

## I - Explanation

Our goal is to develop a model that leads to the explanation of the fundamental relationships among mind, consciousness and organisms in general. Two key notions will come to the fore. The first is that of the operational situation. The model we will develop will explicitly incorporate the notion of the non-systematic into the understanding of wholes and structures. While this may seem counter intuitive or even contradictory to some, this just shows the extent that we have yet to understand the fundamental intelligibility of living things and consciousness in general. Both display a flexibility and “creativity” that we can model, but have yet to fully comprehend. In fact it will round out the notion of things, structures and wholes incorporating flexibility and emergence in a way a fully systematic or rule-driven account cannot. Post structuralist concerns will be incorporated into an explanatory framework. The incorporation of the non-systematic, or coincidental, by a whole also lends it a situational character. The fact that the coincidental operations of the organism are in some relation to what is not the organism constitute these relata as elements of the Umwelt or environment of the organism. The fact that these coincidental operations can remain coincidental or can be integrated in complex performances enables the organism to act within an environment that exists for it. As such, different types of organisms are engaged in different types of operational situations.

The second is the notion of the primacy of performance. Individual performance occurs within the context of operational situations. It’s “primacy” is that it is the key explanatory component in understanding individual, group and social behavior.

Behavior, in turn, is what organisms, as wholes, do. Teleological explanations previously received their force through the understanding of organic function being *for* organisms' performances. Teleological explanation has a much more limited scope these days, but we will be able to explain the apparent teleology of development through an explanatory notion of emergence in evolution and the related notion of evolutionary differentiation.

There also are sociological implications of the model. By analogy, institutions have their own "behaviors" though the structure can be quite different than that of organisms since it is based on meaning. Though not reducible to individual performances, institutional performance has individual performances as basic components. Other types of operations, automation and some legal procedures for example, comprise some of the others.

One of the issues with explaining consciousness is the paradox of intentionality. We are conscious. As such, things and events exist for us. As conscious, we can be related to them as they are in themselves. Yet how can this occur if our experience of them and our understanding of them is "ours"? Considered in these terms the issue is one of subjectivity versus objectivity. In Hegelian terms, the issue becomes one where the object (in the broad sense of what is intended) is for us as it is in itself. As intended, the object is for us. As intended in itself it is for us as it is in itself. So the issue becomes one of how it can be for us as it is in itself. We will provide part of the context for answering that question in this chapter and complete it in the next. We will need to address Kant's claim that the thing in itself is in principle unknowable because it is not observable.

To model the organism and mind, we need to go beyond consciousness because it is conditioned in some sense by the wider context in which it is situated. This raises a complementary issue. How can we explain consciousness as existing within a partially non-conscious context when the explanation itself may emerge from within a conscious context? This is the issue we will address here. The resolution is that you can have incommensurate explanatory frameworks or models that provide complementary contributions to the knowledge of a single object. The subsequent elaboration of the operational model of mind will provide an illustration of this.

In less technical terms, there is the situation in which I live my life. The situation for me is how I interpret what is going on, how I perform in relation to it and so on. It is the situation from my “viewpoint”. However, society is composed of multiple individuals within multiple personal situations. Understanding the relations of those situations to one another requires different types of relations than “what is important to me”. Yet “what is important to me” is an element that needs to be explained in both contexts. Since reality exists both in relation to us and in itself, it needs to be explained in both contexts and the relation of reality to us becomes part of the broader context of the relations constitutive of reality in itself. Transcending the paradox of intentionality allows us to explicitly break through the world, or reality, as ours, to ours as potentially the world or universe, from a nascent solipsism to a mature transcendentalism.

One of the issues with this type of discussion is that you often need to assume what it is you want to explain, but you need to do so without begging the question. For this reason there is a preliminary explanatory and objective context we need to outline before we get to the model that will enable us to explain it more fully. A central topic is

the notion of explanation. By understanding explanation from multiple angles, we can understand that science is explanatory, not descriptive, that a science of consciousness as conscious is just as valid as the natural sciences, that existential explanation is central to the human sciences, and that what can neither be imagined nor directly experienced is real, or, in the more general case, that intelligibility is just as intrinsic to reality as the world as experienced. Indeed, this is just another case of relating to the same common object in multiple, complementary ways, which will become a common theme of this effort. This is not relativism, rather it is “complementarianism”.

## Explanation

In this section we will consider explanations as formal, complex, cognitional, ontological, referential, structural, skillful and scientific. Later in this chapter we will elaborate on the existential qualities of explanation in considering existential explanation itself. Later in the book we will consider them as intelligible and meaningful. We also will provide a guideline for considering them as complete.

As formal, explanations consist of terms and relations where the relations fix the terms and the terms fix the relations. An explanation is an intelligible whole. The intelligibility of a relation consists of the relation of the terms to one another. In its barest form a relation can be signified as “ $X r Y$ ” where  $X$  and  $Y$  are the terms, or relata, and  $r$  is the relation. For example, in arithmetic, “ $1 + 2 = 3$ ” is relational since 1, 2 and 3 are related to one another via equality and the operation of addition. This simple equation is intelligible within the much larger context of other arithmetic operations. Thus, the

complementary operation of subtraction can be used with the same numbers to yield “ $3 - 2 = 1$ ”.

This formal account of explanations conceals a personal fact. Explanations are coherent for us. They comprise an intelligible set of relations that “hang together”.

It is tempting to think that a relation consists of both the distinction of the terms from one another and their relation to one another. While this is true in many cases it is not always true. For example, in the relation of identity,  $A$  actually does equal  $A$ . Formally that is less of an issue since we can fall into a “definitional nominalism”. In the real world we can have two “ $A$ ’s” which are the same, where  $A=A$  means  $A$  is the same as  $A$ . But  $A$  is not identical with  $A$  since they are not the same thing. Rather each  $A$  in relation to itself is one with itself which is reflected in the stronger logical relationship of identity. (Hegel does not recognize this so that identity becomes a complex set of internal relationships. Derrida does not either and he focuses on the distinction or difference, though he complicates it by including operations implicitly in the form of play.) While these are examples of relations within a complex set of possible relations, it is not clear how they are explanatory. We used this example to stress the nature of relations and their intelligibility. To provide an unambiguous example of an explanation we would need to turn to something more complex such as the structure of DNA. *Why* DNA self replicates is equivalent to showing *how* it self replicates via the relations among the four bases that constitute it and the biochemical operations that cause it to divide and match up its corresponding complementary bases in constituting its partner strand which reconstitutes the full molecule. Immanent in the explanation is an account of *what* DNA is. Explanations like this are complex because they are constituted

via many interrelated relations and relata. Also, just as we never have a single relation with no relations to anything else, explanations can be within multiple explanatory contexts.

Viewed within a cognitional context, explanation is a set of relations that is an answer to a “Why?” question. Derivatively, it is an answer to a “How?” or “What?” question. The answer to the question “Why is a circle round?” is found in its definition as a line in a single plane where each point on the line is equidistant from the center.” This also tells us what a circle is. We can use the answer to understand how to construct a circle. If we ask, “Why does the earth orbit the sun?” the explanation will tell us what the earth’s orbit is. “How” is typically asked of man made machines. Answering “How” an airplane flies includes answering why it works. The principles of the operation account for its working. As noted above, in less technical scientific questioning, we can ask “how” DNA works. The answer would tell us both what DNA is and why it functions.

The fact that the answers to why and what questions are intertwined, using the same set of relations, indicates that the reference of the explanation is immanent in it. There is a common notion of applying an explanation to a set of facts as if the facts were the referents of the explanation. Rather, *what* the facts are is provided in the explanation. The question of “applying” explanations is that of finding instances that can be explained, where the explanation will tell us *what* the instance is or why it exists. In addition, explanatory relations as factual can become elements in broader or higher order explanations. The nineteenth century philosopher of science William Whewell explained

this as the colligation of facts. A particular explanation utilizes some of a set of terms and relations.

As scientific explanations develop, the set of terms and relations become integrated in a complex model where the language is technical and the relations explicit. Models can be theories and be integrated within broader theories. Viewed historically, the incipient form of the model, or parts of it, may be recognized in both compact and tacit forms in prior thinking. For example, science sometimes can find its material initially in common sense and understands it later via scientific explanation.

We can understand this by considering first the difference between description and explanation and second by understanding the difference between explanation and verification. The simplest “viable” descriptive model would be of some type of nominalism where, for example, nouns relate to things or objects, verbs relate to actions or events and adjectives relate to sensible qualities, and we string these together in sentences to get some account of the situation. As a nominalism we understand what the words mean by grasping their use in referring to elements in our experience. Though we may not be able to define a chair, we can pick out varied instances of chairs (this is one interpretation of Kant’s notion of concepts). Description in this sense requires understanding and language. It relies on the understanding of language in expressing our understanding of the situation as experienced. For example, we can state “The red bird flew from the ground to the highest tree limb.” The description does not tell us why the bird flew, but it does, to some extent, tell us what happened. If we knew why the bird flew, we would know more of what happened, but the account would differ. Events and things would be related to one another. For example, the bird may have flown to the

ground because food was there and it was hungry and it may have flown to the tree limb because it heard something that made it apprehensive. In the first instance we may claim some type of link, connection or relation between hunger as motivating and perceiving food as “satisfier” to account for the behavior. In the latter, apprehensiveness or some form of fear is the motivator and “safety” in some sense is the satisfier.

The notion of description is ambiguous. Understanding it in terms of nominalism or other relations to language is inadequate since there is not a one to one correspondence between words and things and events. The shift in thinking from the early to the late Wittgenstein illustrates this, but prima facie reasons are the lack of correspondences in experience for terms such as ‘and’ and ‘of’ and the fact that the same things and events legitimately can be described differently. Descriptions also are general and the items described are particular. Thus, we know the bird is red, but we do not know what kind of red, and so on. If we were in the situation with the person doing the “describing”, what would really be occurring is that we would direct our attention to the bird, to its color and so on. In this instance language would have a use in having the describer and us have a common experience. In discussing the events later we would have recourse to our common experience as an aid to understanding each other. Without that, the “description” is much less adequate. Consider the difference, for example, of getting directions to someplace in terms of landmarks when you have never experienced any of the described items versus getting directions when you have experienced them. Descriptions work best in the commonly experienced situation. Outside that, their formality comes to the fore, a formality that typically is overlooked in the immediate situation which can be “experienced as described”. We will find a similar ambiguity and

implicit appeal to mutual or common self-reference in informal conversation which we will elaborate later in the third chapter.

To differentiate description and explanation in terms of questions may be clearer in some respects. For example a ‘what’ question can be answered with either a description or an explanation, but a ‘why’ question can only be answered by an explanation. But we are left with the possibility of a ‘what’ question being answered via a mixture of description and explanation so this distinction also is ambiguous.

We also could claim that description is of things and events as related to us either through our senses or imaginatively, while explanation is of things related to one another. Here we have the opposite ambiguity. With the notion of questions we had ‘what’ spanning both description and explanation. Here relating things to one another can include relating the “relations to us” to one another, so that experience can be both described and explained. We also have the problem that non-explanatory historical accounts regarding things and events that cannot be experienced or imagined could be confused with description, which seems to have occurred with some philosophers of science who conflate explanation of “theoretical entities” with their “description”.

From an explanatory context, it is more precise and fruitful to shift from the notions of experiencing and description to those of observation and data. In science observation is a skilled practice which yields data. The observed becomes data via interpretation. Minimally that interpretation is implicit in the methodological criteria for identifying and accepting data as data. In the physical sciences observations are associated with measurement and data and can be very technological. In the life and human sciences observation initially became systematized data via classificatory schemes

as in the beginnings of botany, for example, or in the categorization of animal behavior or neurotic symptoms. There is an anecdotal element in classifying behavior from which the key elements need to be abstracted. All this involves interpretation, and, in an established science, education and training. So in science there are no bare facts understood as some type of pure or pristine experience common to all and independent of some degree of interpretation or principle of selection. Likewise, when we describe in informal conversation we also abstract and interpret, but we typically tacitly assume the richness or fullness of the situation or context and consider our interpretations to be as we claim them; to be possible, probable, factual, etc without reflecting on what that means or understanding how we arrived at that point.

Since science appeals to data in both discovery and verification, data need to be common. This means that at some point there needs to be common experiential and common interpretive elements. It is easier to understand how there can be common interpretations in principle, since they come from common understandings. However, we do not see in common. My experience is separate and distinct from yours. For both of us to know that we have an experience in common, we need to have a common understanding. At this point, we must conclude that the common understanding is more important than the common experience since the common experience is of little immediate consequence in verification, for example, if we understand it differently.

We can push this point further to understand how a science of consciousness is possible. One of the common views is that a key characteristic of science is the ability to confirm another's results where the results are empirical and public, not private. In fact, in a sense, all experience is private. *What* is experienced may or may not be private. We

may see the same thing, but my seeing is mine as yours is yours. Likewise, my 'seen as seen' is mine just as yours is and just as my consciousness of pain and the pain are both mine. But if experience is private, then it makes no difference if it is of the "inner" or the "outer", the "public" or the "private". What makes natural science scientific is that the results are repeatable by others via a common method so that the knowledge community arrives at social confirmation. This does not mean that they all have to be present at the same time in the same place experiencing the same results. The key issue is what are we experiencing X 'as'. Science deals with intellectually patterned experience. There is not some pristine, pure experience that we can appeal to for verification. Rather, verification is of understanding and the verificatory instances are both understood and empirical. So it is arriving at a common understanding and verification using common, repeatable methods that is key. It is understanding and expression that make the results public and social, not the experience. Thus, there is nothing in principle about experiencing consciousness that precludes the development of a science of consciousness as experienced as a natural and a human science. We will elaborate this point further in the next chapter. Likewise, we can understand our distinction of observation and data in these terms. Observation is "private", or better, personal. Data is potentially public via interpretation. I cannot provide you with my observations, but I can provide you with my data which you can validate in various ways, one of which is to have a similar experience or to observe similarly.

## Common Sense and Science

One may complain that to distinguish between observations and data in this way is “just semantics”. In a sense they are right. In informal conversation the two terms can be used interchangeably. However, science yields systematic explanations and if we are to attain progress in developing a model of mind and behavior compatible with the natural and human sciences, we need to be systematic ourselves. This leads us into the difference between science and common sense as such.

By common sense as such, or the simplest case, I mean common social knowledge attained spontaneously by a community. In science there are two types of common sense. There is the common sense of the scientific community in understanding how to get along and so on. This is akin to the more prevalent common sense as such with the difference that it is within a profession requiring specialized training and is limited in attainment to some extent by that training. There is another sense where common sense mediates between the general relation and the particular instance. As we will explain in more detail later, the particular instance can diverge nonsystematically from predictions or expectations based on the general relations or model. Applying the model can become a matter of common sense in the sense of nonsystematic understanding and knowledge of how to apply the model. Typically in looking for someone “with experience”, we are seeking a person who has been through this a few times successfully. This is most evident in business or professions which are “practices”. There is a common sense associated with each that relates to making their “principles” or techniques work.

This is a key part of what Phenomenologists refer to as the life world. There is a life world associated with each type of specialization, organization and so on which can be understood in terms of the common sense of each.

I am introducing these distinctions because failure to fully differentiate between the life worlds of common sense as such and the sciences leads to a number of issues when trying to understand either of them explanatorily. Just as one cannot raise a child simply by relying on established scientific results, we would be silly to ignore the contributions of science to our parenting in terms of medical and psychological knowledge. But there are different kinds of knowledge involved and to confuse them in a systematic explanatory account is counter productive. Likewise, to consider science as just “common sense” has its own dangers.

Common sense as such can be explanatory, but the explanations usually are not systematic, consistent among themselves or complete, nor is there an explicit set of common goals held by the social group of knowers to meet any of those criteria. On the other hand, the sciences aim for all of those using methods for socially verifying results. So if one applies the implicit “criteria” of common sense to an analysis of science, they will miss the mark. Likewise, if we evaluate common sense explanations and knowledge in terms of scientific criteria we will misunderstand its effectiveness and scope. Typically common sense is more pragmatic, oriented to getting something done. A fundamental criterion is that X works. If you want to call an X a Y and it still works, then have at it. In science, if you are seeking a fully explanatory context, differences in terminology can imply differences in the known and any pragmatic criterion of truth and

conclusions reached via its use need to be critically assessed within a fuller systematic context.

An illustration of this is the dilemma business consultants often face. Business uses theory all the time, but it presents a fairly permanent problem which can be termed “The Consultant’s Dilemma”. Ideally, consultants are very bright, motivated people proposing or driving major organizational change or implementation of major programs. If experienced, they have knowledge of multiple companies and how these proposals were implemented successfully by them. Often they are marketed as requiring paradigm shifts, and sometimes they do. New methods are proposed, new terminology is introduced to account for the new relationships among the new processes and transformed current processes that will be implemented. Training is required to learn the methods, the terminology, the benefits and the compelling story that will be used to help generate buy-in from the uninitiated. There is a new way of understanding and transforming processes, be it channel management, quality control or the end to end servicing terminating in a strategically differentiated customer experience.

A good business paradigm is theoretical. It includes a coherent view of organizational issues, a consistent model of what the organization should be like and a method for transforming the corporation from where it is to where it ought to be.

Business uses theory instrumentally, to get something done. Thus, if two theories contradict each other in the theoretical realm, but you can use bits of each to your advantage, the contradiction probably is not an issue for common sense as such. Because common sense is not systematic in the strict sense of using terms univocally and consistently to explain how to do something or why it is done, it is difficult to take any

systematic paradigm and apply it in a business. There is the sane distrust of any general solution given the situational nature of business and Murphy's Law. But there is also the difficulty of developing a different way of thinking. If you are not dealing with a group that is proficient both in common sense and in theory and can distinguish between the two, then the following dilemma arises. If you know the theory, but do not know the difference between common sense and theory you may try to apply the theory as a common sense solution and the theory breaks down because, as general, it will not work the same way in every situation. On the other hand, if you try to be theoretical in communicating to common sense people, the theory will not be accepted as practical. It also will not be fully understood. The solution is to target communications and to assign responsibilities in the deployment of a new program based on the type of intelligence people have. Just as you would not expect an accountant to be a proficient lathe operator without considerable experience, so you should not expect non-theoretical individuals to quickly understand Total Quality Management or Six Sigma. In fact, you should accept the more likely possibility that they may never fully understand them. All is not lost though. People do not fully understand medicine but they accept it in most cases because it is perceived as effective. Likewise, a fundamental goal in implementing any program is to have people accept it and cooperate in the deployment. This issue of change management always faces the issue of applying the theoretical in the concrete situation and the added issue of doing so with some people who are not theoretical in their approach.

The resolution is some form of recognition of each group's complementary contribution to a common goal and mutual trust. This leads to an acceptance that each

group's knowledge and practice contributes to the common good though we do not fully understand how or why is required.

Another distinction in knowing became explicit in the twentieth century. This is the difference between explicit and implicit knowledge. The difference applies across multiple types of knowledge, but it is most evident in skills, which we will discuss in more detail in the fourth chapter. For example, if one is playing the piano and begins to think about or reflect explicitly on what he or she is doing, their performance suffers. The same is true to varying degrees in all sports and any skill that requires some virtuoso contribution. This is akin to Heidegger's distinction between the ready to hand and the present to hand. An object that is ready to hand, such as a tool, has its meaning in its use, which is not fully articulated. The present to hand is for us explicitly. It is the object for science, for example. To know something explicitly that is inherently implicit, such as a skill, is to change our mode of being with respect to it. Though the two kinds of knowledge are incompatible performatively (that is, they cannot be done as well at the same time as they can be done separately) they can be complementary in yielding explanations and in enhancing performance. Playing the piano and studying music theory are not the same but doing both enriches each. We will see that the implicit and the preconceptual constitute most of our conscious spontaneity. But to understand why that is, we need to be explanatory, or explicit.

We have distinguished common sense from systematic knowing or "theory". Science is systematic in its method and the explanatory expression of its results. It entails its own common sense specific to the field. The scientist herself lives both in the world of common sense as such and the world of her scientific specialty. In both cases implicit

and explicit knowing are operative. So we can know the same thing, event or performance in different ways. They may not be compatible in their performance, but they may be complementary in their results. On the other hand, they also can be incompatible and in conflict. Our goal is to understand how different natural and human sciences can understand mind in different, yet complementary ways. We will develop a model that anticipates this integration both on the side of knowing and the known.

With the development of phenomenology and intentionality analysis the situatedness of the knower came to the fore. This raises a number of issues. The most common characterization of the issue we are considering is that scientific explanation aimed at a “god’s eye view” of the universe while in fact it is itself the view of situated knowers. In the extreme we end up with a universe without consciousness. The correlative problem for phenomenology is how do we know a world independent of us if it is for us as intended. In other words, how is it possible to know what does not rely on a knower for existence so we can claim that the universe existed prior to the emergence of consciousness. To tackle these issues we need to lay out the model of the thing for us and the thing in itself and relate it to knowing and observations. In the next chapter we will tackle the paradox of intentionality which is, fundamentally, the issue of the possibility of self transcendence.

### The Observable and the Unobservable

Given that observations are interpreted in some sense, that is, that they are observations of “something”, distinguishing the observable from the unobservable

becomes problematic, for how would we know that something was unobservable if we could not “observe” it in some way? Earlier we indicated that observations yield data. We can resolve this issue by relating observation to what we experience immediately to data which can be related to what we do not experience. Thus, I experience the movement of the needle on a seismograph which I interpret as data indicating that there is an earthquake, though I do not observe the earthquake in the sense of experiencing it via any of its effects other than the movement of the needle.

Now the earthquake is not unobservable. I could actually be on the scene. In the instance where one is miles away reading a seismograph, it simply is not observed. But there are things and events which are unobservable in that we are related to them only through our understanding of data, which, as observed, is a mediated manifestation or effect of the thing or event. Atoms, for example, are too small to be seen with the naked eye, but we do have various pictures of them. An atom is an example of a known unobservable. We also can postulate reasonably a set of unknown unobservables which will eventually become known through their relations to current or future observables or unobservables.

The understanding of unobservables in science has been intermixed with philosophical theories regarding the thing-in-itself. Sorting these out in terms of the relations of things to us and the relations of things to themselves in an explanatory context will allow us to understand the complementary contexts of the sciences and lay the ground for understanding the operational situation in general and the role of consciousness and conscious operations in particular. The notion of the thing in itself stems from Galileo’s distinction between primary and secondary qualities. Primary

qualities are qualities unambiguously possessed by the object understood in terms that exclude the subject. Secondary qualities are qualities of the object that we experience. Thus, our experience is in a sense a combination of what is provided by the object and what is provided via our capabilities for sensing. As we will discuss further below, sensing is both selective and constitutive and as such does not provide experience of the full object nor as it is in-itself. In addition, as Husserl discovered, the structure of perception itself involves perspectives which precludes the presentation of the whole object at any one time.

There are two senses in which we can consider things in relation to us. The first is via sensing as noted above. The second is within a cognitive framework where we understand things in relation to us. Implicitly, and to a lesser extent explicitly, we are the focal point of reference. For example, things can be to my left or my right, high or low. The sun traces a daily arc across the sky as the apparent sphere of stars does at night. Objects come at me quickly or slowly. There is a relative individual element operative also. What is quick for me may not be quick for you. What is a lot for me, may not be a lot for you, and so on.

So far our examples have been of things and relations where we could get to common agreement via observation, ‘measurement’ and some agreement on the definition of terms. So, for example, we could define being ‘high’ as anything over anyone’s head. It gets more complicated when metaphors are introduced.

Metaphors provide the most common context for common sense understanding of feelings. For example, feelings are strong or weak, heavy or light, deep or superficial, cold or hot, cool or warm. Irrespective of whether feelings are experienced by us as they

are in themselves or only as they appear to us, in this example we implicitly understand feelings in terms of our experience of them mediated via metaphor. In this case we have the dual imprecision of the individual relativity of the usage of the terms and what the terms themselves mean.

We have distinguished two general meanings of the relation of things to us. The first is the mediation of the thing in itself via sensing. The second is the mediation of our experience via our understanding of it. This can be as varied as the possibilities for understanding. To focus on the issue at hand, we developed two notions. The first is a fairly straightforward verifiable account of things related to me as a focal point, though the account can be non-systematic. The second is more difficult to verify since it introduces the imprecision of metaphor. For example, there is no doubt that people have strong feelings, but what that means is more difficult to determine.

The development of the notion of primary qualities was an attempt to bypass the relativity of sensing. But since the qualities, as primary, could not be sensed, how were they determined? They were understood via mathematics. Numbers in some sense are experienced since there are numbers of things. In this sense they typically are understood as qualities. However, numbers per se are not experienced since they are formal. We will discuss this in more detail in the third chapter. Characterizing data via numbers is an attempt to transcend the individual, situated participation of the observer. Now it is true that data as resulting from observation can differ depending on the observer. There can be some subjective variation. This is overcome via the use of instruments. Because science deals with unobservables (though, of course, not exclusively), the rise of science has been matched by technological developments which have enabled discovery and

verification. The development of scientific theory includes understanding the methodological role of instruments, a role which is related to the intelligibility of what is being studied. The understanding explains why the “observed” is “data”. In some cases “observation” is reduced to simply reading the instrument or reports it produces.

Mathematics is the means for understanding the relationships among the things and events to which the data relates. Since the data is quantified and the understanding is mathematical, we rely on our imagination in understanding the data only for performing the required mathematical operations. Thus, the thing-in-itself in these instances is unimaginable. It cannot be described unless one thinks that attaching a number to something describes it. Rather it is explained via mathematical relations.

But now the issue recurs in another context. We are trying to get to an understanding of the thing in itself as it exists independently of us. Have we just transposed the issue of the relation of the thing to us via sensing to the relation of the thing to us via understanding?

The answer is both “yes” and “no”. Yes, we still have a relationship to the thing via understanding, but unlike the relationship via sensing, this relationship does not relativise the object. What does this mean? It means that our understanding is not into our relating to the thing, which in this case would be an understanding of understanding. Rather it is an understanding of the thing and its relations via an understanding of the data. The issue now is whether our understanding is correct. Is the thing the way we understand it to be? The understanding we have of it regards it and its relations independently of our relations to it. It is for this reason above that I mentioned that the formal cause can be considered referential, since understanding the formal cause tells us

to what we are referring. However, it does not tell us if it exists. So it is referential, but does not determine if there is an actual referent.<sup>1</sup> This possibility of understanding is what makes it possible for us to know things that existed prior to our existence, since they can be understood as existing independently of our existence. The philosophical issue is that idealists do not clearly distinguish the conditions for knowing X with the conditions for X existing. The conditions for knowing X are the conditions for X existing for us, not for X existing in itself.

It is precisely because the thing in itself is not always coincidental with the thing for us that we need to have explanatory models where we can drop out of the equation on occasion; else we are idealists, at least implicitly. In contrast to the existential standpoint, this also means that our horizon is not being-in-the-world, but the universe of being. Thus, we should not rework Kant's transcendental aesthetic into a temporality which is in some sense the ground of objectivity and our full horizon.<sup>2</sup>

There are three options regarding the relations of the thing in itself to observation. The first is that the thing in itself is not observable. In this case we can have data regarding it, but we do not have any "direct" experience of it. The second case is where we can observe things in themselves, but we know they exist independently of our observing in particular and our experience in general. We can understand them independently of their relations to us or to any consciousness. In the third case, the thing in itself does not exist independently of experience, because it is experience in some

---

<sup>1</sup> Given Frege's distinction between sense and reference, we would say both are referential. For Frege reference is more existential, but I would claim this is because he equated reference with judgment. In his logic he was dealing with judgments.

<sup>2</sup> If time is not our horizon or a limitation of it, then Vogel's critique of Husserl's notion of time as the form of consciousness is valid. We can know the non-temporal, or eternal. Thus, the transcendent sphere of being is open to us.

sense. The third case applies to consciousness. Yet there can be mental unobservables (the unconscious) for which conscious experience provides data. The question of the degree of the autonomy of consciousness turns on whether this is the case for all of consciousness and conscious operations and contents or only some. When we turn to the knowledge of consciousness, the situation changes. Rather than increasingly prescind from data to explain it in terms of theoretical entities, we develop an increasingly concrete understanding of it.

This now permits us to understand the distinction between the thing for us and the thing in itself. In general the thing for us is the thing as experienced and the thing in itself is the thing as explained. As explained, the thing may not be experienced or even experienceable. It may be known only via the experience of its effects. Where the thing in itself exists independently of consciousness it may be experienced but only can be explained by prescind from experience. This is the basis of the methodological distinction between primary and secondary qualities. In the third case the thing in itself and the thing for us are the same. In this case, the observations and data would be explained by relating them to one another. If this explanation is adequate, then there is no need to suppose a non-experienced operation or entity to explain the effects. Indeed, parsimony dictates that we do not. They can be explained in terms of conscious operations and their correlates.

Sensitively, we experience things in themselves, but we do not experience them as they are in themselves, that is, independently of our sensitive experience. Our sensitive experience has biological and psychical structural components and a history (i.e. learning and memory) which can alter it. If we think that natural science can only have

knowledge of what is sensitively experienced, then it is clear that we cannot have knowledge of a thing in itself since we cannot experience it as such. However, if understanding transcends the sensitive and imaginal in understanding relations, and if the set of relations does not involve knowing as a condition for their existence, then the thing in itself can be understood. In the next chapter we will understand how the verification of facts does not come from finding some sensitive or imaginal correlate of the relation as understood. That correlate is intelligible. Verification comes from scientific judgments that the evidence for the existence of the relations exists or where the conditions for the judgment have been met. What that evidence is, what the conditions are, is set by the theory.

It is important to note that the mathematical explanation is not the whole of the story. It is possible for us to understand the relations of things to one another within our sensitively conditioned experience. But there are some things, such as the unobservables, which cannot be understood in this way. Nor can they be described. They are *for us* as they are in themselves (in so much as they can be) via the mediation of meaning and understanding. Their particularity is known not by experiencing them, but by observations which yield data that relates to them. So their existence as particular is first postulated and only arrived at later via judgment. With things we experience, we can know them as individual before we understand what they are. There is a sense in which Kant is correct. We need an empirical intuition to posit the thing in itself. We just do not need one of the thing in itself. We will discuss this further in the next chapter.

At this point, though, I only want to reiterate the three possibilities regarding the relations of the thing in itself to observation. The first case is where we can observe

things in themselves, but we know they exist independently of our observing in particular and our experience in general. We can understand some of them independently of their relations to us or to any consciousness. In the second case, the thing in itself does not exist independently of observation, because it is observation in some sense. This is the immanence of consciousness. The third is that the thing in itself is not observable. In this case we can have data regarding it, but we do not have any “direct” experience of it

How do we deal with the two other types of “imprecision” within an explanatory, or scientific, context? There are two issues in the first case of understanding the relations of things to us via reference to us as a focal point. The first we have alluded to in getting a consistently defined terminology and expressing the relations in its terms. The second refers to the self-referential viewpoint itself. Much of what is expressed in that viewpoint can be transposed into an equivalent, non-self relative view. For example, the Copernican view that the earth revolves around the sun is compatible with the sun appearing as if it traverses the sky. Likewise, we can construct a spatial-temporal reference frame that eliminates the need to use terms such as “left”, “right” and “now”. But not all of it can be transposed. When we consider the situated consciousness, additional issues arise, which we will discuss shortly.

The second case of imprecision in the use of metaphor to understand feelings, for example, is more problematic. The solution is to transpose the discussion into language that does not use metaphor. The language would be based on sets of explanatory relations which account for systematically specified observations. However, in the case of feelings that solution does not exist. There are theories of emotion and feeling, but there is no paradigm accepted by the psychological community. Likewise, there is no

other common language for common sense and, based on our understanding of common sense, common sense alone is not likely to come up with one. Part of the problem regards the complexity of conscious operations and the general and mercurial role feelings and emotions play. We need to defer further discussion of this until we have a sufficiently complex model of human performance to properly address the issue.

In general, the solution for the viewpoints where the individual is the focal point is to move to an explanatory viewpoint that transposes relations of things to us into relations of things to one another. This works to a large extent with things that are not us or not like us. But it raises issues with understanding consciousness. Since consciousness is usually acknowledged to have some immediate relation to itself, a type of self identity that cannot be explained without recourse to consciousness itself, it seems it must be explained in terms of its relation to itself.

As conscious, our relation to ourselves is immanent in our relations to the other. But in Hegelian terms, we are not necessarily for our selves as we are in ourselves. Since we immanently are for ourselves as conscious, how do we become for ourselves as we are in ourselves? We do so via self knowledge. Husserl developed phenomenology to provide a scientific method for doing so. Phenomenology claims it is descriptive and to some extent it is. However, as we shall see in the next chapter, its real heuristic value is explanatory.

If an explanatory model of consciousness is what is needed there remains the issue of how to relate that model to the larger explanatory context of the “relation of things to one another”. In one sense we are things and economics, sociology, psychology and so on relate us to one another and other things in the universe. In another sense, we

are in a world for us, that is partly private, partly shared, wholly personal, yet meaningful, real and somehow transcendent. How do we take that relationship, which I will term consciously-centric, and situate it within the larger explanatory context without “losing it”, or explaining it away. This is one issue this project is meant to resolve.

Historically this issue arose as the human sciences began to differentiate themselves from philosophy. This involved understanding their domain and the methodology that would be appropriate for understanding it. The distinction between “erklarung” and “verstehen” made in the nineteenth century and used as a basis for distinguishing the natural and human sciences remains contentious and unreconciled today. “Erklarung” translates to “explanation” and “verstehen” to “understanding”. Verstehen in this context is a particular kind of understanding where the person, the subject, consciousness, dasein or whatever you would like to term who we are is intrinsically part of both the understanding and what is understood. It correlates to the notion of consciousness as experienced experience where the “experience of” can only be conceptually and not really distinguished from the experience. On a scientific level, the understanding proper to the human sciences includes an immanent self-understanding of the human scientist in some sense.

A major move in distinguishing the sciences was to associate erklarung with explanation and verstehen with description. As we will see in the next chapter, combined with Brentano’s notion of intentionality and truth this lead to Husserl’s development of phenomenology as a descriptive science. Explanation was associated with naturalism, which in turn was thought to be reductive and dehumanizing. The radical difference in methodology was dictated by the differences in what was studied. However, the reader

should know by now that our approach is explanatory and our goal is to provide a model that does justice to both the natural and human sciences while “retaining” consciousness as experience. We will do this in two ways. The first is to relate it within an explanatory model. The second is to understand its function which in turn yields an understanding of its autonomy as unmediated immediacy.

### Existential Explanation

The notion of existential explanation addresses both issues raised regarding the human sciences. The first is that the scientist as a person needs to be explicitly taken into account without affecting the objectivity of the human sciences. This implies that an adequate theory of objectivity needs to be able to take the personal into account. The second is that an explanation of the person and consciousness needs to be developed that is objective but non-reductive. “Non-reductive” means that consciousness needs to be explained in its own terms and not in those of physics, chemistry or biology. We will see that these sciences need to be included in an explanation of human and animal consciousness, but they are not adequate to fully explain it.

An explanation is existential if it involves self knowledge. We will understand this later as our participation in the world or situations. There is an existential element in the fact that participation involves freedom. There is a second existential element in that we need to become more involved in our participation to understand it. Trying to understand it changes our degree of involvement. There is a third existential element in affirming the explanation

as true because it may be contrary to our values, self image and other judgments requiring a reworking of these to enable the affirmation. There is a final existential moment in choosing to live consistently in terms of the new intelligibility which can include changes in values. Thus, existential explanation is transformative. Knowing always changes the knower. But existential explanation changes the involvement of the person in its genesis and has the potential for greater personal change since the person becomes different for themselves. We can be surprised in discovering ourselves. It is integral to the methods of the human sciences and, perhaps, to some extent to ethnology insofar as understanding others, or the general cases of animal behavior, includes understanding ourselves.

Earlier we saw that in principle we can have a human science of consciousness that is explanatory. In developing that science there are ongoing transformations and re-situations of the scientist as knowledge develops. These do not need to detract from the validity of the results or the objectivity of the effort. Rather they are part of the subject matter itself and need to be explained existentially to maintain both the scientific orientation and the comprehensiveness of the effort.

Perhaps the central issue in the human sciences is that the scientists are to some extent part of their subject matter. If they are not part of the science directly, they are indirectly. For example the history one writes is conditioned by one's own cultural and historical understanding. In turn that is based upon one's living that embodies a cultural intelligibility not fully explicit to the person. Making that explicit so that one's own culture and another's or one's culture at one time and one's present culture can be distinguished requires some degree of self knowledge and development. To some degree, then, the development of the human sciences and personal development are

intertwined. The ideal example is a therapist's understanding of the patient in therapy. To be effective, therapists need to go through therapy themselves. The goal is to prevent them from misunderstanding their patients' issues because they have unresolved psychological issues themselves. This does not occur from dropping themselves out of the equation by becoming less involved or uninvolved, but by transforming their involvement via their own therapeutic progress and through the application of therapeutic methods. The success of the methods is dependent on the therapist developing to the point that he or she can distinguish their own concerns and interpretations from the patient's and assist the patient in resolving the patient's issues. Ideally the therapist does so via a scientifically established psychological and therapeutic model that accounts for both his or hers and the patient's behavior and development in the therapeutic situation.