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Critical Realism's Contribution to the Science of Mind

The purpose of this presentation is to discuss what critical realism can contribute to the cacophonous discussion around what the brain, consciousness, the self, etc. are and how they are related to one another. It is prompted by the fact that this is the thirtieth anniversary of this conference and that a quasi-survey of Lonergan's actual and potential contributions to this seemed to be in order. It also was prompted by the observation that many folks who claim that critical realism or generalized empirical method would help resolve various global and intercultural issues rarely indicate what is contributed to the discussion or debate by critical realism.

The discussion breaks out into three areas, metaphysics, intentionality analysis (which for me would incorporate an explanatory phenomenology) and method. I will take them in this order because it reflects the relative attention paid to each in the discussions. Models of the mind and brain, usually materialistic, take up the bulk of the discussion, followed by consciousness and lastly, and rarely, by method.

Metaphysics

For Lonergan explicit metaphysics is personal philosophical knowledge. It is the integration of philosophical, scientific and common sense knowledge. The

philosophical contribution is the understanding of the structure of knowledge which is isomorphic to that of knowing where potency corresponds to experience, form to understanding and act to judgment. The attainment of explicit metaphysics is a personal achievement that rounds out the “startling strange” realization that there are two different kinds of realism: “an incoherent realism, half animal and half human” and an “intelligent and reasonable realism”.¹(Insight, 22) It is a movement from an extroverted view of the real to an explanatory and reasonable one. The insinuation of the extroverted view into philosophical understanding yields the counter positions that are reversed via dialectic. Effective dialectic requires explicit metaphysics.

The attainment of explicit metaphysics confers “...a basic yet startling unity on the whole field of human inquiry and human opinion.” The field is understood via explanation. This is a fundamental difference from theories that claim that knowledge is descriptive, a claim rooted in an extroverted view of knowing where the thing in itself is modeled on the thing for us. Lonergan admonishes us to cut the umbilical cord to the imagination.² Imagination and description have roles to play, but they are transcended in explanatory understanding and knowledge. Intelligibility explicitly comes to the fore. The emergence of explicit metaphysics presents the challenge to the sciences of the mind to be consistent with it and ultimately to take it into account. The same challenge is presented by the self-appropriation of cognitional structure which is instrumental to explicit metaphysics. This challenge is both daunting and generally unrecognized.

The elements of metaphysics are central and conjugate potency, form and act. A thing is one by its central form. A thing is understood via an understanding of its conjugate forms. Understanding an organism requires an understanding of a

¹ Insight, p. 22

² Insight, p. 15

single scientifically differentiated object. By that I mean that understanding the organism demands understanding its physics, biochemistry, biology and, if it is an animal, its psychology.

There are no things within things. Thus Lonergan's understanding of organisms, including us, is holistic, complex and non-reductive. It is also non-partitive. By this I mean that the organism cannot be conceived on the analogy of a thing which has parts which are assembled to constitute the thing, as is a machine, for example. Rather understanding an organism takes a route where we start with a whole, discover differentiations within it and relate those to one another via an understanding of the processes they are. Lonergan uses the notion of dynamic system on the move to understand human consciousness and organisms, but considers the organism to be constituted by multiple systems of which the major ones are mutually self-mediating. The nervous system and the brain constitute one of these.

Consciousness, as enabled by the brain in some way, is embodied. Consciousness as embodied cannot be understood simply by understanding the brain, but needs to be understood in the context of the whole organism, its behavior, and habitat or environment (the "other" to which it relates). So in studying animals we need to add the study of animal behavior (ethology), ecology and evolution. For humans we need to add all the other human sciences in addition to psychology.

Understanding the organism moves from description to explanation. The move is from anatomy to physiology. In anatomy we study the structure and relationship between body parts. It is primarily descriptive. In physiology we study capacities for performance. In physiology we make the transition to explanation of the thing in itself by linking those capacities to the biochemically

and biophysically understood processes that enable them.³ In brain research the effort to correlate neural areas understood via anatomy with types of conscious activity, such as seeing, is an example of physiology. The transition to the understanding of the processes that enable them is exemplified by the work of Erich Kandel whose research teams discovered the biochemical processes underlying the development of new synapses as well as those strengthening current synapses on neurons that led to motor memory in snails.

So, bringing consciousness into the mix, if an explanatory phenomenological theory of how we learn skills will explain the conscious operations leading to skills becoming automatic or habitual, the understanding of neural processes will provide an understanding of what enables the learning and “fixes” the operations making them relatively automatic.

Language acquisition and use is a prime example. Though we learn to read or write, Lonergan notes that “...our speech and writing are basically automatisms, and our conscious control supervenes only to order, to select, to revise, or to reject. It follows that expression bears the signature not only of the controlling meaning but also of the underlying psychic flow...”⁴

In Insight, he distinguishes the intellectual, the psychic and the organic noting that “In man there is intellectual development supervening upon psychic and psychic supervening upon organic.”⁵ While the development of each can proceed with some independence of the others, in conscious action they are operationally integrated. Typical research and interpretation regards the relation of the organic and the psychic, as in the study of vision, and prescind from the intellectual which is inadequately understood. Understanding these distinctions

³ Insight, p. 389

⁴ Insight, P 615

⁵ Insight, p. 492

would assist is clearing up a lot of muddled thinking in the neuroscience and cognitive science communities.

Intentionality Analysis

Lonergan's intentionality analysis yielded his model of cognitional structure as a compound of experience, understanding and judging which will be our focus. We will prescind from his work on the good and belief in the interest of brevity and also because discussion of any one of these three would be sufficient to make my point. But the model of cognitional structure is the most germane. The model is explanatory. It takes itself into account since it is arrived at via its own self appropriation. It is the basis for a philosophy of philosophy which meets the need we discussed earlier for any theory of mind to take cognitional structure and metaphysics into account. It also provides an illustration of the tri-part division of the organic, psychic and intellectual.

Imagine a red pony. I say that and you can do that. Say that to someone who does not understand English and, though they may be able to imagine a red pony, they will not. Neither will my cat or a new born baby. Imagining a red pony in this case is something that is evoked by understanding meaning. In this case you understand what I mean because you previously had understood what red and pony mean. If I ask you to imagine a pfennig, unless you know pre-Euro German money, you are likely to ask, "What's that?" If I show you one, take it away and then ask you to imagine it you will be able to do so. You would have had a nominal understanding into the use of a word and some concomitant understanding of its referent. The whole interchange is possible because we have control of meaning.

But the interchange is enabled by the sensitive-imaginative psychic flow which occurs both spontaneously (i.e. I see when I open my eyes) and as evoked via conscious acts (“imagine a red pony”). The spontaneous flow develops both via nature and nurture. Skills, for example, are largely spontaneous, but they are learned. Development of the senses is largely spontaneous though it typically requires conscious participation. For the visual centers to fully develop one needs to see, for example, with different elements of the visual field (i.e. horizontal lines) developing at different times. There is also development at the neurological level which may not be conscious but which ultimately may need to be understood in terms of its enabling of conscious activity.

What we have here is an illustration of the psychic supervening on the neurological and cognition supervening on the psychic. The supervening is the conferring of an organization or integration of one on the other, enabled by the potency provided by the other. (I want to avoid using higher and lower integrations here since they both rely on a spatial metaphor and invoke hierarchy theory. Though there may be some hierarchical organizations in the organism, the organism is not organized hierarchically.) If we consider the state of the neurological some of the state can be understood by understanding the neurological alone, but other parts need to be understood in terms of the psychic organization. Likewise with the psychic. There remains a psychic aggregate, if we consider human consciousness, the organization of which can only be understood if we understand the pattern of conscious cognitional acts. If we had a fully explanatory understanding of all three there would still be a statistical residue which is the potency for further understanding and development. The mind is not fully systematic. This allows us to model consciousness as an operational situation.

Within this context there is the intelligent patterning of experience which needs to be understood on its own terms. As intelligent it is intelligible and that

intelligibility is not discovered by understanding the brain nor by understanding the psyche, but by understanding understanding. So though there are organic enablers of understanding, understanding cannot be understood completely merely by understanding them. The intelligibility which is the content of an act of understanding will never be found in a brain scan or via any other neurological methodology.

Let us return to the notion of physiology leading to an understanding of the thing in itself. The psyche is the mediation of neural processes for consciousness. The neural processes are not experienced directly but only mediately via the psyche. We do not experience neurons, but sights, sounds, images and feeling. Just as there is a distinction between temperature as felt and temperature as a relation in physical and chemical equations, so there is a distinction between an image and the neuronal relationships that enable it. So the psyche via the senses mediates between the thing in itself that is “out there” as well as the thing in itself that is “in here”. In both cases these “things in themselves” differ from the psyche. They have different forms. The role of the psyche in a sense is to provide data of consciousness which is both ourselves and the other for ourselves.

To put this in more technical terms, Lonergan distinguishes between experiential and pure conjugates. Both are relational. Experiential conjugates regard the relation of things to us either via sensing or experiential consciousness in general. Pure conjugates regard the relationships of things to one another. The distinction is fairly straightforward with regard to Galileo’s distinction of primary and secondary qualities where color as seen can be distinguished from the scientific explanation of color as specific wavelengths within the electromagnetic spectrum. Science was regarded as dealing with things in themselves as opposed to the subjectivity of things for us. It is less straightforward with the data of consciousness. Cognitive acts, for example, are experienced, since they are

conscious. But their intelligibility is found in their relations to one another in cognitional structure. As described we are dealing with experiential conjugates. As explained we are dealing with pure conjugates.

The intelligibility immanent in the immediate data of the psyche is explained in terms of the pure conjugates of neurobiology, the pure conjugates of psychic elements themselves, and the pure conjugates of intelligent, reasonable and responsible consciousness. Since the psyche includes the senses and the sensible, its immanent intelligibility also is explained via the pure conjugates of the sciences that regard the immanent intelligibility of the data of sense. So the psyche is not known solely by its being conscious, but needs to be explanatorily understood.

Method

There is the obvious full range of potential contributions of generalized empirical method and functional specialization which I am not going to discuss. What I want to focus on is what needs to be added explicitly to all sciences, which is dialectic. In short, there is a role for philosophy in all the sciences, but in the cognitive sciences it is most pressing. Dialectic considers opposing views in terms of positions and counter positions with positions being consistent with the fact that they are arrived at via cognitional structure. I will assume you are familiar with the details. But to get to the point where disputes can be cast in these terms Lonergan notes that “Before being operated on, the materials have to be assembled, completed, compared, reduced, classified, selected.”⁶ Again, I am not going to try to clarify these tasks in this venue. Instead, I want to make a relatively simple suggestion. That is, that the various views be categorized in terms of where they

⁶ Method, p. 249 - 250

put the various operations. For example, for a writer, is consciousness fully explained by neurology, the psyche, intelligent consciousness, or various combinations of these? Likewise, does understanding reside in the right side of the brain, the psychic unconscious or consciousness and so on. The classification would be done based on the positional view adumbrated here. It would be a step in the transformation of science that is part of the implementation of explicit metaphysics. But for it to be more than a transformation for me in my study of the field it needs to be part of the social scientific network which is a taller order. So we are faced with the fact that there is an elephant that is not in the room with knowledge that, if it were, some blatant nonsense would be eliminated.

That elephant is an explanatory account of consciousness in its own terms. Though a full explanatory account needs to take the sciences into account, a scientific account alone is inadequate, especially one that expects to explain consciousness in non-conscious terms for the explanans, in that case, effectively disappears and the account becomes unverifiable. The effect is the same as that reached by the naïve realist who misunderstands the cognitive role of images and sense experience itself. "...the intelligible cannot be imagined; and so the reality of each higher genus is emptied into the lower until one reaches the image of the lowest; and as the lowest is imagined as too small to be seen, one is left with unverifiable images of the lowest genus as one's extrascientific and pseudometaphysical account of reality."⁷ That explanatory account is the major contribution Lonergan has made to the science of mind.

⁷ Insight, p. 465