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The Ontological Constitution of Bounding-Judging in the Phenomenological Epistemology of von Bertalanffy's General System Theory

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An analysis of the current presentation of boundary judgments in the Critical Systems literature highlights a general result: that the activity of bounding has been, implicitly or explicitly, considered as an epistemological issue. By arguing that knowledge is not produced singularly by bounding, the paper informs this general result. This, in turn, informs other results, which have emerged in current understanding. In particular, the paper argues (a) the reason why knowledge indeed never attains the status of "objective or right" knowledge, (b) how critique is dependent on some positing of knowledge, and (c) the exact place where critique is actioned. von Bertalanffy's attempted systems epistemology is considered at length because it explains and informs the epistemological conclusions seen to have been drawn in the current Critical Systems literature. von Bertalanffy's attempt requires the support of Husserlian phenomenology, especially Sartre's understanding of it. This requires an in-depth discussion of the phenomenological understanding of consciousness. Since the conclusions stem from von Bertalanffy, the paper reconsiders the status of General System Theory in Critical Systems Thinking.

KEY WORDS: Critical Systems Thinking; General System Theory; Sartre; von Bertalanffy.

1. INTRODUCTION

Ever since the publication of Ulrich's Critical Heuristics of Social Planning (1983), the notion of boundary judgments has received increasing attention in the systems literature (Jackson, 1985; Ulrich, 1987, 1988a,b, 1994; Flood & Jackson, 1991; Tsoukas, 1992; Midgley, 1992, 1993, 1994, 1995, 1997a,b; Romm, 1995; Ormerod, 1997; Clarke *et al.*, 1997). In general, Ulrich has been identi-

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fied as contributing this important notion to systemic thought (Midgley, 1997b). Ulrich himself (1988b), however, has noted that the notion was first introduced by Churchman (1971). It is well known that Ulrich's (1983) interpretation and development of this notion is grounded in an extensive Kantian philosophical argument. This paper focuses on one particular aspect of the presentation of boundary judgments. A brief review is, therefore, undertaken on how boundary judgments are presented before positing the concern in this paper.

1.1. The Presentation of Boundary Judgments

Ulrich's (1983) boundary judgments are those judgments that govern the delineation of the boundaries of a system—where system is understood to be the problem situation:

> Whenever we apply the systems concept to some section of the "real world," we cannot help but make strong a priori assumptions about what is to belong to the system in question and what is to belong to its environment. We call such assumptions boundary judgments (1988a).

Ulrich (1983) conceptualises them as *a priori* to empirical propositions:

> The problem with boundary judgments is that there is no such thing as "objectively necessary" or "right" boundary assumptions, yet all subsequent investigation of "the problem" and suggestions for "improvement" depend on them (1988a).

It is clear from Ulrich's thesis—since his focus is always on "boundary questions" (1983, p. 226) but never on judgment questions—that the "judgments" in boundary judgments are only those about the boundary, that is, about the bounding activity itself. In other words, Ulrich's "judgment" presupposes, and is directed at, *only one* activity: that of bounding. It is important to bear this in mind at the moment, but consider further.

Midgley (1995) notes that Ulrich was "the first person to use the terms "critical" and "systems" together," thereby creating the methodology of critical systems heuristics, and he explains this marriage:

> Truly rational inquiry is said to be critical, in that no assumption held by the inquirer should be beyond question. It is also systemic, however in that boundaries always have to be established within which critique can be conducted. Indeed, Ulrich claims that both ideas are inadequate without the other. Critical thinking without system boundaries will inevitably fall into the trap of continual expansion and eventual loss of meaning (as everything can be seen to have a context with which it interacts, questioning becomes infinite). However, systems thinking without the critical idea may result in a "hardening of the boundaries" where destructive assumptions remain unquestioned because the system boundaries are regarded as absolute (1997b).

Again one notices the singular importance placed on the bounding activity,

in this case, due to its intimate relation to critique. Now consider Midgley's (1992) summary of "two needs" which are stressed in Critical Systems Thinking:

> In Critical Systems research, two needs in particular are stressed: first, the need to be critical about defining systems boundaries and, second, the need to establish boundaries within which critique can be conducted.

It is important to understand that, contrary to Midgley's claim, there is *only one* need that is being posited: the need for critique. This is clear enough in Midgley's "first need." The "second need," however, confuses the issue since it refers to the establishing of boundaries: in effect, Midgley states that there is *a need to establish boundaries*—as if this activity of establishing boundaries is arbitrary and does not *always* constitute systems or decision making. Furthermore, the way Midgley has expressed the "second need" points to a conclusion that, in contrast to the belief in Critical Systems Thinking, there might be boundaries which can be established within which critique *cannot* be conducted. It is understood that Midgley would not subscribe to such an understanding of his summary and, although it may appear as a pedantic step, for clarity, a rearrangement is proposed:

> In Critical Systems research, one need is identified: the need for critique. Critique is needed when defining systems boundaries; given defined boundaries, critique needs to be conducted therein.

This highlights two issues. First, prior to the positing of critique as a need, there is a recognition that there exists an activity of defining boundaries: the activity of bounding. Second, along with Ulrich, the *only* prior activity, which has been identified by Midgley, is the activity of bounding.

Next, Midgley (1997a) indicates the point at which critique is first posited as needed:

> Critique, when translated into the terms of systems methodology, is about exploring different possible boundary judgements.

Critique is, therefore, indicated as needed when addressing the manner in which boundaries are, or might be, delineated. In summary, one activity, that of bounding, has been highlighted by Midgley and Ulrich as being *a priori* to subsequent possible critical conduct; when such critical conduct is actioned, it is directed at the bounding activity.

1.2. Reconsidering the Presentation

Midgley (1997a) goes on to explain that critique is "exploring different possibilities for knowledge and identity," and also stipulates the boundaries in question as being those "of knowledge, and of the involvement of subjects in generating that knowledge." Ulrich (1983, pp. 175–264) also ascribes an epis-

temological importance to the notion of boundary. In retracing the presentation above, consider what is being said if "knowledge" is substituted for "boundary".

Ulrich's statements say that judgments are directed at knowledge—more specifically at knowledge generation. Knowledge (and knowledge generation) can also be quite easily understood as being *a priori* to empirical propositions since they require it in order for investigation and improvement to even begin. In paraphrasing Ulrich (1988a) above, one also reaches the following assertion:

> The problem with knowledge is that there is no such thing as "objectively necessary" or "right" knowledge.

Now, turning to Midgley's (1997b) explanation of the marriage between the terms "critical" and "systems," one can paraphrase as follows:

> Knowledge always has to be established within which critique can be conducted. Critique without knowledge will inevitably fall into the trap of continual expansion and eventual loss of meaning. However, knowledge without critique may result in a "hardening of the knowledge" where destructive assumptions remain unquestioned because the knowledge is regarded as absolute.

Once again, one notices that the stress is on knowledge and that critique is directed on that. Moving on to the pedantic clarification made earlier, Midgley (1992) also reads as saying:

> In Critical Systems research, one need is identified: the need for critique. Critique is needed when defining knowledge; given knowledge, critique needs to be conducted therein.

So, prior to the positing of critique as a need, there is a recognition that there exists knowledge. Second, along with Ulrich, the *only* prior activity, which has been identified by Midgley, is the activity of knowledge generation.

Finally, and paraphrasing once again, Midgley (1997a) indicates the point at which critique is first posited as needed:

> Critique, when translated into the terms of systems methodology, is about exploring different possible knowledge.

Critique is therefore indicated as needed when addressing the manner in which knowledge is, or might be, generated. In summary, one activity, that of knowledge generation, has been highlighted by Midgley and Ulrich as being *a priori* to subsequent possible critical conduct; when such critical conduct is actioned, it is directed at this activity.

1.3. Aim of the Paper

From the analysis, the following results obtain: critique is actioned at knowledge; knowledge is understood as never attaining the status of "objec-

tive or right" knowledge; there must be knowledge in order for critique to be introduced—thus critique is dependent on some positing of knowledge; without critique, knowledge is crystallized—attaining a false status of objectivity.

These results serve to highlight not only the concern in this paper but the conclusions to be drawn as well. Critique will indeed be shown as actioned at knowledge—but what constitutes knowledge? According to Midgley and Ulrich, it is bounding that constitutes it. But what does this mean? How is knowledge magically produced in a bounding activity? The paper will show that knowledge is not produced singularly by bounding and thus will inform the earlier interpretation whereby Midgley and Ulrich appeared to have attributed epistemological importance singularly to the activity of bounding. This, in turn, will inform (a) the reason why knowledge indeed never attains the status of "objective or right" knowledge, (b) how critique is dependent on some positing of knowledge, and (c) the exact place where critique is actioned. Some comment will be made on the issue of the crystallization of knowledge but, given what emerges in this paper, this issue requires another time to be addressed in full.

The thesis here is interwoven with an investigation into von Bertalanffy's (1968) attempted systems epistemology. It is worth pointing out the reason why von Bertalanffy's systems epistemology has been qualified as "attempted." Faced with von Bertalanffy's writings, it becomes obvious very quickly that all of his philosophical deliberations are posited more as assertions and less as arguments. The lack of interrelated coherence between these deliberations, because of their having been posited in different papers at different times over a period of 40 years with no attempt to fuse them together into an identifiable position, presents what appear to be insurmountable problems for the Bertalanffyan scholar. Nevertheless, this perceived difficulty calls for an attempt at synthesizing the pieces of the puzzle into one coherent point of view. The fact that such an attempt has yet to surface in the literature only makes it the more urgent and may spur further interpretations useful to systems scholarship. And as interpretations they will remain, for von Bertalanffy, in this respect, left his successors with no choice but to interpret his philosophical deliberations and any systemic coherence therein. It will, in the end, not be the case of which interpretation is more persuasive but of which deals with the deliberations systemically, as a whole philosophical point of view, neither too selectively so as to abuse and obscure the original nor too broadly so as to venture into conclusions with which von Bertalanffy may have not agreed. Where conclusions are reached to which von Bertalanffy never explicitly adhered, it should be made clear how von Bertalanffy would have necessarily accepted them based upon the premises of his explicit deliberations.

The reason why von Bertalanffy's attempted systems epistemology is considered at length is because it explains and informs the epistemological conclusions seen to have been drawn by Midgley and Ulrich. von Bertalanffy's attempt requires the support of Husserlian phenomenology, especially Sartre's

understanding of it. This requires an in-depth discussion of the phenomenological understanding of consciousness. Since the conclusions stem from von Bertalanffy, the paper will reconsider the status of General System Theory in Critical Systems Thinking.

Prior to launching into the thesis here, two particular points identified previously by this author (Georgiou, 1999) should be borne in mind: first, the stress that von Bertalanffy places on coupling problems *and* modes of thought about problems when discussing systems epistemology. This, it was argued, reflects his sympathy with the phenomenological (as opposed to the analytical) view in philosophy that consciousness cannot be ignored. More accurately, where "problems" may be thought of as phenomena, and where "modes of thought" may be thought of as consciousness, von Bertalanffy, by conjoining the two, indicates that their interrelationship cannot be ignored. The understanding that von Bertalanffy has of this interrelationship will be presented in the following sections. The other previously identified point to bear in mind is von Bertalanffy's alignment with Sartre when discussing the Cartesian *cogito* and the question of the existence of an internal ego. This will be fully explicated in the ensuing sections and its relevance to von Bertalanffy's attempted systems epistemology will be shown.

2. CARTESIAN ISSUES

The *Groundwork* (Georgiou, 1999) pointed to von Bertalanffy's rejection of Cartesian dualisms by stating that von Bertalanffy's view of the Cartesian *cogito* mirrors that of Sartre. Although what von Bertalanffy has to say is minimal, it is sufficient to enable certain paths to be taken which coincide with Sartre's philosophy.

von Bertalanffy's discussion of Descartes stems from the former's concern to attempt a systems epistemology. The first hints that this epistemology is linked to a phenomenological approach to knowledge were made in the *Groundwork* where the differences between analytic and phenomenological philosophy were discussed. Against analytical philosophy, which is centered primarily on epistemological and logical concerns (Jones & Fogelin, 1997), phenomenology—as will be shown in the following exposition of its approach to knowledge—takes a systemic view of ontology and epistemology. The link between systems epistemology and phenomenology centers upon von Bertalanffy's stress on coupling problems *and* modes of thought about problems (1968, p. xxii; Georgiou, 1999), reflecting his sympathy with the phenomenological view that consciousness cannot be ignored. In addition, as discussed in the *Groundwork*, both von Bertalanffy and Husserl believed that the attainment of certainty in knowledge lies in the interfusion of knower and known, or consciousness and its object. In line with Husserl's discussion about the problems of naturalism which led the latter to develop his intuition of essences, considering these as being the

"principle" of natural laws (Levinas, 1998, p. 113; Georgiou, 1999), von Bertalanffy further stresses (1968, p. xxii) that he embraces a "perspective" philosophy in which science is but "one of the 'perspectives' man ... has created to deal with the universe." Indeed, Husserl's argument for the intuition of essences bears most relevantly upon von Bertalanffy's systems epistemology as will be shown in the ensuing sections. However, it is unfortunate that von Bertalanffy used the term "perspective" to label both his own philosophy as well as those of science and other approaches to the world, for it only confuses an understanding of the systems approach. Given his ensuing description of the systems approach as the search for the existing *a priori* systemic structures applicable to a wide range of phenomena—"a doctrine of principles applying to all (or subclasses of) systems" (1968, p. xix)—it appears that von Bertalanffy used the term "perspective" rather hastily. His writings point not simply to the development of one perspective or a new perspective, they point toward the search for the fundamental principles of reality, which reality is understood as being systemic thereby requiring a systems epistemology in order to attain certain knowledge of it. However, there will be occasion later to revisit von Bertalanffy's use of the term "perspective" and the way in which he understands it to be "a more modest [epistemological] view" (1968, p. 247).

von Bertalanffy's search for unifying principles merits some comment here because initially it may appear to echo Auguste Comte's (1988) call for the discovery of the relations between the sciences and "to reduce their chief principles to the smallest number of common principles." Comparisons with Comte and attributions of positivism to von Bertalanffy are, however, misguided. First, whereas Comte was a reductionist, von Bertalanffy explicitly favors an antireductionist approach (Georgiou, 1999). Second, von Bertalanffy does not discount what Comte dismisses as the "theological" and "metaphysical" approaches to knowledge. This can be seen in his acute sense of incorporating what it means to be human in any approach to the world (1968, p. xxiii). Third, whereas for Comte any inclusion of an attempt toward understanding consciousness only reverts knowledge to metaphysical speculation, for von Bertalanffy consciousness cannot be ignored (Georgiou, 1999) and this aspect of the latter's thought is particularly highlighted in this paper.

Returning to Descartes, one recalls that his question was an epistemological one: what can be known (with certainty)? The step from this epistemological position to the ontological positing of reality and consciousness as logically cut off from each other is the really disturbing notion in Cartesian philosophy (Cooper, 1999, p. 48). It is this latter disturbing development in Cartesianism which von Bertalanffy first of all rejects and seeks to correct. In effect, the only aspect from the Cartesian *cogito* which von Bertalanffy accepts as given is the only one which does not resort to speculation: that Man engages with phenomena.

von Bertalanffy calls "obsolete" the Cartesian dualistic conception between

matter and mind, "of objects outside and ego inside, brain and consciousness," appealing to the "direct phenomenological experience," which has revealed such conceptions to be illusory (1968, p. 220). The obsolescence which von Bertalanffy confers is directed toward the mistaken step in Cartesianism from epistemology to ontology and to any conclusions, such as the ones he lists, which result from this step. If Cartesian dualism, with its attribution of logical independence between consciousness and phenomena, is made obsolete, then there still remains the question of the status of consciousness and phenomena and of how knowledge arises from (either or both of) them.

One can also consider whether it is the case that the ego is no longer inside but outside, and, hence, is actually just an object, not mysterious to the rest of the world but open to it, with its supposed owner only experiencing a privileged intimacy with it but no more knowledge of it then anyone else. This was first argued by Sartre (1998) in his application of a correction to Husserl's phenomenology whereby an ego need not necessarily be involved in the possibility of knowledge. Any agreement, such as von Bertalanffy's which embraces the "direct *phenomenological* experience" and simultaneously refers to the obsolescence of an ego inside must necessarily be an agreement with Sartre, although von Bertalanffy does not mention him by name. The relevance to von Bertalanffy's systems epistemology of discarding the notion of "ego inside" will unfold in the ensuing sections. First, however, von Bertalanffy's attempted systems epistemology is presented.

3. VON BERTALANFFY'S SYSTEMS EPISTEMOLOGY

von Bertalanffy said very little about his vision of a system epistemology. Moreover, he presented his theory in terms of assertions lacking sound argument so that more questions are raised than answered. However, such questions can be answered once the attempted systems epistemology has been compared to the phenomenological theory of knowledge.

For von Bertalanffy order exists in reality itself (1968, p. 83). He never defines what constitutes this order except to maintain that it can exhibit systemic structures. Furthermore, he never defines what he means by reality. It is not clear whether von Bertalanffy referred only to empirical reality or also to the reality of ideas, the interior life which, "though we do not wholly believe it yet, is a real life, and the intangible dreams of people have a tangible effect on the world" (Baldwin, 1959), as soft-systems methodology shows (Checkland, 1981a). von Bertalanffy uses the terms "categories of experience," "categories of human cognition," and "categories of knowledge" interchangeably when referring to the mental capacity of consciousness to recognise the order of reality. The "categories of knowledge" of organisms, man included, correspond to reality otherwise appropriate reaction and action would be impossible (1968, pp.

239–240): in other words, these "categories of knowledge" are required if the world is not to be viewed in a constantly chaotic, misleading manner. However, it is not necessary, von Bertalanffy argues, for the "categories of knowledge" to *fully* correspond to or represent the real world. It is, instead, sufficient that the "categories of knowledge" be isomorphic to the real world (1968, p. 241). Furthermore, for von Bertalanffy (1968, pp. 239–240), "the categories of experience... have continually to justify themselves" and thus they are not static but constantly dynamic. The condition of isomorphy which, for von Bertalanffy, is a required constitution of "categories of knowledge," relies on cognition, on the one hand, and reality, on the other, and the structure of the latter is such as to permit an isomorphical conception: a presupposition for the possibility of isomorphs is that order exists in reality itself (1968, pp. 82–83).

There is, therefore, some order in some reality which may be understood by some mental capacity, which appears to be constituted by categories of knowledge. In having the categories of knowledge continually to justify themselves, von Bertalanffy implies that these categories do not constitute, but are constituted by knowledge. Consider that if they constitute knowledge, the categories are *a priori* static givens into which knowledge may be allotted, much like messages into predefined pigeonholes on a wall. This would make of the mental capacity a predefined given with either a predefined infinite set of categories that would eventually be filled, thus enabling the temporal accumulation of knowledge, or a finite and, therefore, limiting set of categories beyond which knowledge would be impossible. Either way, this static composition of the categories renders them inapplicable to von Bertalanffy's epistemology. If, on the other hand, they are constituted by knowledge, then they develop dynamically (and in time) as knowledge accumulates. This renders a higher degree of flexibility to the mental capacity in both accumulating knowledge and rendering possible its disjunction and replacement by new knowledge.

Further, there is the sufficient condition that these categories are isomorphic to the order of reality. Consider that as predefined static givens, the categories have been given already as isomorphic to reality and, therefore, presuppose the existence of some supposed categories in reality with which they may match. Given *a priori* as statically isomorphic, however, limits the mental capacity in its attempt to tend toward a greater correspondence with reality; it furthermore eliminates any chance of full correspondence between reality and knowledge of reality in time. More adequate and apodictic evidence points toward the categories being constituted by knowledge, thus allowing for von Bertalanffy's dynamic and temporal isomorphic development of the categories as knowledge accumulates.

From this analysis of the "categories of knowledge" one can draw the following conclusion. For von Bertalanffy, there exists some order in some reality. This order, and therefore this reality, may be understood by some mental capacity. This mental capacity, in order to understand reality, is constituted by

categories, which are dynamically isomorphic to the order in reality. The categories themselves are constituted by knowledge, thus allowing for this dynamic and temporal isomorphic development of the categories as knowledge accumulates. The categories of knowledge, then, are dependent on the acquisition of knowledge. In von Bertalanffy's theory they are construed as passive reactors to the active influence that knowledge exerts on them, thus their dynamism is only an activity of adaptability. There is no elaboration by von Bertalanffy regarding the activity, supposedly mental, of acquiring knowledge. Knowledge, in his epistemological outline, appears as magically given. The question arises then of how knowledge comes to be in the first place, which would then allow for it to constitute the categories in the mental capacity, which would, in turn, enable the mental capacity to understand reality.

Although this is an inadequate epistemological theory, there is enough here to point toward a phenomenological influence which can, in turn, further develop the systems epistemology envisaged by von Bertalanffy. In particular, according to von Bertalanffy, knowledge arises due to reality and "categories of knowledge" conditioned by isomorphy. Similarly, according to phenomenology, knowledge arises due to phenomena rich in essences and consciousness' spontaneous intuition conditioned by isomorphy.

The following sections will draw on phenomenology in order to define von Bertalanffy's "reality" and the "order" which constitutes it, as well as to make the "categories of knowledge" active not only in an adaptive, reactive sense, but in a manipulative, purposeful sense. In doing so, what emerges is that this phenomenological input in no way abuses or obscures von Bertalanffy's original epistemological attempt. Instead, what begins to blossom is an adequate and apodictic systems epistemology, which highlights the systemicity between epistemology and ontology. More importantly, for the purposes here, what emerges is the explanation for the results of the earlier investigation into Ulrich's and Midgley's presentation of boundary judgments. The discussion begins with Husserl but soon reverts to Sartre, because it is through his elimination of an ego that phenomenology attains its full relevancy to von Bertalanffy and to Critical Systems Thinking.

4. HUSSERL

In presenting the phenomenological approach to knowledge some Husserlian basics such as the intentionality of consciousness will be addressed. von Bertalanffy's explicit concern with the ego also requires a brief exploration of some insights to be gained from the arguments surrounding Husserl's inclusion of an ego in consciousness—not as a content of consciousness, as is sometimes mistakenly assumed, but as the "abstract subject pole from which acts of consciousness emanate" (Mohanty, 1997: 42–43)—and his alleged idealism. These will then enable a more insightful understanding of the phenomenological epistemology

which will, in turn, result in informing von Bertalanffy's Systems epistemology in a nontrivial manner.

4.1. Consciousness of Phenomena

Husserlian consciousness is always consciousness *of* something (Husserl, 1990). This simple statement (repeated in all attempts to explain Husserl) and the particularities of what it says open the door to phenomenology but require clarification. The statement makes two references: one to consciousness and one to what appears to be an activity that consciousness undertakes. This is a somewhat misguided reading since it implies that consciousness itself is some object which undertakes an activity. Understood in this manner, a mediating middle must be allowed to exist, which enables consciousness to act. For example, as Mohanty (1997) argues, consciousness may require embodiment but as for whether it is embodiment itself which acts as the mediating element, thereby enabling consciousness to undertake its activity, one finds nothing by way of how this mediation operates; moreover, the epistemological significance of Husserl's conception of consciousness transcends embodiment to such an extent as to make embodiment a derivative contingent (as opposed to fundamental necessity) of consciousness—a view of consciousness shared by Shoemaker (1999) in his philosophy of identity conditions. A more precise conception of consciousness is as an activity whose quality is to intend. This provides still but a partial understanding of consciousness, which will be fully developed shortly.

As an always-already *activity* of intending, consciousness acts so as to "intend [a phenomenon] *standing over and against its activity*" (Sartre, 1998, p. 14). This allows for any phenomenon (including consciousness itself in the mode of reflection) to be given to it and consciousness itself in no way alters that phenomenon, it only enables that phenomenon to become available for investigation: it allows for intended phenomena to be described in their own right *qua* phenomena—"theory of knowledge need not be closeted with the activities of consciousness, but could go directly in reflection to the intended objects of consciousness and the principles governing *them*" (Sartre, 1998, p. 15). Thus knowledge is not about the certain mental syntheses, as in Kant or Mill; it is also not tinged with derivative perceptions stemming from particular approaches to phenomena, such as the scientific approach. Knowledge emerges as a pure correspondence to the character of, and relation between, phenomena themselves—the focus is always on *them*.

4.2. Husserl's Inclusion of an Ego

Husserl's (1998) positing of an ego as constitutive for the possibility of consciousness to enable knowledge makes the ego, along with phenomena and

consciousness, fundamental in enabling such knowledge. This seemingly does nothing less than reverse the initial claim of phenomenology to be able to investigate phenomena *in their own right*. Instead, it appears to render phenomena for consciousness dependent for their various characteristics upon the activity of the ego. In effect, consciousness is not completely aware of reality but, in contrast, of a combination of characteristics of both the ego and its phenomena. Knowledge loses its pure correspondence with phenomena and reverts to being some form of derived knowledge, in this case, derived from the ego's own activity of engaging with phenomena. Furthermore, the inclusion of an ego as fundamental to enabling knowledge dissolves the potential, which phenomenologically understood ego-less consciousness has for elucidating a systems epistemology as attempted in this research. More importantly for Critical Systems Thinking, Kirkpatrick and Williams (Sartre, 1998) point out—when describing the advantages of Sartre's correction to Husserl—that the inclusion of an ego also dissolves the potential for phenomenology to come alive as a viable theory when explaining and intervening in human affairs.

Since the inclusion of an ego reduces phenomenology from the study of phenomena in themselves to the study of the principles governing the activity of the ego (a reversion to Kant and Mill), Husserl has been hastily labeled an idealist by certain critics (Mingers, 1992). Husserl, however, was no idealist; just as he neither espoused psychologism nor historicism (views that explain Man by pointing to external causes), nor, for that matter, logicism (the attempt to access truth outside of contingent experience). It is Husserl's insistence on a *suspension*, and not a denial, of reality, which excludes him from any alignment to idealism—as Merleau-Ponty (1964) explains:

> By a truly radical reflection, which reveals the prejudices established in us by the external environment, [Husserl] attempts to transform this automatic conditioning into a conscious conditioning. But he never denies that it exists and that it is constantly at work. He notes [that] even philosophy descends into the flux of our experience and that it must itself flow on [*sich einströmen*]. Even the thought which pretends to ignore the temporal flux or to dominate it takes place in this flux and descends into it as soon as it is constituted. The philosopher, in so far as he is a philosopher, ought not to think like the external man, the psychophysical subject who is *in* time, *in* space, *in* society, as an object is in a container. From the mere fact that he desires not only to exist but to exist with an understanding of what he does, it follows that he must suspend the affirmations which are implied in the given facts of his life. But to suspend them is not to deny them and even less to deny the link which binds us to the physical, social, and cultural world. It is on the contrary to see this link, to become conscious of it. It is "the phenomenological reduction" alone which reveals this ceaseless and implicit affirmation, this "setting of the world" [*thèse du monde*] which is presupposed at every moment of our thought.

Taking the points in turn, Husserl's "conscious conditioning" reflects the awareness that consciousness now has of both its ego and phenomena (as men-

tioned earlier). The perennial immersion into the flux of experience, however, attaches importance to something real, in contrast to something ideal, as a source of knowledge. The ability to "*see*," first, the affirmations in the given facts of life and, second, the link to the sociophysicocultural world, stemming as this illumination does from the suspension and not the denial of the world—this "seeing" is none other than the theoretical thesis of reflection of the type witnessed in, for example, Critical Systems Thinking (Flood, 1999). Furthermore, the "link" referred to indeed signals the existence of what appears to be a Cartesian schism between thought and physical situation—the difference being that, as link, it prevents a passing beyond into a *singular* realm of pure logic or thought. The Husserlian suspension of all the spontaneous affirmations of the experienced world is not an act of denial toward them; it is undertaken in order to understand and make explicit these very affirmations.

What is offered above is that Husserl recognizes the importance of the "flux of experience" but wants to reconcile it with conscious awareness in such a way that neither is made the singular source of knowledge. What is obvious is that there appears to be no need for an ego in order to explain this systemically desired emergence of knowledge—neither a psychological personal ego nor an abstract yet individual ego. Having considered Husserl's inclusion of an ego, one can, therefore, note that, where it might appear that he steers toward idealism, the introduction of an ego is assumed useful only for the more important focus: systemicity in an approach to knowledge of the world. Where Husserl assumed its usefulness, the next sections will show that the ego is, as Sartre (1998) showed, indeed not required. The phenomenological approach to knowledge will thus be described in line with a Sartrean understanding. This means that Husserl's intentionality of consciousness remains; the conception of consciousness as activity of intending is emphasized; the role of Husserl's intuition of essences is explained in order to complete the currently partial understanding of consciousness; the need for a systemic emergence of knowledge is thus met, and, of course, the ego, as constitutive of consciousness, is disregarded throughout.

5. THE SARTREAN UNDERSTANDING OF THE HUSSERLIAN PHENOMENOLOGICAL APPROACH TO KNOWLEDGE

It should be borne in mind that Sartre (1998) did not radically alter Husserl's phenomenology. Instead, the conclusions stemming from his seemingly minor correction—that of making the ego only a construct of consciousness—radically increase the possibilities for phenomenology as a relevant theory applied to human affairs—possibilities which permeate the totality of Sartre's oeuvre. The discussion shall continue to refer to Husserl, although it should be clear that, when it does, it is because Sartre himself agreed with him on the issues where such reference is made.

5.1. The Intuition of Essences

In Husserlian phenomenology, knowledge requires two elements in order to arise at all. First knowledge requires contingencies external to consciousness: phenomena. These can be facts, ideas, fictions, sensate, empirical, observable, imagined—indeed anything to which consciousness can intend. Second, knowledge, by definition, requires of consciousness some ability without which there is no knowledge but a chaotic intending. This required ability will become evident shortly and will be shown as being in no way paradoxical to the activity of intending ascribed earlier to consciousness. Here, what is simply being put forward as required for knowledge are *phenomena* and *consciousness*, with no presuppositions of the strucutre and make-up of either (one may even suspend the notion of intentionality for the moment). Furthermore, any expectation of a causal determinism between them—which might be expected to lead to knowledge—must be suspended, for it might turn out to be a false expectation. Given the two requirements of consciousness and phenomena, phenomenologically it is desirable, as discussed above, that knowledge arises from them without being reducible to either of them—an obviously systemic notion of knowledge. The name given by Husserl (1990) to this systemically emergent knowledge is *intuition of essences*.

The term *intuition of essences* refers to the dual requirement of consciousness and phenomena, respectively. Beginning with phenomena, Husserl's conception of reality is the totality of phenomena available—so that the discussion may at this point stop employing the ambiguous term "reality," unless specifically referring to von Bertalanffy, and, instead, bring to bear the full exactness of the term "phenomenon." For Husserl, these phenomena each possess an essence, a manner of being which is fundamental and prior to any other derived knowledge arising from, and attributed to them by science, superstition, the humanities or any other approach. Essences form the perceived order in phenomena. Any knowledge of essences, therefore, would be nonderivative and thus deemed to be the only knowledge which would perfectly correspond to phenomena, a knowledge which would indisputably grasp the being of phenomena. The path to such perfect epistemological correspondence begins with one's intuition of an essence. Without this intuition, which Husserl called the *intuition of essences*, no knowledge, not even derived knowledge (i.e., subessenc-ial knowledge) can ever arise. Thus intuition is the epistemological *a priori* condition for the possibility of the emergence of knowledge. It is the spontaneous creation of some theory or other that forms interrelationships between phenomena enabling a primordial engagement with them, and from which primordial spontaneity knowledge may emerge.

Without such an intuition, it would be impossible to engage with phenomena since consciousness' intending would be chaotic and consequently under-

standing would be elusive. Intuition is implied in any area of thought and activity. Auguste Comte (1988, pp. 4–5) made this Husserlian observation, although mistakenly discounted it as belonging only to primitive Man:

> All competent thinkers agree with Bacon that there can be no real knowledge except that which rests upon observed facts. This fundamental maxim is evidently indisputable if it is applied, as it ought to be, to the mature state of our intelligence. But, if we consider the origin of our knowledge, it is no less certain that the primitive human mind could not and, indeed, ought not to have thought in that way. For if, on the one hand, every positive theory must necessarily be founded upon observations, it is, on the other hand, no less true that, in order to observe, our mind has need of some theory or other. If in contemplating phenomena we did not immediately connect them with some principles, not only would it be impossible for us to combine these isolated observations and, therefore, to derive any profit from them, but we should even be entirely incapable of remembering the facts, which would for the most part remain unnoted by us.

In effect, without intuition, survival would be impossible. Intuition is, therefore, a *continuous* activity of spontaneous creation and constitutes what was referred to at the beginning of this section as the ability required of consciousness without which knowledge is impossible. Similarly, it is also the activity without which critique "will inevitably fall into the trap of continual expansion and eventual loss of meaning" (Midgley, 1997b). It stands to reason, therefore, that, even before phenomenology, scientifically derived knowledge (such as natural science) preoccupied with observable facts operated with this *a priori* condition of intuition in each of its engagements—otherwise all such knowledge acquired by Man through the centuries prior to Husserlian phenomenology would be meaningless, clearly an incongruous assertion. Moreover, each of science's engagements were, and continue to be, undertaken within temporality. Intuitions, therefore, develop through time—if science relied on one intuition alone, its derived knowledge would never progress. Galileo, for example, when experimenting with falling bodies, had an intuition of the essence of the phenomenon "physical body," which developed prior to, during, and after experimentation. His experiments could never have arisen without this temporally developing intuition. Moreover, Galileo's developing intuition, from the start, imperfectly reflected the essence of the phenomenon "physical body." His intuition was, instead, isomorphic to the essence and, to use von Bertalanffy's words, had continually to justify itself by developing a higher degree of isomorphic accuracy with the essence thereby enabling both the experimental process and the continuing emergence of knowledge in time. Thus intuition makes no claims on the truth or falsity of knowledge but merely facilitates its coming to be—its emergence. Intuition merely enables orientation and engagement with phenomena set against a future horizon where its continuous justification theoretically attains knowledge in full correspondence with essences. The question arises: can

knowledge ever attain full correspondence with essences given the temporal flux within which it emerges?

5.2. Systemic Consciousness and von Bertalanffy's Epistemology

The Husserlian intentionality of consciousness, discussed earlier, is at one with the spontaneous intuiting of consciousness just described. Through intentionality, theory of knowledge is inextricably linked with the principles—the essences—governing phenomena. The knowledge of these principles, or essences, can only arise through the prior condition of intuiting, which consciousness must possess. This leads to a reconsideration of consciousness as well as what is meant by knowledge.

First, one notes that consciousness has an outward intentional direction while simultaneously creating spontaneous intuitions about phenomena. Intentionality must necessarily be accompanied by spontaneous intuiting, otherwise consciousness is nothing but a chaotic meaningless intending. Spontaneous intuiting must also be necessarily accompanied by intentionality, otherwise there is no directed phenomenon about which to intuit. Intentionality and intuiting are, therefore, two elements of consciousness, neither to which consciousness is reducible. Consciousness, it turns out, is a systemic activity of intending—intuiting directed at phenomena.

Second, the phenomenological theory of knowledge is the theory that explains how knowledge of essences may be acquired. Knowledge of these essences is deemed important, since any phenomenon to which consciousness intends is constituted by an essence. By attaining a knowledge of essences, knowledge emerges as a full (not simply isomorphic) correspondence with phenomena. In order to possess a knowledge, which fully corresponds to an essence, one must first have some intuition about the essence and the sufficient condition for this intuition is that it is isomorphical to the essence and not necessarily fully correspondent to it. The condition of isomorphy thus presupposes the essence similarly to von Bertalanffy's (1968, pp. 82–83) presupposition that for the possibility of isomorphs an order exists in reality itself. Seeing that von Bertalanffy imposed this condition on his "categories of experience," one can now suggest that these are the same as Husserlian intuitions. Note how fully intuitions, as described in the above phenomenological exposition, correspond to von Bertalanffy's description of "categories of experience": as the mental capacity of consciousness to recognize the world, the capacity required if the world is not to be viewed in a constantly chaotic, misleading manner. From this, one can further suggest that von Bertalanffy's undefined "order" of reality can now be defined as Husserlian essences. By equating von Bertalanffy's "reality" with "phenomena," one finds that, since essences form the order of phenomena, essences constitute the fundamental principles of phenomena. Therefore, when von Bertalanffy talks

of "reality" one can suggest that he conceives it in terms of the totality of phenomena; so that when he talks of the development of an applied "doctrine of principles," one can understand this as the development of an applied knowledge of essences.

5.2.1. On Isomorphy

A word on isomorphy is needed at this point. Isomorphy has been described as a condition for intuitions and for von Bertalanffy's "categories of experience." Indeed, it can only be understood as a condition and not as an activity that produces what could be called isomorphs. Intuitions are isomorphical conceptions only in the sense that intuitions are constituted by this condition and not in the sense that intuitions are themselves isomorphs. Intuitions can be compared to Comte's observation of the fundamental existence of some theory or other which enables engagement with phenomena, as noted earlier. An intuition must be, as Comte argues, constituted by a condition that enables the connecting of phenomena with some principles and thus combines isolated elements. This condition must enable the rearranging of the combinations that give rise to developing intuitions. That condition is isomorphy.

Given this, how is one to understand von Bertalanffy, since he occasionally appears to refer to isomorphs as products of consciousness and does not stress that isomorphy is only a condition applicable to something? For example, he notes that isomorphs are conceptual constructs, schematized pictures of reality, hence structural schemata of the structural uniformities of the different levels of reality (1968, pp. 83, 87). Although, at times, isomorphs appear to be defined as nouns and as products of consciousness, a contextual reading of von Bertalanffy's discussion of them makes clear that he is pointing to the isomorphy observable in different realms (1968, pp. 48–49)—that is, to the apparent similar structures or schemata between them. These similar structures are not isomorphs *per se*, but their similarity arises because of the condition of isomorphy. In other words, it is meaningless to attempt to point at these similar structures and claim them each as isomorphs: one does not say "here is an isomorph" but "here are two structures which are isomorphic," which exhibit the condition of isomorphy.

5.2.2. The Two Modes of Continuous Justification

The discussion has noted that, in time, the isomorphical intuition tends toward full correspondence with the essence of a phenomenon. When the complete correspondence is reached, knowledge of an essence arises. Being temporally bound, however, the intuition has—as von Bertalanffy notes when describing "categories of knowledge"—continually to justify itself. This continuous justification cannot be explained in terms of Husserl's phenomenology only. Consider that Mohanty (1997, p. 44)—in his explanation of Husserl—makes it clear that an intuition is closely linked to the positing of belief about the existence of a phenomenon. Now if this intuition is made and then becomes a past con-

scious act, "its effect is an abiding part of the reflecting ego—unless and until it is subsequently modified or cancelled." The belief of the certainty of the intuition remains but, as Sartre (1995) argued, unfortunately, due to Husserl's ego, there is no mechanism which can explain how this intuition can be subsequently modified or cancelled. The ego itself would require some mechanism behind it which would enable subsequent modifications or cancellations. Conceptualizing a mechanism in this way would lead to an infinite regress conceptualizing other enabling mechanisms and hence one is no nearer to explaining the continuous justification required. This problem of infinite regress stems from Husserl's attempt at explaining consciousness singularly from an ontological point of view. Sartre (1995, p. xxviii) was aware that the ontological status of consciousness can only be explained through epistemology and this is but one example of his implicit awareness of approaching the problem systemically: "to the necessity of ontologically establishing consciousness we would add a new necessity: that of establishing it epistemologically." This systemic awareness led Sartre to free consciousness from the ego (making the latter but a construct of the former) and make consciousness completely empty, radically construing it as sheer activity—an activity which thus enables the continuous justification of intuitions. This continuous justification must now be explained. In turn, this will enable a return to the creeping problem arising from the temporality that gives rise to justification: namely, the problem of whether knowledge of essences is attainable or whether knowledge invariably remains that of phenomena. Ultimately, Sartre's radical conception of consciousness as sheer activity will be revisited.

The continuous justification of intuitions comes in two forms. First, intuitions are continuously reinforced whenever they enable a harmonious engagement with phenomena. This reinforcement is most evident in intuitions of familiar physical objects with which human beings engage. Although one does not explicitly affirm these intuitions to oneself again and again, this reinforcement is nevertheless occurring. One recognizes it, for example, when one steps back from objects and realizes that one has taken them for granted. This "taking for granted" is the act of constant reinforcement of intuitions. Sartre (1995) showed, in his arguments on Bad Faith, how this reinforcement also feeds into conceptions of selves and he thereby provided arguments for the possibility of modification, cancellation or development of selves. Indeed, only egoless consciousness construed as constant activity can lead to the recognition of such realizable possibilities as always existing. Second, a lack in a current intuition to effectively enable orientation with a phenomenon calls for the development of a greater degree of isomorphic accuracy to the phenomenon's essence. This is most evident in intuitions of ideas, as in the idea of science (de Muralt, 1974), but also occurs when physical phenomena defy one's expectation of them. What von Bertalanffy calls justification is, therefore, more precisely, reinforcement or development. Knowledge of essences is possible only if this temporal flux of

required reinforcement and development is recognized. In theory, therefore, complete knowledge of essences is only possible at the end of time, for as long as this knowledge is bound within a temporal flux, knowledge can only emerge as reinforcement or development of intuitions.

5.2.3. The Phenomenological "Human World"

Thus, the Sartrean understanding of the phenomenological theory of knowledge, and thus von Bertalanffy's own epistemology, discards notions such as objective knowledge or eternal truths and further transcends the division between realism and idealism since there is, through the continuous justification of intuitions, a continuous engagement between consciousness and phenomena. Knowledge emerges within this engagement–"emerges within," and not "emerges from," for knowledge is forever umbilically tied into consciousness' intending-intuiting. Consciousness is an ontological epistemologic activity, not only because intending-intuiting makes possible the very emergence of knowledge, but also because intending-intuiting reinforces or develops it. Knowledge of the objective existence supposedly constituting a phenomenon is illusory on two counts: knowledge never fully corresponds to the essence of a phenomenon but only tends toward it isomorphically; objective knowledge of a phenomenon, if such knowledge exists, cannot be known due to the ever-tending-toward, thus making the whole notion of consciousness-independent objective knowledge at best speculative.

The centrality of consciousness and the illusion of the thesis of consciousness-independent objective knowledge are upheld when one further considers intuitions. The continuous positing of intuition by consciousness enabled, and continues to enable, Man to engage with phenomena. In this respect, an intuition is a correlate of an act of positing intuition (i.e., of intuiting) so that there can never be detached, self-existent intuition and thus there can never be objective knowledge independent of the systemicity of intending-intuiting. Mohanty (1997, pp. 1–13) notes that this correlation is, in fact, the inmost essence of consciousness stripped of naturalistic constructions such as embodiment. In explaining Husserlian phenomenology, he further argues (albeit by omitting to stress that the focus remains on explicating the emergence of knowledge) that since there can never be objective knowledge independent of the systemicity of intending-intuiting, consciousness "constitutes the world, confers sense on all things, not only provides access to the world, but is the very presenting of the world, making it evident, the source of its being and vitality," in short, "existence... is the predicate that derives from an act of positing," thus consciousness, as an activity of intending-intuiting, constitutes, lends existence to, the world. Sartre (1998, p. 106) similarly summed up consciousness as "quite simply a primary condition and absolute source of existence." Merleau-Ponty (1996, p. 344) made the same observation when noting that the world is not some logically detached totality,

which may be called into question, but is instead "the inexhaustible reservoir from which things are drawn" by consciousness in order for consciousness to lend them existence. Hence the grand, surreal-sounding claim of phenomenological philosophers that the world is a human world (Cooper, 1999) is actually the phenomenological explanation for knowledge.

It is due to this explanation for knowledge that von Bertalanffy, throughout his writings, rejected viewing Man as primarily a spectator. The rejection was posited due to epistemologic reasons: in other words, for von Bertalanffy, knowledge is impossible if Man is to be primarily a spectator. von Bertalanffy's rejection centers around the following view: "any organism, man included, is not a mere spectator. . . rather he is a reactor and actor in the drama" (1968, p. 239); man is not primarily a spectator, an *ens cogitans*, he is "essentially [and therefore primarily] a performer, an *ens agens* in the world he is thrown in" (1968, p. 240); 'the world-picture is determined by psychophysical organization [whereby] any stimulus is experienced not as it is but as the organism reacts to it" (1968, pp. 240–241). The stress here is always on the adverb "primarily"—not on an outright rejection of the spectatorial premise, but a rejection of its supposed primacy *in explaining how knowledge emerges*. In addition, there is an attribution of primacy to action (and reaction) so that activity is seen as fundamental, which, importantly, reflects the phenomenological view of consciousness as always-already activity. In this sense, von Bertalanffy does not hold that the spectatorial view is false or useless—what he rejects is, in Cooper's words (1999, p. 58), "its pretension to being fundamental and phenomenologically adequate" *epistemologically*.

Given von Bertalanffy's phenomenological epistemology, one cannot accommodate any possibility of attributing primacy to the spectatorial premise in a theory of knowledge. The primacy of the spectatorial view would only come as close as saying that consciousness is the activity that enables phenomena to be made manifest to it. From there, how does one make the conceptual leap to any knowledge or understanding at all? This is a dead-end street, for it cannot explain nor adequately discard the ontological necessity of consciousness' intuiting-intending. There is no pure and absolute spectatorial point of view. Of course, human beings are spectators of some world in some way, but therein lies the crux of the matter: of what world and in what way? Thus, any world of which human beings may be said to be spectators is fundamentally a world made systemically manifest through consciousness' intending-intuiting, making the world a human world.

5.2.4. von Bertalanffy's Relativism

One can now begin to see that von Bertalanffy's attempted epistemology mirrors that of Sartre's understanding of the Husserlian phenomenological approach to knowledge. Previously it was argued that von Bertalanffy's notion of "order in reality" mirrors that of Husserl. Sartre's correction to Husserl

also explained the condition of continuous justification which von Bertalanffy imposed on his "categories of knowledge." Consciousness has no need for an ego in order to provide a theory of knowledge—as indeed von Bertalanffy seemingly recognized by pointing to the "direct phenomenological experience." It need only be construed as a continuous activity of intending-intuiting. The only pertinent question remaining about this theory of knowledge stems from the recognition that the ever-present condition of isomorphy seems to block the final attainment of objective knowledge, i.e., the final attainment of knowledge of essences. The demise of the possibility of objective knowledge—thus of knowledge of essences as such—appears to give rise to extreme subjectivism when intending-intuiting phenomena. The objective/subjective divide is buried by von Bertalanffy when discussing relativism.

To begin with, von Bertalanffy is urgently aware, when discussing ethical deliberations of System Theory, that the "humanistic aspects [cannot] be evaded if general system theory is not limited to a restricted and fractional vision," and he has little time for those "mechanistically oriented system theorists [who give] rise to the fear that system theory is indeed the ultimate step towards mechanization and devaluation of man and towards technocratic society" (1968, p. xxiii). Given the development of von Bertalanffy's epistemology, one also notes that he does not adhere to the view that objective knowledge (i.e., knowledge of essences) is possible. He never explicitly proposes a Kierkegaardian argument (1992) that only subjective knowledge is possible. Neither does he reflect Checkland's (1981b, 1985) notion that objectivity is but a special case of subjectivity (that hard systems thinking is a special case of soft systems thinking)—a Kierkegaardian argument (Westphal, 1996, p. 51), as yet not attributed to Kierkegaard in the soft-systems literature. Instead, von Bertalanffy approaches the issue through the notion of relativism.

For von Bertalanffy, although relativism "has often been formulated to express the purely conventional and utilitarian character of knowledge [coupled] with the emotional background of its ultimate futility, [one can see] that such consequence is not implied... in view of the levels both of experience and of abstract thinking, of everyday life and of science" (1968, p. 239). von Bertalanffy is arguing that the notion of a supposed futility in relativism arises when relativism is taken to result in a deceptive view of reality (or, more accurately, phenomena). He is aware that to subscribe to this view—whereby deception is ascribed to relativism—is to already presuppose the existence of some yet-to-be-discovered absolute and available objective knowledge, which is possible to appropriate. von Bertalanffy, however, neither supposes nor argues for an available absolute objective knowledge. Objectivity, on the one hand, would imply (and assume) the existence of some, as yet undiscovered, available, absolute (static) objective knowledge which is possible to appropriate. Subjectivity, on the other, would imply a deceptive view of reality since *it would be assumed*

that an objective knowledge exists and is possible to appropriate. Such suppositions would revert to epistemological reductionism—a view which von Bertalanffy abhors (1968, p. xxii)—and would further suppose the mistaken ontological independence, referred to earlier, assumed in the Cartesian *cogito*.

The availability and possible appropriation of an absolute objective knowledge would further imply that, once it has been reached, no further intending-intuiting takes place and the activity of consciousness either stops or somehow alters. In stopping, one is led into the realm of speculation regarding the death of consciousness. As to its alteration, no theory exists to explain the manner of alteration unless the absolute objective knowledge is conceptualized as finally abiding in consciousness. This necessarily requires Husserl's ego and, due to this line of thinking, one reverts to the problem of infinite regress. How would the ego make sure that this knowledge is indeed the supposed objective knowledge, the supposed knowledge of an essence? One would require von Bertalanffy's insistence on the need for "categories of knowledge" to continually justify themselves. It has been shown that this insistence can only be made viable through a Sartrean rejection of the ego.

5.2.5. von Bertalanffy's Modest, Perspective Philosophy

One can only conclude that von Bertalanffy, in discarding the objective/subjective division, adheres to the more complex, systemic, and experientially viable thesis akin to a Sartrean understanding of Husserlian phenomenological epistemology. He pronounced this thesis to be a more modest epistemological view (1968, p. 247) and further labeled it as a "perspective" philosophy—and there is occasion here to revisit his understanding of this term.

The modesty arises through the recognition that knowledge never fully corresponds to essences but remains on the level of phenomena—knowledge is always-already, through intending-intuiting, knowledge of phenomena. In effect, von Bertalanffy attempts to present the argument that, whereas presystem approaches to knowledge posited full positivity to the supposedly attainable essence and contrasted that with the every-deceptive phenomenon, the systems epistemology ascribes full positivity to the phenomenon itself. The systems epistemology makes the phenomenon absolute. This ascription of absoluteness to the phenomenon—in contrast to the essence—makes the epistemology "more modest". Its "perspective" philosophy arises from making the phenomenon relative due to the intending-intuiting of consciousness, though avoiding the abyss of subjectivity, as argued earlier. Therefore, the systems approach of von Bertalanffy posits an epistemology of relative absolutes as the only attainable knowledge possible.

Sartre (1995, pp. xxi–xliii), in turn, insists that, given this epistemology and the question of what can be known, absoluteness is on the side of phenomena, which he refers to as "appearances." His use of the term "appearance" to connote

a phenomenon is undertaken for rhetorical effect, but is also philosophically correct. The rhetorical effect is such as to persuade the reader of the epistemology outlined in this paper where some supposed full positivity residing in a supposedly available essence is illusory. It is philosophically correct because, by definition, an essence is not an appearance—with all the deceptive undertones of one's understanding of appearances; an essence is, by definition, nondeceptive and is grasped in its completeness. Phenomena, on the other hand, are never grasped fully but only isomorphically so that they are always-already imperfectly grasped; that is, they are grasped as appearances. The Bertalanffyan "modesty" in Sartre arises through the recognition that since, given this epistemology, knowledge only tends toward greater degrees of isomorphy with essences, it remains knowledge of only phenomena and hence of only appearances. Sartre proposes the following argument (1995, p. xxii) which can be readily recognized now as presenting von Bertalanffy's "modest perspective philosophy":

> The appearance refers to the total series of appearances and not to a hidden reality which would drain to itself all the *being* of the existent. And the appearance for its part is not an inconsistent manifestation of this being. To the extent that men had believed in noumenal realities, they have presented appearance as a pure negative. It was "that which is not being", it had no other being than that of illusion and error. But even this being was borrowed, it was itself a pretence, and philosophers met with the greatest difficulty in maintaining cohesion and existence in the appearance so that it should not itself be reabsorbed in the depth of non-phenomenal being. But if we once get away from what Nietzsche called "the illusion of worlds-behind-the-scene," and if we no longer believe in the being-behind-the-appearance, then the appearance becomes full positivity; its essence is an "appearing" which is no longer opposed to being but on the contrary is the meausre of it. For the being of an existent is exactly what it *appears*. Thus we arrive at the idea of the *phenomenon* such as we can find, for example in the "phenomenology" of Husserl or of Heidegger—the phenomenon or the relative-absolute. Relative the phenomenon remains, for "to appear" supposes in essence somebody to whom to appear. But it does not have the double relativity of Kant's *Erscheinung*. It does not point over its shoulder to a true being which would be, for it, absolute. What it is, it is absolutely, for it reveals itself as it is. The phenomenon can be studied and described as such, for it is *absolutely indicative of itself*... The appearance does not hide the essence, it reveals it; it *is* the essence. The essence of an existent is no longer a property sunk in the cavity of this existent; it is the manifest law which presides over the succession of its appearances, it is the principle of the series. To the nominalism of Poincaré, defining a physical reality as the *sum* of its various manifestations, Duhem rightly opposed his own theory, which makes of the concept the *synthetic unity* of these manifestations. To be sure phenomenology is anything but a nominalism. But essence, as the principle of the series, is definitely only the concatenation of appearances; that is, itself an appearance. This explains how it is possible to have an intuition of essences. The phenomenal being manifests itself; it manifests its essence as well as its existence, and it is nothing but the well connected series of its manifestations.

Given Husserl's phenomenological epistemology, Sartre has purified it by

reinstating the phenomenological requirement for knowledge: it requires only consciousness and phenomena. Essences and the ego are discarded. von Bertalanffy's own epistemological understanding has been presented here as subscribing to this view.

There is only one warning which should be sounded now. The presentation has focused on explaining von Bertalanffy's systems epistemology. This epistemology does not reflect Sartre's (1995) own original development of phenomenology. Sartre's (1998) original thesis on the exclusion of the ego was required in order to explain von Bertalanffy's views but, although this was already an original contribution by Sartre, it was only the beginning of his development. What has been argued is that von Bertalanffy's view mirrors that of Sartre's own understanding of Husserlian phenomenology *before* Sartre went on to further develop this understanding. Sartre's further development—as argued in his all-important Introduction of *Being and Nothingness*—diverges crucially from Husserl and von Bertalanffy once the phenomenon-of-the-fact-that-something-is is compared to the fundamental reality which is responsible for the fact that a phenomenon is. This is not to detract from the important ontological aspects that will be highlighted as stemming from von Bertalanffy's epistemology in the next section.

A final word is in order regarding Sartre's radical attribution of *sheer activity* to consciousness and how this is also required of von Bertalanffy. Sartre liberates consciousness from the Husserlian ego and makes consciousness empty—not empty in the sense that it might be a vessel which can be filled, but radically empty: what Sartre calls a "nothingness." A nothingess is not an object among other objects—such as an empty vessel would be. The nothingess of consciousness reinforces its conceptualization as sheer activity. Not being an object among other objects also means that it is not liable to causal determinism. As the "lender of existence" to the world, everything passes through it and, moreover, nothing is invisible to it, and yet it is itself invisible to the world and permeates it completely. What is this activity, then, if it is not an activity with an incredible freedom! Simultaneous to its characteristic nothingness, however, this activity is an activity of intending-intuiting. This intending-intuiting is not incredibly nor chaotically free. Intending-intuiting is by definition a focusing, limiting factor on the freedom. How can this limiting factor be reconciled with the incredible freedom?

The operative word in the above paragraph is *incredible*. Consciousness as active nothingness cannot be conceptualized without attributing to it some activity. That activity has been seen to be that of intending-intuiting. Because of epistemologic reasons, that is, due to the necessity of explaining how knowledge arises, this intending-intuiting has been seen to be ontological. However, its ontological status cannot arise unless freedom is simultaneously recognized as constituting this intending-intuiting. Consider that if it is not so recognized, one reverts to the problem indicated when discussing von Bertalanffy's attempted

epistemology, namely, the inadequate and inapodictic repercussions arising if "categories of knowledge" constitute knowledge itself. [In passing, Brocklesby and Cummings (1996) seemed to have missed this crucial, subtle way that Sartre understood the importance of freedom and have mistakenly interpreted Sartre's focus on freedom by hastily labeling his philosophy as one where "anything goes".] Moreover, it is due to this particular argument for establishing the ontological status of consciousness for epistemologic reasons that one can also establish that ontologically Man is engaged with phenomena—for intending-intuiting is ultimately the fundamental activity of Man and one will recall that this was the only aspect from the Cartesian *cogito* that von Bertalanffy accepted.

6. INFORMING CRITICAL SYSTEMS THINKING

At the beginning of this paper, an analysis of Ulrich's and Midgley's presentation of boundary judgments highlighted that, according to them, knowledge is produced through the activity of bounding. Given the subsequent presentation in this paper, the activity of bounding can be equated to consciousness' activity of intending. By intending, it is understood that consciousness directs itself at a certain phenomenon, in other words bounds it, delineates a boundary around it, which necessarily posits or implies the exclusion of other phenomena.

The analysis earlier also showed that Ulrich and Midgley maintain that the importance of boundaries lies in their being epistemologically important. The paper has shown that any bounding activity can turn into an epistemological issue only once the simultaneous, systemically related activity of intuiting is recognized. Knowledge presupposes intending-intuiting and not merely intending. It was shown how without this intuiting, singular intending is but chaotic intending, allowing for no epistemological investigation. Intuitions, as the creation of some theory or other which will enable engagement with phenomena, are but the creation of some judgment which enables guidance in this engagement. Equating "intuiting" in this way with "judging," consciousness can be said to be an activity of bounding-judging. Therefore, it is bounding-judging and not just bounding that enables knowledge and epistemological investigations.

Does one draw the conclusion that Ulrich and Midgley have missed out the latter half of a systemic relationship which has been shown as required if epistemological issues are to ever arise? Should the "judgments" in "boundary judgments" not be addressed at the boundary so singularly but at a systemic activity of bounding-judging? Moreover, should critique be directed, not at the bounding activity, as Ulrich and Midgley maintain, but at the bounding-judging, which is the source of knowledge? Von Bertalanffy's insight can clarify the ambiguity of Ulrich's and Midgley's epistemological boundary and simultaneously highlight the exact place where critique is actioned. This first requires a summarizing of all the ontological aspects identified in this paper.

The ontological constitution of the activity of intending-intuiting/bounding-judging has been argued by exploring the phenomenological conception of consciousness. Two related aspects are ontological.

First, intuitions are constituted by the condition of isomorphy so that the judgments made upon the intended, bounded phenomena never fully reflect the richness of these phenomena. Through continuous justification, the intuitions tend toward greater isomorphic correspondence with phenomena. In other words, through continuous justification, the judgments made about phenomena tend toward a more accurate isomorphic understanding of phenomena. This tendency is made possible through the continuous justification enabled by Sartre's understanding and stressed by von Bertalanffy. From this one finds that the judgments in "bounding-judging" are ontologically isomorphic to the complexity of problem situations and may tend toward greater degrees of isomorphy with the complexity through continuous justification. Moreover, the same may be said of the judgments regarding the phenomenon of the boundary itself, as per Ulrich's original thesis where this phenomenon was highlighted by him as the problem in need of justification. Summarizing, the condition of isomorphy in intuitions/judgments is ontological; continuous justification is also ontological. However, what is not ontological is what form this continuous justification takes. In other words, neither reinforcement nor development of intuitions are ontological *in themselves*. What is ontological is the choice—the activity of choosing—*between them*.

Second, the epistemological stress has been on knowledge of phenomena, discarding essences to the realm of speculation. Thus, as von Bertalanffy insists (1968, p. 241), knowledge is fundamentally conceived as orientation, as an enabler for engagement with phenomena; it is never conceived as a static objective knowledge but as an active, ever-developing knowledge. This conception of knowledge led von Bertalanffy (1968, p. 248) to conclude that "the limitation as well as the dignity of human knowledge" does not lie in some yet-to-be-reached objectivity, but recedes with the progress of mankind; knowledge is an infinite limit, realizable asymptotically in the course of time. The finitude of the orienting knowledge lying within any point in this temporality is but a continuous reflection of the infinite limit. In effect, both, von Bertalanffy's epistemological conclusion and Ulrich's and Midgley's assertion that knowledge indeed never attains the status of "objective or right" knowledge, are Sartre's (1995, p. xxiii) recognition of the only remaining philosophical dualism in Husserlian phenomenology which makes any sense *in epistemology:* "the infinite in the finite." Phenomenological philosophers have tended to label this finite, orienting knowledge *meaning* in order to contrast it with the infinite limit, which can only be properly called *knowledge*. It is this finite, orienting knowledge, this *meaning*, which is inescapable in the phenomenological epistemology of von Bertalanffy. That is, consciousness cannot escape its own activity of

enabling orientation—of steering a course through the world (von Bertalanffy, 1968, p. 241). One can, therefore, conclude that "we are *condemned to meaning*" as Merleau-Ponty says (1996; p. xix), or, in the words of Cooper (1999, p. 47), "human being is inescapably *semantic*." One can also recognize that as inescapable, this nothingness, this activity of intending-intuiting, "haunts Being" and "lies coiled in the heart of Being like a worm" (Sartre, 1995, pp. 11, 21), so that von Bertalanffy quite rightly claims that even the supposed universal mathematical laws only exist through some meaning attributed through human engagement (1968, p. 237). [In passing, one can now note how strongly, both, Checkland's (1981a) stress on the importance of emergent systems of meaning, and, soft-systems thinking's exhibited infinite iterative explorations, are embedded in von Bertalanffy's attempted epistemology, and hence related to Sartre's understanding of Husserl. Also, given that Ulrich's belief that knowledge never attains the status of "objective and right" mirrors Sartre's understanding of Husserl, one realizes why Tsoukas (1992) argued that Ulrich's exploration of "boundary judgments" and "justification break-offs," which attempt to gain an understanding of what lies behind individuals' assumptions, is methodologically reducible to (what Tsoukas calls) the interpretivist systems paradigm].

In a word, the above paragraph argues that knowledge as orientation is ontological, in other words, meaning is ontological; the attainment of the infinite limit is only an ever receding possibility—thus objective knowledge is ontologically not attainable within temporality; but the infinite receding of objective knowledge is ontological. Given the temporal, the resulting ontological aspects in von Bertalanffy's attempted epistemology can be summarized in the outline given in Table 1.

Given this summary, one can now ask where exactly critique is applicable. The one ontological aspect, which is argued as the starting point, is consciousness' intending-intuiting, which leads to the remaining ontological aspects in the summary. The intuitions, which arise from this intending-intuiting, are liable to continuous justification. This continuous justification comes in two modes. Either mode is equally open to the ontological choice. More importantly, either mode can be exercised *critically or uncritically—and so it is here that critique is first posited as needed*. By directing critical questioning to judgments of boundaries and by attributing epistemological importance to boundaries, Ulrich and Midgley remained ambiguous as to where exactly critique is directed. Critique is not directed to Midgley's (1997a) "boundaries of knowledge" or to "boundaries of the involvement of subjects in generating that knowledge." Critique is addressed at either of the chosen modes of continuous justification. Only critique *actioned within either of these modes* prevents the crystallization of knowledge.

In order to highlight the importance of the need for critique, the usual arguments claim that if critique is not applied dogmatism or bounded rationality occur. Not having previously identified where exactly critique is applied, however, these

Table 1. Outline of Ontological Aspects

Ontological	Not ontological
Activities of intending–intuiting/ bounding and judging	
The condition of isomorphy in intuitions/judgments	
Continuous justification of intuitions/judgments	
Choice—the activity of choosing— between reinforcement or development of intuitions/judgments	Reinforcement/development of intuitions/judgments
Knowledge as orientation, i.e., meaning	Objective knowledge
The infinite receding of objective knowledge	
The unattainability of objective knowledge	

important arguments retained a certain ambiguity. In order to argue for critique more fully, one need only consider each modal choice of continuous justification when critique is not included. Although there is no scope in this paper to explicitly consider this, one can make an educated guess that the uncritical modal choices of continuous justification result in dogmatism or bounded rationality—either way, a fully developed argument for the crystallization of knowledge unfolds. However, that is not all that emerges from this consideration. For the question arises: if critique is not employed, then what is the role of consciousness in further intending-intuiting? It seems that there would be no need for further conscious activity, but, since this is ontologically impossible, it signals that critique itself might be ontological. There has not been an attempt thus far in the literature to attribute an ontological status to critique. Given the arguments thus far, however, there might well be a way of doing this. If an ontological status can be attributed to critique, it could enable Critical Systems Thinking to address the remaining question left by Ulrich, namely: "why should the involved bother to take account of the views and interests of those who are affected but not involved" (Jackson, 1985)?—or, in more general terms, why should anyone bother with critique? This is one undertaking that is suggested for future research.

Before moving to reconsider the status of von Bertalanffy's General System Theory in relation to Critical Systems Thinking, one more research point arises. As shown earlier, Ulrich's and Midgley's recognition that knowledge never attains the status of "objective or right" knowledge reflects Sartre's recognition of the only remaining epistemological dualism in Husserlian phenomenology, that of "the infinite in the finite." However, where Ulrich and Midgley have

stopped at Husserlian phenomenology, it was mentioned earlier that Sartre went on to develop this epistemological understanding and diverged crucially from Husserl. There is undoubtedly a need to research the Sartrean development in order to examine how it might inform and develop Ulrich's and Midgley's epistemological position. This will either justify fully the impossibility of "objective or right" knowledge, or it might just shed a new light on this important epistemological issue.

6.1. The Status of General System Theory in Critical Systems Thinking

In the Critical Systems Thinking literature, General System Theory has been either neglected or brushed aside as an empty theory. Prior to the *Groundwork*, only Flood and Robinson (1989) proposed any significant arguments for revisiting General System Theory and saving it from neglect. However, their call appears to have been drowned out by Ulrich (1983), who not only brushed it aside as an empty theory, but further laid certain accusations against it. This merits some comment here for two reasons.

First, although Flood and Robinson discussed the views of Boulding (1956), Caws (1967), Lilienfeld (1978), Ackoff (1963), and Naughton (1981), these authors' views stem from considering General System Theory singularly. Ulrich, however, purposefully pitted General System Theory against Critical Systems Thinking so that any attempt, such as the one here, at revisiting the former for the presumed benefit of the latter necessarily requires comment on Ulrich's views. Furthermore Ulrich, ever since the mid-1980s, has exerted a greater influence in Critical Systems Thinking than any of the other authors referred to by Flood and Robinson, so that it is arguably more important to review Ulrich's discussions compared to those of the others.

Second, the arguments in this paper have established certain ontological conclusions, which serve to clarify where critique is first posited as needed and, hence, serve to clarify the presentation of Ulrich's "boundary judgments." Given that this has been made possible by the very theory, which Ulrich has so boldly swept away, this in itself is enough to reconsider Ulrich's remarks on General System Theory.

Leaving aside Ulrich's unsupported and unexplained rhetoric that General System Theory is "neither general nor theoretical" (1983, p. 20), the project constituted thus far by the *Groundwork* and this paper demonstrates that his accusation of it being "mechanistic" (1983, p. 37) betrays a limited reading of the theory, which is especially surprising given Ulrich's obvious scholarly capabilities. Perhaps this limited reading is partly due to his having coupled General System Theory with "cybernetics, RAND-systems analysis, Operations Research/Management Science etc." (1983, p. 223 and throughout). Nevertheless, this limited understanding is further highlighted when Ulrich, drawing on

support from Habermas and Adorno, accuses General System Theory as having understood the systems concept "merely functionalistically, as referring to a set of variables to be controlled in a context of instrumental action" (1983, p. 223). The project here has endeavored to show that von Bertalanffy's instigation of General System Theory was not so naively thought out. Moreover, it is not clear from whose *interpretation* Ulrich (and supposedly Habermas and Adorno) draws, for it must be an interpretation, since von Bertalanffy himself clearly presented his own instigation as "free of this objection" (1968, p. 196)—as can be confirmed from the arguments presented here and in the *Groundwork*. In this respect, paraphrasing Ulrich (1983, p. 223)—and thus handing him back his own words—what appears to elude him is the uncritical character of his reduction of General System Theory's systems concept to a merely functionalist systems concept. However , where Ulrich is boldest, he is also dogmatic: he accuses General System Theory of "*[suffering] from [the] inability to deal critically with the very social reality which [it seeks] to improve*" (1983, p. 324, Ulrich's italics). If anything is clear about von Bertalanffy in his General System Theory, it is that he expresses a profoundly critical concern for social reality—one need only turn to his Preface, Introduction, Chapter 2, the latter part of Chapter 3, the second half of Chapter 4, and Chapters 8–10; in other words, the greater majority of his book. Because Ulrich did not spell out what he refers to as an ability to "deal" with social reality, that question is unfortunately unanswerable on his vague terms.

7. CONCLUSION

In revisiting von Bertalanffy, this paper has shown how he can inform the notion of "boundary judgments" in Critical Systems Thinking. Of equal importance, this opportunity gave rise to an explication of much of von Bertalanffy's philosophical deliberations, which appear to have gone unnoticed thus far in Critical Systems Thinking. The arguments showed how von Bertalanffy's deliberations can pose interesting questions for Critical Systems Thinking and, hence, the status of General System Theory has been discussed. Moreover, the prolonged discussion of a Sartrean understanding of Husserlian phenomenology has proved, again, to be of relevance to Critical Systems Thinking. Since Sartre's complete oeuvre is underpinned by the concern for emancipation—not only with the emancipation of human actors but also with methodological and theoretical emancipation (Cumming, 1965)—no doubt he will continue to inform Critical Systems Thinking. Previously (Georgiou, 1999) some similarities between the Habermasian position in Critical Systems Thinking and the philosophy of Sartre were argued. As the relevancy of Sartre's work continues to inform Critical Systems Thinking, there will undoubtedly be occasion to review Jackson's (1991) confinement of emancipatory systems thinking to adequately servicing *only* Habermas' human interests.

Two more points require consideration. First, although Midgley's (1992) presentation of "two needs" may appear to have been handled pedantically, the analysis did highlight the questions of whether, in contrast to the belief in Critical Systems Thinking, (a) the bounding activity might not *always* constitute systems or decision making and (b) whether there might be boundaries, which can be established within which critique *cannot* be conducted. The paper has shown that the activity of bounding is ontological, albeit having recognized that it is only one element of the fundamental activity fo bounding-judging, and hence, bounding does indeed always constitute systems and decision making. By highlighting the exact place where critique is first conducted, the paper has also shown that there exist *no* boundaries within which critique *cannot* be conducted; it simply *might* not, and further research into such an implication was outlined.

Finally, the status of General System Theory must also be reconsidered given that the phenomenological "human world" explanation for knowledge appears as actually being *repeated* in the systems literature through research in complexity theory. Flood (2000), in referring to Cilliers (1998), Coveney and Highfield (1995), and Waldrop (1992) explains that complexity theory offers a systemic logic that purports to explain why human understanding will forever be enveloped in mystery. Further, in presenting Reason's (1994) thesis, he says that a deep systemic view pictures each person as a flash of consciousness, in existence, and of existence; what a person is, is what everything else is; thus, a person looking out at the world is in a sense the world looking at itself. Moreover Reason, as Flood explains, observes that "phenomena as wholes never can be fully known for the very reason that we are part of them, leading us to acknowledge and respect the great mystery that envelops our knowing." What is this thesis but a reflection of the very argument in von Bertalanffy's phenomenological epistemology presented throughout this paper? In effect, complexity theory has but repeated von Bertalanffy's two principles of immersion and isomorphy. Reason seems to have also appropriated the phenomenological argument that consciousness lends existence to the world for, as Flood notes, Reason argues against the backdrop of Berry's (1988) arguments where "we bear the universe in our being as the universe bears us in its being" and where "the two have a total presence to each other and to that deeper mystery out of which the universe and our selves have emerged." Readers of Heidegger (1962) will be aware that this is a reflection of this philosopher's thesis—a relevant introduction in this respect is provided by Introna (1997). Even if one is intimidated by the voluminous aspect of Heidegger's work, one need only turn to von Bertalanffy, and as argued here, with a little help from Sartre, find it readily available. Given Flood's presentation, an interesting research question arises: where is the difference between complexity theory's contribution and that of von Bertalanffy's to the systems literature? Whatever the answer, the fact remains that a careful reading of von Bertalanffy indicates a critical richness in his thought, which has been neglected

thus far. In the spirit of Solomon (1998, p. v), one readily recognizes that there is a difference between philosophy proper and what may ultimately be only substitutes. The difference is fundamentally one of quality—the quality of the ideas and the thoroughness of understanding and explanation. Given that it is ideas that make the world go round, the choice is not whether one needs philosophy or not; the choice is whether one accepts what could turn out to be a substitute or whether one embraces the demands of the masterpieces. If critical thinking is about anything at all, it is about arguing for the recognition of the masterpieces.

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