

10 PHENOMENOLOGY: A PREFERRED APPROACH TO RESEARCH ON INFORMATION SYSTEMS¹

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Abstract

A phenomenological approach to the study of information systems is preferred because of the nature of information systems, the organizations in which they operate and our ability to gain objective, reliable knowledge of them. Information Systems are data becoming information in consciousness; organizations are socially constructed through language, and our reasoning about both these processes takes place in dialogue. Phenomenology is a method of social science that takes these characteristics seriously and, in fact, grounds itself in them. I first discuss why phenomenology is preferred for the study of information systems, and then make some observations on doing phenomenological studies.

Phenomenology²

What is phenomenology? It is a term that carries a great deal of ambiguity along with its sometimes confused and faddish use. A concise definition would be: phenomenology is

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²This section draws especially on the work of Lauer (1965) and Natanson (1973).

the intuition of essences. But this terse statement needs considerable elaboration. Phenomenology is understood and practiced in a wide variety of different ways today, but its use as a method of social science springs primarily from the work of Edmund Husserl (1931). He dedicated himself to developing a sound foundation for phenomenology as a method of guaranteeing knowledge so that other scholars could reliably use the phenomenological method in a broad range of social sciences.

Husserl was against naively positive approaches to science, especially the uncritical use of positive, natural science methods in psychology. For Husserl, positive science was heavily dependent on unchallenged presuppositions, and in that sense failed to achieve a truly objective status. Husserl was, most of all, committed to establishing valid knowledge that was based on pure objectivity, free from contaminating presuppositions.

To achieve this end, he began with Kant's conclusion that all we could ever know were phenomena, but he rejected the notion of a "thing in itself," which stood behind phenomena and remained forever inaccessible to us. Husserl, in contrast, emphasized that yes, all we could know were phenomena, but that once we had understood them correctly, we knew all that there was to be known.

Phenomena are not the mere appearance of things to us, although they are found by reflecting on our everyday experience in the world. Phenomena are the essence of our experience: that which remains after the accidents, contingencies, and presuppositions we bring to our every day experience in the life-world are stripped away. Essences are not verified empirically, but are grasped through intuition. The proof of an essence is its self-evidence. But this self-evidence, the self-validating nature of the knowledge of essences, does not come without disciplined effort. The intuition of essence is the end result of a repeated process of purifying experience and stripping away presuppositions that normally go unquestioned. Through a series of "reductions," successive layers of taken-for-granted assumptions are "bracketed" and set aside. Each reduction brings one closer to objectivity, and the end point of repeated reductions approaches pure objectivity.

Husserl follows on Descartes' method of doubt but rejects Descartes' conclusion. Instead of concluding that there are, as it were, two worlds—one of the mental subjectivity of the knower and one of the physical objectivity of the known—Husserl concludes that it is in consciousness and subjectivity itself that we will find the nature of being and the truly objective basis for any knowledge that can be had. By stripping away layers of presuppositions, we seek a pure subjectivity in which this objective basis for knowledge will be found.

So, phenomenology is interested with the methodical study of consciousness in order to understand the essence of experience. The search for essence is the search for meaning and phenomenology is therefore concerned with the structures of meaning that give sense and significance to our immediate experience. Thus, the hermeneutic problem (the problem of translation and interpretation of texts) is a central problem of phenomenology. To me, it is through an appreciation of the hermeneutic problem that we best come to see the importance of phenomenology for information systems research. Hermeneutics originally referred to the interpretation of religious texts, a situation where the author is extremely distant and unfamiliar, yet we are convinced that the text is a carrier of an important meaning that has yet to be clarified. For me, the design and use of information systems is the text that we must try to understand. It is through a hermeneutic process that we can approach this task and develop an interpretive description of information systems.

Positive science is concerned with finding out *how* things work, whereas phenomenology is concerned with finding out *what* things are. Positive science explains reality as the law-governed outcome of causally-related, antecedent variables. It starts with theory and proceeds through empirical tests designed to disconfirm the theory. A theory identifies variables and their causal relations in order to make predictions. Phenomenology, in contrast, questions the value of a science that does not first make clear what it is speaking about. We only find out what things are through a methodical process of description. The process of description is phenomenological when it is focused on that which is immediately presented to consciousness, and when it employs reductions to search for truly objective knowledge in pre-reflective consciousness. Phenomenology does not assert the existence of an absolute knowledge. In the end, a phenomenological study cannot claim to have a proof of its findings, only a reliance on its method and the hope that others will “see” its descriptions as true and accurate.

Phenomenology is also distinguished from positive science in its reflexive character. From Husserl, we learn that the first subject of phenomenological investigation is phenomenology itself. To do phenomenology is also to study the doing of phenomenology. The process of recognizing prejudice and bracketing assumptions is applied to the method of study concurrently with its application to the object of study. The phenomenologist always includes himself or herself and the method being used as part of the phenomenon being studied. The phenomenologist sees positive science and its claim of freedom from prejudice and presumption as a conceit. When the positive scientist sees himself or herself as free from bias, it is an illusion. The reflexive character of phenomenology means it is not a finished method that can simply be used. One is always a beginner with the phenomenological method.

Phenomenology and Information Systems

Up to this point we have discussed phenomenology in a way that closely parallels the work of Husserl. Many people have drawn inspiration directly or indirectly from his work, but few have followed in the development of phenomenology as he strictly conceived it. His own emphasis on the transcendental and on the need to demonstrate phenomenology as based on a pure subjectivity that yields a pure objectivity are not shared by all subsequent phenomenologists.

This section will draw primarily on the writings of Hans-Georg Gadamer (1975, 1976, 1981). Gadamer focuses our attention on phenomenology as an historic act of interpretation, grounded in tradition. He emphasizes the impossibility of stripping away all assumptions as a guarantee of objective knowledge. For Gadamer, prejudice is a positive not a negative thing. Prejudice is the basis of our ability to experience the world, it is the way we are “open to” the world, it cannot be made to disappear. Understanding, through the accurate description of phenomena, is not an end point, but a moving, dialectic process: a dialogue in which we continuously engage all that is alien to us in a reciprocal, intersubjective relation.

Gadamer helps make explicit the way of appreciating the life-world that distinguishes phenomenological study from normal, positive science. He emphasizes that modern science conceives of the world as objects to be manipulated. The world is simply “out

there” and our cause-effect knowledge allows us to operate on it. Language is treated as a tool modern science can use for conceptualizing, communicating or motivating with respect to this “simply given” reality it is attempting to manipulate (1975, p. 253). Gadamer contrasts this with an appreciation of the way language and symbolizing is constitutive of the social world, not just a convenient operator on it.

Language is the fundamental mode of operation of our being-in-the-world and the all-embracing form of the constitution of the world.
(Gadamer, 1976, p. 3)

Gadamer argues that the hermeneutic process of interpretation is not some esoteric problem relevant only to translators of ancient texts, but a basic problem that confronts us all as part and parcel of our existence in the social world. Our own subjectivity experiences the world around us as alien. The world must be interpreted by us in order for our intentional action to be possible. This is a universal hermeneutic problem, fundamental to our everyday life. Interpretation progresses as we become aware of the prejudice we bring with us in our encounter with the world. We gain this awareness through entering into a dialogue with the world in which our horizon of understanding is opened to that of another person. Hence, for Gadamer, interpretation is an intersubjective process that requires each subject to respect the equality of the other and to engage in a dialogue of active reciprocity with the other. In fact, he analyzes the interpretation of art, texts and history as if they were interpersonal dialogues.

Our every day experience of the social world is a hermeneutic. In the world, we encounter a text of meanings already made and being made. All around us, mutually validated ways of seeing the world are being actualized through multiple language games. In hermeneutics, we begin interpreting a text by asking: What question does this text answer? But each text is a concrete, continuing historical existence in which meanings are actively being constructed and new questions are being answered. Hence, there is no fixed or final meaning for the interpretation of a text. Interpretation requires that we interact with the text as if we were engaged in an interpersonal dialogue. Meaning is constructed when people open to each other, expanding their horizons toward that of others. When the phenomenologist studies a person, she does not look *at* them, but *with* them in a dialogue searching for understanding. Understanding comes step by step, layer by layer, as preconceptions, prejudices, and assumptions are recognized and seen through.

The central claim of this paper is that the use, design and study of information systems is best understood as a hermeneutic process (Figure 1). In *using* an information system, the available output is a text that must be read and interpreted by people other than its author. This is a hermeneutic task. In *designing* an information system, the designer reads the organization and its intended users as a text in order to make an interpretation that will provide the basis for a system design. This also is a hermeneutic task. In *studying* information systems, social scientists read the interaction during system design and use in order to interpret the significance and potential meanings they hold. Hence, doing research on information systems is yet another hermeneutic task.

The Text to be Read	The Hermeneutic Task
The Information System Output	Interpretation by the User of the Information System
The Organization	Interpretation by the Designer of the Information System
The Information System in Use	Interpretation by the Researcher of System Design and Use

Figure 1. Three Hermeneutic Tasks in Information Systems

A science of information systems that fails to appreciate that consciousness acting through language is constitutive of the social world and that the hermeneutic problem is universal, draws special criticism from Gadamer.

There would be no speaker and no art of speaking if understanding and consent were not in question, were not underlying elements; there would be no hermeneutical task if there were no mutual understanding that has been disturbed and that those involved in a conversation must search for and find again. It is a symptom of our failure to realize this and evidence of the increasing self-alienation of human life in our modern epoch when we think in terms of organizing a perfect and perfectly manipulated information. (Gadamer 1976, p. 25)

Phenomenology is a preferred method because the organizations that are immediately experienced in our life world are constituted by acts of communication and are fundamentally an interpretative problem. Whereas positive science pretends meanings are not problematic, phenomenology accepts meaning as the central problem on which all other knowledge of the social world will depend. Positive science imagines an information system is a camera that merely takes pictures of what is simply there in the organization. Phenomenology in contrast treats the information system as a communicative act that may, in some sense, be more formal and technologically enshrined than dialogue, but is nonetheless an equally fragile social-construction that constitutes rather than reflects organizational reality.

Phenomenology directs us to engage in a hermeneutic dialogue with the multiple texts of an information system in order to make a description of *what* information systems are. In doing so, we are after a description of the interpretive structures that are involved in the design and use of information systems. Although phenomenology stops at a description of the interpretive structures involved, scholars can then choose to make a critical evaluation of the interpretive schemes. In this way we can move beyond describing the world and toward critically examining and changing it.

Some Attempts at Doing Phenomenology

In this section, I will review some studies of mine that I would characterize as phenomenologically based. The purpose is to give some sense of the range of descriptive/interpretive studies that might qualify as phenomenological and draw some insights from having done them. Finally, I will take the case of the in-depth interview as a research method and discuss some of the lessons I have learned from trying to use it in my own work.

My first study had twenty pairs of experienced system analysts and experienced operating-floor nurses meet in a one-on-one interview session (Boland 1978). The analyst's objective was to define the nurse's problem and to sketch the requirements of an information system that would solve it. Analysts used two different "protocols of interaction" for structuring the interview process, and a panel of hospital administrators and expert nurses evaluated the resulting designs on a number of dimensions. When I began the study, those panel scores were the output I was concerned with. They would allow hypothesis testing to demonstrate that the two techniques of interacting did not produce equivalent outcomes, and to suggest one was superior to the other on the selected dimensions.

After that analysis was over, I was left with the uneasy feeling that there was more to the experiment than the different scores given to the analysts' designs in the two conditions. So I took their write-ups and prepared three lists. One list had ideas that only analysts in condition "A" had generated, one list had ideas that only analysts in condition "B" had generated, and one list had the ideas that analysts in both conditions had generated. I then studied these lists and described the different structures of meaning I read in them. Now I see the real outcome of the study being the uncovering of the different interpretative structures that shaped their designs.

I see this study as one that became phenomenological over time in several ways. It started out with the premise that one method of interaction would provide a "better" analysis in the sense of a more accurate one. The nurse's real needs would somehow be matched more closely with one technique, as if her needs were simply there to be observed. It ended up with the realization that the techniques yielded different descriptions. Even though the panel of judges consistently gave one condition higher scores, judges with different value systems could have ranked them differently. The fact that one technique got a higher score from the judges was not the important point. The important point was that the analysts in the two conditions experienced the world differently and were, in turn, about to create different kinds of worlds for the nurses with their new systems. The study was phenomenological, then, in the sense that I, as researcher, became aware of a prejudice in my own method and also became aware of the way that the two methods I was testing were themselves mediating different prejudices on the part of the analysts.

The study began with a rather straightforward, positive science model of an experimental stimulus, an observed response, and an analysis of the response. Trappings of objectivity were provided by scores from a panel of experts, tests of inter-rater reliability, controls for education and background of participants, and so forth. But the study ended up with the realization that the "experiment" was really a hermeneutic (or double hermeneutic) in which subjects confront a situation and interpret the situation. I

as researcher then interpreted their interpretations. This shift in understanding the experiment involves a specific movement of attention from the surface outcome, as it were, to a search below the surface. The early, positive science view of the experiment took the outcome at its surface value and had the judges “objectively” score it. The later, phenomenological view of the experiment tried to look beneath the surface of the outcome to the structures of meaning that gave rise to these particular interpretations by these analysts. In this case, the conclusion was that the different structures of interaction mediated different images of the nature of control in the hospital, and these different images of control guided the analysts’ interpretation of the nurses’ situation.

This experience led me to a critical study of the predominant way we have framed the information requirements question in our information system literature (Boland 1979). Here I argued that a central failing of information systems “frameworks” was the failure to reflect on our own biases and prejudices in observing decision making processes. Creating information systems is a centrally characteristic display of our modern Western culture. It is a uniquely modern application of objectified knowledge to precalculated acts, a thoroughly formalized intentionality. Our literature discusses information systems as if we could assume away interpretation, meaning, and the symbolic process of language which makes us uniquely human. We discuss information systems within a rational fantasy of perfect information. No wonder our mimicry of positive, natural sciences yields little insight. Information systems are constituted by consciousness and are to be found in the intersubjective, intentional actions of human beings, not some mythological rational calculus that stands over us as a general law.

One particularly significant organization theorist who employs a phenomenological perspective is Karl Weick (1979). Following Schutz, he emphasizes the importance of the sense-making process in social life. Organizational actors never just react to situations, but first enact them and then make sense of what they have enacted. Sense-making is always retrospective and applied to past, as yet equivocal, enactments. In one recent study, I have tried to take this perspective seriously and use it to create a diagnostic tool for system analysis (Boland 1984).

In this study, I prepared a rather extensive but fictitious set of accounting reports for a small organization. The reports covered a three year period that ended four years in the future. They included many new departments and activities that were not being planned, but were plausible. The management group then spent an afternoon analyzing the reports. For the purpose of this experiment they tried to imagine that they were four years and several months into the future, looking back over what they had accomplished in the preceding three years.

This study is phenomenological in a number of ways. First, the managers were truly presented with a text that was alien to them. They could not rely on their established typifications for dealing with the text, and they had to engage in an interpretive process. Second, the study explicitly took into account their reflexivity. They were told at the beginning that their attempts to make sense of these reports and their later attempts to make sense of the experience of doing so was the experiment. There was no secret manipulation of variables taking place. Third, the study included a series of post-experimental interviews in which the participants and I jointly tried to interpret what the essence of the experience was, particularly in contrast to their normal, established

budgeting and planning procedures. The results include their description of the process of inquiry, the ideas and the emotions they experienced.

As a final example of phenomenological method applied to information systems, I will discuss a recent study based on a series of in-depth interviews with a system designer. The study began in 1980, and the interviews continued until the Spring of 1984 (Boland 1985). This study is the closest to a true phenomenological study I have attempted to date. The objective was to follow a system analyst during and after the design of an on-line computerized information system, conducting free-form, in-depth interviews in which he tried to describe the essence of the experience. The result is a series of brief statements describing the essence of the experience of communicating with others during the design, the experience of moving through the organizational space, and the experience of moral choice in the design process.

Reflections on Doing Phenomenology

I would like to present my observations on doing phenomenological research based on the in-depth interviews of this last study.

1. Having worked with texts created by subjects in experimental settings and with transcriptions of group interaction, it is clear that working with a subject, directly and with an in-depth commitment on both sides, is far superior. This may seem to go without saying since it is the consciousness of the experience that we are really after, yet I'm sure I'm not alone in doing most of my work with texts, not with the individuals who create them.
2. Doing this type of phenomenological research is a significant intervention in the life of another. It asks the individual to engage in a level of reflexivity about their own taken-for-granted experience that few are accustomed to. Stripping away pretense, prejudice and unexamined assumptions can be a painful process. Once in this highly reflexive mode, the individual doesn't find it easy to turn it off or to focus it on the narrow topic at hand. The whole of immediate experience is open for questioning. For these reasons, this type of work requires a very high level of trust between researcher and subject. Without it, the required openness to the experience and between each other will not be achieved and the result will be a pleasant, but uninformative, discussion.
3. An in-depth phenomenological study requires a certain kind of subject, who is willing to endure the invasion of a previously unexplored, private space, as mentioned above. They also have to be willing to meet for two hours or more at a time over a period of months or years. In addition to the sheer duration of the study, there are the inevitable dry spells when nothing seems to be coming from the work. The same incidents are reviewed over and over without any apparent insights. This means that the subject has got to be willing to invest in the project in a special way, to take the project seriously in spite of dry spells and dead-ends, waiting for something as yet unforeseen to come from the work. The subject has to be willing to leave a session that appears unsuccessful and to work on it between sessions or give it up and move on to different aspects of the experience in later sessions. This is another reason why the subject must be actively working with the researcher if this

kind of work is to be successful. The subject cannot simply be an object of investigation.

Perhaps most importantly, though, the subject has to bring more than time and energy to the study. They must, in my opinion, bring a sense of genuine anguish to the study. They must be troubled by the as yet unseen significance of the experience you are studying together. They must have a sense of wonder about what it means, a puzzling that wants to go behind the surface meaning in their immediate context to find the generalizable structure of the experience. This is a kind of romantic attitude that might seem to be out of place in science, but it is just as necessary for positive science. In positive science, however, the researcher tries to deny it in himself, except for its potential role in generating new hypotheses, and does not allow that his subjects even possess the capacity for it.

4. Finally, in doing the analysis and making the interpretation, the researcher needs to work at keeping a special attitude toward the primacy of the subject's ordinary experience and rooting the work in descriptions of that experience. This is difficult since flights of abstraction, once begun, are attractive to pursue. I would say that it is in the failure to achieve the reductions or bracketing required by interpretative analysis that phenomenological studies have their greatest vulnerability to criticism. The problem is one of "seeing yourself in the data."

Like the subject, the researcher wants to believe that there is a significance; an important essence to be intuited in the situation. Bracketing is the technique for guarding against the interpretation being the researchers favorite prejudice, brought to the data as a preconception, and then "discovered as the underlying pattern. Bracketing is the systematic recognition of these preconceptions and the attempts to take no position toward them one way or the other in making the interpretation.

Yet how can this really be accomplished? If my experience is like most, bracketing is only realized by the researcher in a weak form. Bracketing the assumptions of approaches to science of which you yourself are critical is fairly easy. Bracketing your own deeply held prejudice is another matter. I myself try to bracket my structuralist assumptions while doing interpretive analysis. Yet, why does Levi Strauss always seem to be waiting there in the data?

The only apparent solution to this problem may not appeal to the less romantically minded among you. It is to accept the hermeneutic as a circle, in which we are all only beginners, and to give up the hope of a final or absolute knowledge, accepting instead the continuous, searching dialectic of a dialogue among concerned human beings—both researchers and subjects.

Conclusion

Phenomenology is a preferred approach for the study of information systems not because it is exciting (which it is) nor because it is easy (which it isn't), but because it offers the best prospect for helping us understand their actual operation and significance. It does not hold a promise of sweeping, law-like generalities as positive science does. But it does hold the promise of a methodical, critical study of the communication acts that constitute

information systems. It is a way of study that respects the intentionality of actors, the symbolic nature of language, and the universal hermeneutic problem.

Data becoming information is what information systems are. Data becomes information in the consciousness of a human subject, and that is where we must look if we are to understand information systems. Phenomenology as a social science method holds the best promise for doing so because it is the one method designed with that purpose in mind.

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