals (the new sytems analysis) is an instance or application of phenomenology because the new systems analysis has the exact correlates of phenomenology in all aspects: the problem of knowledge, the mode of knowledge, and the method. In short, it is within phenomenological thought.

It is, however, at the same time that the roles and functionality of the new systems analysis that were articulated before do not include a function of eidetic reduction which is one of major methods in phenomenology. It is presumably because the new systems analysis is not widely practiced yet and therefore the requirement for it is not yet recognized well. The function of eidetic reduction is considered a must in order to find and share the conditions and structures for enhancing empathy or accommodation in an organization. This means that phenomenology enlightens us what the new systems analysis should be.

Our discussion shows the new systems analysis is a possible instance of phenomenology. However it does not imply that there is any other foundational theory or philosophical base for it. This is a major drawback in this research.

We think our discussion has taken the first step to pave an avenue of the foundational theory for the new systems analysis. Expected are an increasing interest among researchers in the new systems

analysis and a progress of development of the new SA methods if we can share a foundational theory for it.

As Husserl (Husserl, 2002, p.19) put it, phenomenology is a method and an attitude of thought. However it is not a concrete, procedural method. Although phenomenology is expected to be a foundational theory or philosophical base for the new systems analysis, there still remains the need to develop a concrete SA method that business professionals or workers can use.

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