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# The Constitutional Force of Perspective Phenomenology: Philosophical Unification in Information Systems

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# The Constitutional Force of Perspectival Phenomenology: Philosophical Unification in Information Systems

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## Abstract

*Information systems are increasingly subject to philosophical inquiry. It is both a sign of the IS discipline's maturity and a response to social perplexities. An obvious candidate for a philosophy of information systems is semiotics. A serious obstacle, though, has been the reductionist development in the previous century of semiotics, thereby moving it away from phenomenology. Then, in its turn, a shortcoming of traditional phenomenology lies in its reduction to the object-in-itself which implies the attempt at actually defeating information*

*This paper sketches a phenomenology from an outspoken behavioral perspective and connects it with a behaviorally oriented semiotics. A unification of phenomenology, semiotics and pragmatism results. It 'fits' because phenomenological perspective is semiotically accommodated through an extended formalization, i.e. from triadic to enneadic dynamics in semiosis. Especially relevant as a foundation for information systems is the dynamically operative concept of sign, or information. Philosophical (re)unification thus underlies a highly practical phenomenological method for including various perspectives in a single conceptual information model. It shows the direction, through conceptual modeling, for developing actual information systems as more comprehensive, flexible, efficient, manageable, etc., artifacts.*

**Keywords:** Phenomenology, semiotics, pragmatics, semiotic ennead, reflexivity, conceptual information modeling, perspectival behaviorism, philosophical unification

## Dynamics of Opening

This paper has been written with the purpose of contributing to philosophical foundations of information systems. Please consider the previous sentence as the opening statement. Do you believe you can take it at face value? For myself I certainly do not. A critical assessment, deconstruction if you like, is always required for approaching an 'opening' in any constructive sense. For example, isn't it a gross misrepresentation to start off by claiming I have finished writing? Am I not actually requesting you to start reading from the perspective of my already accomplished purpose?[1] But then, how did I get a bearing on your perspective? Isn't your perspective always a purpose, too? So, is this paper about joining purposes, respectively perspectives? Yours to join mine, that is (because I've been doing the writing?). Indeed, challenging face value, what about philosophical foundations for joint, shared, or whatever, perspectives?

As another matter, how should you imagine contributions to foundations being made? Applying the metaphor of building, are fundamental contributions a special kind of building element? What is it, then, that makes them special? Do they have their own particular philosophical foundations? Or no foundations at all? Both directions suggest foundations are at the most relative, bringing me, and you, for that matter, once again back to perspective. And, by the way, why are philosophical foundations

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[1]Augmenting dynamics of opening is that, in fact, I did write my first sentence first, thereby *creating* rather than concluding perspective. But what perspective guides creation, etcetera?

habitually mentioned in the plural? Thus it seems the metaphor is stretched beyond relevance. Isn't the whole point of referring to a foundation that it is considered essentially singular? Used metaphorically, then, foundation is equivalent to philosophy. And philosophical foundation is a pleonasm. The field may simply be labeled: philosophy of information systems. It involves an inquiry into fundamental concepts for information systems, i.e. the concepts constituting the foundation. Or, as the next suggestion for opening the issue: Does the foundation, or philosophy, constitute a proper constitution?

With reference to constitution, a shift in metaphor and accompanying perspective is realized. Still regarding foundation, information systems are all metaphorically grouped in one building category. The procedure should serve efficiency. For the idea is that those members of one and the same category all receive 'support' from one and the same foundation. In this sense, a categorical philosophy is also a pleonasm. Every category, discipline, or whatever, sooner of later reaches a stage where general concepts, prohibitions, rules, guidelines, admonishments, etcetera, come to terms in 'its' philosophy.

A constitution, however, can never be founded on the assumption of — the metaphor of — building categories. Separate foundations annexing philosophies only 'work' when allocation is strictly unambiguous. A conflict of philosophies may arise from allocation to several categories. Which philosophy applies? It should be evident how the requirement for disjunct categories reflects severe myopia. For when is an information system realistically only an information system, and nothing else?

In the other direction, doubt is justified as to how homogenous a category is. Again, which philosophy of foundation applies? In the case of an information system, for example, does it depend on the kind of system? Or on the particular aspect you are or I am currently considering? Relevant differences effectively result in additional specialization. Where does it all end in terms of philosophy?

Indeed, constitution surely is a more productive metaphor than foundation. Where foundation ignores differences, plurality, relativity, multiplicity, etcetera, at least in a democratic sense constitution embraces such concepts. Society is alive with and from the interplay of differences and cohesion. So, even when I continue here with contributions under the limited heading of philosophy-as-foundation of information systems, I should only actively do so without categorical privilege. As with any engagement, also my engagement with information systems requires foundational concepts allowing for responsible integration in life's totality. Their integrative purpose makes them essentially constitutional concepts. Beyond every foundation is the social constitution. It is therefore the constitution, and of course ultimately our society beyond that at which a particular foundation must necessarily be oriented. The philosophical unification I'm proposing to contribute to here, should therefore especially suit the purpose of opening engagement with information systems to more encompassing perspectives. Not surprisingly when looking for perspective, I've found a source of inspiration in perspectival phenomenology (Haynes 2000).[2]

## Toward Phenomenological Realism

Explaining phenomenology is always doing phenomenology. Oh, really? Yes. And would you believe it, simultaneously it also works the other way around. Doing phenomenology is always explaining it, too. Mmm. Another characteristic is that phenomenology isn't true in any analytical sense, or that it supports analytical truth(s). So, phenomenology doesn't start with positive definitions of absolute concepts. In fact, it denies …, ah, that's also interesting! What does it deny? Are absolute concepts false? No, phenomenology seeks to escape judgment from/on the foundation of absolute truth or falseness. The category of absolutes is radically irrelevant. However, it certainly wants to be consistent. A way of doing phenomenology therefore is explaining what its characteristic consistency … consists of. Indeed, that's minimally the task I've set myself for this paper. It turns out a relative positioning, rather than an absolutist trajectory from start to finish, offers advantages for realism. But consistent realism requires a check on phenomenology's relativity, if only for efficiency's sake (which clearly is, efficiency, that is, a very realistic requirement, especially from a doing, or behavioral, perspective). That is where assumptions, or axioms, or premises, etcetera, come in. The necessary and sufficient assumptions for phenomenology are both done and explained through this paper.

## Von Münchhausen's Bootstraps, or Phenomenological Reflexivity

Where can I start? When I now refer you back to the opening of this paper, you'll realize that at this particular point I'm actually already well on my way. Paradoxical as it may sound, a phenomenological inquiry inevitably starts in the middle. The paradox

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[2]I also acknowledge my gratitude to John Haynes for his personal support in 'opening.'

is even pervasive. Done properly, the middle, or center, is precisely where the inquiry develops at every step, right up to its conclusion. So, here I am. And, so are you.

Similar to the deconstructive treatment given my opening sentence for this paper, I could begin to wonder about the name given to this phenomenology-thing. See?! I'm immediately caught up in a consequential distinction. Obviously, phenomenology is a name. But I should really be looking closer at preconditions for name-ness. There is, for example, the biblical variety. More recently, it has become commonly known as naïve realism. It considers things as primary. Then, every thing is given its one and only — proper — name. The concept of truth-as-correspondence is based on the inverse function, i.e. where every name relates back to a particular thing.

Phenomenology is a name, indeed. There is just no way of escaping names. At least, so far I certainly haven't found out how to avoid them. However, phenomenology does constitute an escape. One thing — am I sure I want to let that word, or name, stand here? — in its attempt to surpass it is precisely the, say, commutative law that relating names with things should underlie. Still, phenomenology doesn't replace one-to-one mapping between names and things, vice versa, with — a claim for general validity of — another procedure. It certainly is not positivist in any absolute sense, but critical in that respect.

Phenomenology's criticism of naïve realism is only a means to the end of constituting a constructive philosophy. It is important to recognize that constructive phenomenology is able to be appreciated as observable, as realist, as positivist, etcetera. But of course its realism is (very) different from that of naïve realism, its positivism (very) different from logical positivism, its analysis (very) different from analytical philosophy, etcetera.

The problem with doing/explaining phenomenology is that it never comes across from the perspectives it criticizes. In general, established paradigms are difficult to change (Kuhn 1962). Still, I can only both start and continue to constitute the actual phenomenological constitution in a phenomenologically constructive fashion. This approach is reminiscent of how Baron Von Münchhausen pulled himself out of a swamp by holding on to nothing but his own bootstraps. How he did it might be physically problematic. Phenomenologically, as I will emphasize regularly, such reflexivity marks consistency (Bloor 1976, Woolgar 1988, Sandywell 1996).

## Meet the Phenomenologist

As long as I steer my inquiry in the middle, getting side-tracked is no problem. But let me now finally begin in earnest from phenomenology as-a-name. The name suggests a doctrine dealing with phenomena.

Structuralism supplies a simple, yet productive, procedure for getting conceptual development underway (Lévi-Strauss 1962). It basically argues that a concept should be considered as constituted from — and here's already a strong taste of reflexivity — concepts. The procedure may be repeated. In fact, there is no absolute limit to applying reflexivity. And please be patient with me regarding the concept of … concept. I'll get to that soon enough.

A doctrine of first steps first requires us to start by decomposing phenomenon. I've constrained myself to obey a general rule. Once introduced, a concept should not reappear at another level of decomposition. The consequence for phenomenon is that it immediately disappears from view as a detailed concept. It should for phenomenon is the whole I start from, here.

A phenomenon is a subject's experience of an object. I believe it might help to sketch a visual model, as in figure 1.



**Figure 1. A First Decomposition of Phenomenon**

Is this what I want? No. The subject's experience doesn't bring, or whatever, an object within the experiential scope, whatever that may be. It is completely the opposite. Experience involves constituting dynamics between, on the one hand, what-is-taken-in and, on the other hand, what-is-thereby-left-out. It is the belief-of-an-object, a concept, for short, that constitutes the concept of object. An object is therefore essentially provisional. For a subject, an object is always an object-as-experienced, i.e. a belief or concept. Does figure 2 come closer?

Yes, it seems more consistent. A problem remains, though, regarding the distinction between subject and object. How does a subject experience itself? In that case, doesn't
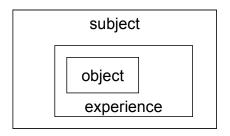
the concept of object belong inside the boundary of the subject, but outside the boundary of experience? Or, when it is kept outside the subject, am I not actually limiting the concept of subject to that of experience and, hence, why should the distinction be maintained between these?

I avail myself of reflexivity. For it is also a provisional subject I'm actually introducing. It is the subject-as-phenomenologist, i.e. the subject in its capacity to be constitutive of phenomena. Starting from phenomenology, other aspects of subject-being will be conceived of as objects outside the range of the phenomenologist. They may, or may not, fall within the boundary of how the phenomenologist conceives itself as an encompassing subject. Or an object may be believed to exist crossing the subject/object-distinction. In figure 3, the range of possibilities is visualized by letting the boundary of the subject run through the object. Depending on the concept, i.e. the experienced object, it shifts.
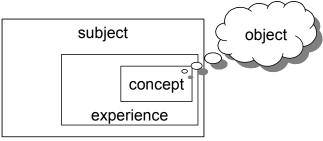


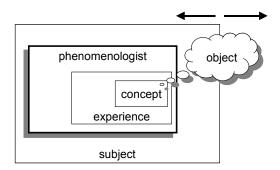**Figure 2.  Experiential Internalization Includes Belief in Externalization**



**Figure 3.  The Concept of Phenomenologist Minimizes Contradictions**

It should be clear I started by considering phenomenon as a … phenomenon. There's really no limit to what may be taken to constitute a phenomenon. It takes an exercise of care, though, always to remain consistent with assumptions. For example, a particular concept is just as much an object-for-a-subject where a concept-of-a-concept constitutes the experience. Here, engaged as I am to do/explain phenomenology itself, I've chosen as the next step to concentrate on the phenomenon of the phenomenologist. No, this time I am first side-tracked to artificial beginnings.

## On the Nature of Assumptions

It has long been a strangely neglected perspective that phenomenology sooner or later boils down to assumptions about some actor doing phenomenology, about a subject-as-phenomenologist, that is. Now, doesn't this remark shift the middle, once again? How do I experience the concept of assumption?

An assumption is an element of constitution. As I've argued, every phenomenon may be decomposed. Every middle potentially starts another middle, ad infinitum. Assumptions help to put a stop to shifting. For you or I normally don't decompose beyond assumptions. They supply the phenomenologist's foundation. Assumptions perform a boundary function. You and I construct from assumptions, we compose with assumptions as elementary phenomena. What happens when we experience a contradiction is that we either ignore that experience, or try to redesign our assumptions. The latter exemplifies what is called the scientific attitude. We shouldn't confuse attitude with fact. Especially an assumption is never a scientific fact in any empirical sense. At the most, it is a precondition for what we consider scientific facts, i.e. experiences which are mutually consistent from the perspective of the assumption(s).

The (re)design of assumptions requires trial and error or, as Popper suggests, conjectures and refutations (Popper 1963). So, one way to write the history of phenomenology is by sketching the development of assumptions. It is a progression of educated guesses, but not necessarily progressive. I refrain from the historian's task, though, apart from supplying a few anecdotal references. Instead, this short paper predominantly features my own assumptions.

The discussion of the nature of assumptions serves to prepare you for accepting an assumption as speculative, illogical, irrational, etcetera, from perspectives such as logic and rationality. Denying metaphysics, those disciplines actually pretend to function

without constitution. A deconstructive critique — another pleonasm? — cannot fail to bring hidden assumptions to light (Sallis 1987). In terms of attitude and subsequent procedure, it is therefore optimally scientific to face the inevitable up front. Assumptions need to be made explicit. And don't be shocked when they escape empirical proof. In 'fact,' as boundary concepts they should. Assumptions force closure in one direction of inquiry, thereby opening it up for other directions.

## Faculties of the Phenomenologist

I have already made several assumptions for phenomenology. Figure 3 summarizes my efforts so far. However, I haven't openly applied the essentially arbitrary nature of assumptions for inspiration. Let me return to the point where a phenomenon establishes a relationship between subject and object. Of course, I am now held to maintain their distinction. It supports the question "Why are subject and object distinct under their heading of phenomenon?" Whatever the answer, it counts as additional assumption. So, again, why?

The world encompasses life. Life is a phenomenon exemplifying order (Prigogine and Stengers 1984). It occurs through concentrates. A particular concentrate lives as long as it maintains its — relative — concentration. The maintenance of concentration establishes interaction. The concentrate is an actor.

Life for an actor is driven. The force of concentration is highly unpopular as a scientific concept. Indeed, everything teleological lies beyond empirical verification. However, it yields a powerful assumption. It is called, for example, conatus (Spinoza 1677) or will (Schopenhauer 1813).

An actor's conduct, or behavior, varies with concentration. Concentration increases with — the capacity for — variable behavior. Please note that I don't assume an actor is free-from-the-world to determine behavior. Rather, an actor's behavior is variable in the sense that (s)he[3] may develop, change, it over time. Such development is usually called (un)learning. An especially high level of concentration — I'm of course still assuming, here — occurs when an actor applies practice for learning. (S)he prepares with actual behavior for contingency. At a higher level yet, the actor simulates behavior; experience develops within concentration, in particular within experience itself.

Perhaps you've noticed I couldn't resist starting to answer the question "How does a subject distinguish subjects?" That is where the phenomenologist comes in. Highly simplified, my assumption reads that a subject exhibits a phenomenological faculty when (s)he experiences the world as related objects. Other names for such a faculty are mind, intellect, cognition. As Schopenhauer argued, the intellect is an instrument of the will (Schopenhauer 1818). Intuition — another assumption! — is the will's application of experience.

Here, an emphasis is put on behavior. Using such terminology harbors the risk of confusion. No, I certainly don't put phenomenology forward as a physical stimulus-response kind of behaviorism. So much should be clear from our assumption of higher levels of concentration for which dynamics of experience provide constitutive force.

## Toward Behavioral Perspective: Overcoming Object Bias

Several historical assumptions are now recognizable as obstacles to establishing a phenomenology with minimum contradictions. Husserl, for example, developed his phenomenology as an extension of hermeneutics. What he inherited was a bias of observation. In his early work (Husserl 1913, see also Kohák 1978), Husserl modified it to an object bias. An assumption he implicitly made and which is therefore all the more difficult to trace, is attributing absolute reality to objects. What exists, in other words, are self-contained, self-sufficient, objects. Or, written in phenomenological style, the object-in-itself. This is synonymous with the thing-in-itself (German: Ding-an-sich).

Husserl recognized the object-in-itself doesn't enter into day-to-day experience. It is only known partially, that is, as a phenomenon, as Husserl called the result of normal observation.

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[3]Why do I suggest sex? Well, assume as I may, my concept of actor should at least include man. And I don't want to discriminate. Now, isn't this mention of man equal to smuggling in an assumption? No, I'm only explaining a mode of addressing readers. It does confirm, though, how difficult it is to be precise and polite at the same time.

It is now clear from his assumption that Husserl's phenomenology is not aimed at phenomena, but at overcoming them. He prescribed a procedure, starting — and hence the name: phenomenology — from phenomena, for arriving at the experience of the object-in-itself. The concept of correspondence between experience and object-in-itself supported the claim that Husserl's phenomenology entails a scientific procedure.

It is well beyond the scope of this paper to discuss details of Husserl's original experiential recipe. Stating it paradoxically, the more he investigated it as an object-in-itself, the less experience deserved to be conceived as such in an absolute sense. Husserl's later work therefore shows an increasing value attached to subjectivity. His assumptions shifted to the extent that the object-in-itself is elusive for the subject's experience, no matter what procedure is applied. It becomes evident that designing a viable foundation for objective knowledge poses an unsolvable problem. As always, the way out is to apply a different perspective. Change the problem, if you can. At least I take it that I should leave the basically theological orientation that knowledge is an end to itself. Rather, priority lies with behavior and knowledge is merely instrumental to behavior. I assume knowledge correlates with the degree of life-as-concentration and behavioral variety that I have proposed as concentration's measure. Knowledge contributes to the application of behavioral perspective. A phenomenon, then, is an experience from a particular behavioral perspective. It is the perspective that controls the experience of object-for-subject. And from the perspective of object-for-subject I'm radically forgetting about the object-in-itself. From the perspective of perspectival phenomenology it simply is a contradiction.

## Perspectival Behaviorism as a Phenomenology

I am aware I'm courting disaster by referring to behaviorism. Reputations have been damaged through confused disputes. But the inescapable point, one which I'm forcefully making and not afraid to do so, is there are different behaviorisms, too. And perspectival behaviorism definitely is a phenomenology. One of its differentiating concepts is that of behavioral perspective.[4]

In order to establish my assumption concerning perspective, some of earlier assumptions need some embellishing, first. About experience I've already argued that it's not just archival in the past tense. An actor also experiences simulation of behavior — in vernacular terminology: thinking — and so I may be permitted to view experience especially as an archive of behavioral frames, scripts, plans, etcetera.

From the second possibility for behavior onwards, the actor should be able to deal with choice. Why does (s)he act the way … (s)he does, and not in any other way for which the potential also exists? Is it, after all, reducible to deterministic processing of a particular stimulus? Does the stimulus effectively 'do' the choosing? An honest answer is that I don't know. And I'm also not up to the task of continued decomposition along such materialistic lines. It's really a text-book case of assumption-begging. I am certainly ready to act responsibly.

The educated guess I propose at this stage is that the actor intuitively exhibits behavior. Now I don't want to reify unnecessarily, but let me for one moment imagine intuition as a faculty. It provides the actor with perspective. It resides within the actor. It is instrumental for the whole actor-as-will. Again, its contribution is a perspective. Intuition punctuates (Brouwer 1907) the flow of existence through perspectival shifts. From a changed perspective, different behavior flows. But what about perspectival shifting in the first place? Indeed, as dynamics of concentration it amounts to behavior, too (Mannoury 1909). It is precisely such constitutional behavior —a categorical imperative, perhaps? — which by submitting an assumption we escape from explaining. I repeat it is from the actor's behavioral variety that I've been led to assume the concept of perspective. Then it follows that every behavior — assuming punctuation as suggested, above — is essentially from a particular perspective. How does this work out for the concept of phenomenon? My last version was to consider a phenomenon as object-for-subject. Introducing perspective, I'm refining it to object-from-perspective. It holds for perspective results from intuition which in its turns resides in the actor annex subject.

## Pragmatist Turn in Phenomenology:  Unification with Phenomenological Semiotics

As far as a pragmatic turn is concerned, there is actually little to add. I have already concluded it through the previous paragraph. However, the reference to pragmatism emphasizes the turn away from the assumption of object-in-itself. Behavioral perspective

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[4]Up to this point, perspective has already been mentioned quite often. I have so far deliberately left it unchallenged. Yes, a second reading should emphasize my application of reflexivity, in this case concerning the perspective on perspective, and so on.

is an essentially pragmatist concept. There is no use for disappointment about object-in-itself turning out an illusion. It simply is behaviorally inconsistent.

An orientation at pragmatism as developed by Peirce naturally leads to his semiotics (Peirce 1905). Peirce's concept of sign is especially relevant (Peirce 1902). I remind you that Husserl experienced increasing difficulties in arguing about the relationship between object and experience. An object doesn't magically impress, or whatever, onto experience; an elaborate process underlies their relationship.

Peirce should be credited for an especially efficient set of assumptions dealing precisely with experience and behavior. He made the relationship itself explicit as a third term: sign. His key idea for semiotics is that concept (Peirce: interpretant) is no longer directly related to object. Sign mediates. A semiotic triad results (see figure 4) and Peirce prescribes its irreducible nature, i.e. any reduction compromises the integrity of so-called semiosis.[5]
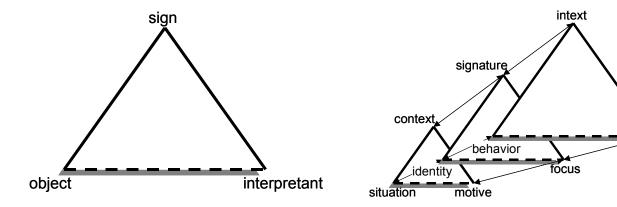


**Figure 4. Peirce's Semiotic Triad**



**Figure 5. The Semiotic Ennead**

It may be readily recognized that the semiotic triad doesn't yet accommodate perspective. In this sense, above, I've already specified pragmatism beyond Peirce's concept. At this point, a corresponding extension of his formal summary of semiosis is called for. Precisely such a design has already been undertaken elsewhere, yielding an enneadic model of semiosis (Wisse 2002). With some slight modification of terminology it is reproduced here as figure 5.

The ennead retains the triad's essential assumptions. It also irreducibly links all its elements as constituting semiosis. Peirce's original three elements reappear as dimensions. So, the dimension of interpretation involves motive, focus and concept. In the terminology so far applied in this paper, interpretation may be taken as equivalent with experience. As one of the experiential ingredients, a subject's experience of will equals motive. Experiential perspective is focus. Concept remains as a term. However, as a concept it is changed. It depends on focus that connects concept with motive. A shift in focus leads to different motive-concept pair.[6]

It is beyond the scope of this paper to elaborate on enneadic dynamics (see Wisse 2002). I just mention that shifts along a dimension are also assumed to occur hierarchically. In one direction, the focus can shift into what was motivational before. Thus the concept broadens. In the other direction, the focus may shift down to a narrower concept than was considered previously. This is accompanied by a broader motive.

Between dimensions, correspondences rule. Perspective now appears as the irreducible subtriad of focus, signature and identity. Still orienting ourselves at Peircean semiosis-as-dynamics, a signature corresponds to a focus. It follows that a sign's context is

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[5]I emphasize that Peirce's irreducible triad establishes his semiotics as a phenomenology. So, an appeal for a transcendental-semiotic perspective (Apel 1998) merely revisits Peircean semiotics-as-transcendental.

[6]I have been careful to avoid any discussion of consciousness. And of the unconscious, for that matter.

experienced as a motive, supporting the experience of an objective situation. In similar fashion, other relationships within the ennead hold. Along the object dimension, perspective results in experience of an object's essentially situational behavior.

Indeed, it has taken quite some development getting from object-in-itself to object-as-situational-behavior. But it is really still very much phenomenology, even increasingly so.

## What about Information Systems?

A general benefit of unification such as I've outlined for phenomenology, pragmatism and semiotics, is that a check on proliferation avoids wasting efforts.[7] Why should philosophical battles be fought out all over again when the specialized perspective of information system is not even behaviorally relevant?

With avoidable confusion as much as possible eliminated beforehand, perspectival phenomenology, as I have labeled the result of constitutional unification, is indeed of special interest for information systems. With respect to information, essentially design always is behavioral design. Perspectival phenomenology, involving the semiotic ennead, leads to a modeling formalism for capturing requirements from the perspective of … behavioral perspective. Through augmenting phenomenology with the Peircean dimension of sign, first of all the actor annex subject itself is considered an information system. It guides the proper  design orientation. The primary concern lies with relevant experiences of stakeholders in their real-life behavioral exchanges. Perspective provides the key to recognition, and subsequent modeling, of necessary and sufficient differentiation of experience.

In their capacity of stakeholders, actors engage in joint information annex social systems for coordinating their efforts. Now, secondly, every formal information system for coordinative support is an artifact. The quality of coordination is of course primarily enhanced through improvements in conceptual design (see above). Formal flexibility should not overwhelm the designer as a contradiction. He must pursue it as a practical reality; again, perspectival phenomenology offers guidelines. Most practically, too, the conceptual formalism for controlling — dynamics of — perspectival variety serves the express purpose of implementation with digital technology. How this match is actually established, is beyond the scope of this paper (see Wisse 2001). Here, the emphasis is on perspectival phenomenology as a foundation. From this vantage point, what shows itself as the critical advantage is not just that one particular perspective should feature explicitly in a conceptual information model. Especially advantageous is that *various* perspectives are *all* treated in a single model, and *comprehensively* so, enabling controlled optimization for shifting from one perspective to another. An operational information system genuinely exhibiting such multiple perspectivism is not simply an artifact for the so-called semantic web. Rather, it exemplifies the pragmatic web of stakeholders.

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[7]Opportunities for philosophical unification, or harmonization, don't stop here.  Phenomenologically grounded orientations at, for example, social understanding and communication (Mannoury 1946, 1947-8) and education (Von Glasersfeld 1995) can also be incorporated (pun intended).

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