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THE THREE TYPES OF CONSCIOUSNESS

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Preliminaries

What is consciousness? The definition I favor is one given by the philosopher John Locke (1690/1975). Obviously, it is an old definition, but I find it still most pertinent. By this definition, "consciousness is the perception of what passes in a man's own mind" (Locke, 1690/1964, p. 96). In other words, what characterizes consciousness is its being a phenomenon similar to perception. What is special about consciousness is that is involves perceptions whose objects are not, as in standard sensory perception, out there in the external world, but rather internally, in one's own mind. Some modern investigators (e.g., Rosenthal, 1997) have objected to (and even ridiculed) this conception noting that whereas in sensation and perception there are specific organs that allow us to sense and perceive, in consciousness this is not the case. Anatomically, this is, of course, true. Yet, phenomenologically, there is no question that an experience similar to perception does occur. People are at times aware of thoughts passing through their minds and they may even hear them in their mind in a manner analogous to that one normally hears verbal discourse, people can close their eyes and see visual-like scenarios, at night we all experience this as dreams, some people can hear music in their mind's ears.

Thus, phenomenologically, the relationship between cognitive agents and their thoughts is similar to that holding between these agents and the objects of perception that present themselves in the external world. Cognition, I maintain, has to do with the phenomenology of mind, not with the anatomy or physiology of higher mental functions. The cognitive psychologist should take the phenomenology as given. His task is to develop a systematic characterization of this phenomenology - to define regular patterns that it

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manifests, to specify the lawful relationships between them, and to attempt to characterize these in a coherent, unified manner so as to discover the basic principles governing the mental state of affairs at hand. Following this approach, I have, in the past, studied various aspects of the phenomenology of human consciousness. The major focus of my research have been what I call *thought sequences* - trains of verbal-like expressions that spontaneously pass through people's minds (see Shanon, 1984, 1988, 1989a, 1989b). I have also studied mental images (Shanon, 1989c), dreams (Shanon & Eifermann, 1984) and hallucinations (Shanon, 1998a). These works are empirical - they all consist of a detailed examination of the structures of internal perceptions as they manifest themselves in particular domains of consciousness. Here, I would like to take a more basic perspective and focus not on the phenomenological details but rather on the general features of the system of conscious experience as a whole. Some of the ideas presented here were already introduced in Shanon (1990).

The focus of the present discussion is what seems to be the key feature of consciousness, namely, subjective experience. Like the perception of the world, the perception-like phenomena that constitute consciousness are sensed and felt. These inner sensations and feelings define the basic quality of human subjective experience. Subjective experience is the core of our mental life. As William James (1890) stated throughout his *Principles of psychology*, such experience is the basic core of human mental life.

Subjective experience is notorious in its defying definition (see, for instance, Dennett, 1996). For this reason, some have argued that it is outside the realm of scientific discourse (see, for instance, Dennett, 1991; for a different approach see James, 1958). I maintain the opposite. My approach is phenomenological and I believe that what the cognitive psychologist should do is chart the geography of mind (for methodological argumentation for this, the reader is referred to Shanon, 1984; see also Huxley, 1963). Rather than be bogged down with definitions or deny what is phenomenologically given, the psychologist should take experience as basic and attempt to define the structural patterns and the dynamics in which it is manifested. This is similar to the situation that obtains in the natural sciences: The physicist takes matter as given and sets upon himself not the definition of what matter is but rather the specification of the laws to which all matter is subject. In line with this stance, the present discussion presents some basic features of the geography of mind as they pertain to the phenomenon of human consciousness.

By and large, contemporary scientific psychologists, most of whom are American or American-oriented, have avoided studying experience. In this, they are to be contrasted with continental philosophically-minded students of mind of the earlier part of the century - notably Merleau-Ponty (1962) and Van Den Berg (1995). To my mind, if psychology is to maintain its place and status as a genuine intellectual and scientific discipline it has to come to terms with experience. This is so, I believe, because experience is the very subject matter which is specifically psychological. Indeed, I maintain that the phenomenology of experience is precisely the proper topic of psychological investigation. In saying this, I am contrasting experience with other candidates for psychological investigation that have been put forward during the past century - behavior, underlying psychic dynamics, knowledge and mental representations, information processing and the manipulation of symbols. Why I hold to this view is a topic that extends beyond the scope of this paper. Here let me just say that I find analyses of the type sketched here as defining the foundations for a future scientific (for scientific it should be) study of consciousness (for elaboration, see Shanon, 1993).

The present investigation is founded upon the assessment that consciousness in the Lockean sense is instantiated in three types of experiences. The three types to be noted are sensed being, mental awareness and reflection. In Shanon (1990), I refer to them as Con_1, Con_2 and Con_3, respectively. The three types are now introduced in turn.

The three types

Con_1: Sensed being

Sensed being is the most rudimentary constituent of consciousness. It is to that quality that distinguished between a living sentient organism and an inanimated or dead one. Rather than be bogged down with an analytical definition of this quality, we shall regard it as elemental and note that all other types of consciousness presuppose it as a fundamental feature. Whatever consciousness is, it has this feature of being sensed and felt (see the perceptual state in Armstrong, 1981, Con_3, and Con_2 in Natusoulas, 1978, 1981, and sentience in Dennett, 1996).

Con_2: Mental awareness

The second type of consciousness is mental awareness. Often, when the term *consciousness* is being used in the psychological literature, the reference is exclusively to this type. Indeed, Locke's definition cited above applies best to this type (for modern cases see, Mandler 1975; Pope & Singer, 1978, as well as Chapter 3 of Dennett, 1991). As already noted above, phenomenologically, it is as if people have the ability to perceive items and scenarios that are not outside in the physical world but rather, inside in their minds.

Unlike Con_1, Con_2 is focal and differentiated. Con_1 consists in an all-encompassing quality or ambiance. There is the quality of subjective experience but there are no specific contents to it. By contrast, Con_2 is characterized by the experiencing of well-defined entities or states of affairs. These may consist of particular thoughts being entertained, of specific memories being recollected, of visual-like or auditory-like mental events, of dreams and perhaps—in the non-standard case—of hallucinations. The totality of these comprises the concrete phenomenology of human consciousness. (for related discussion, see Shanon, 1984, 1989a as well as Dennett, 1991).

A second feature that distinguishes Con_1 and Con_2 has to do with the notion of *I*. In the characterization of Con_1 no reference to "I" or "self" has been made nor any clear distinction was made between "me" and the world which is "not-me". The quality associated with Con_1 comes by the coupling of being and world. Both conceptually and phenomenologically this coupling is more basic the constituents (mind and world, self and environment) that, because of the manner they are being described in language, seem to compose or define it. (This view of the primacy of relations is grounded in the perspective of ecological psychology developed by James Gibson and his disciples in the domains of perception and action; see, for instance, Turvey, Shaw, Reed & Mace, 1981; Turvey & Shaw, 1979; also relevant are the basic insights of the school of autopoiesis developed by Maturana 1978, Maturana & Varela, 1987, Varela, Thompson & Rosch, 1991). By contrast, with Con_2 the distinction between the internal and the external is manifest. The person experiencing thought sequences or mental images (usually, even the one who is dreaming) appreciates that these pertain to the mental, not the external physical or social, world. It should be made clear, however, that for this no explicit notion of "I" or "self" is needed. The distinction is felt, but there need not be an explicit conceptualization of it. Such

conceptualization appears only with Con_3.

Reflection

The key feature of the third type of consciousness, Con_3, is reflection. I use the term in the technical sense of a function taking its own value as an argument. Not only is it the case that human beings can be aware of their mentations, these mentations may themselves become the objects of thought and other cognitive activity. Two principal kinds of reflection will be noted. The first is meta-observation. In it, the cognitive agent assumes the role of an observer and reflects upon the contents of mental states and their dynamics. The second kind is monitoring or control. Monitoring consists in the cognitive agent checking or evaluating his or her mentations, whereas control consists of conscious mention that guides or governs thought (for related discussion, see Johnson-Laird, 1983; Natsoulas, 1981; Shanon, 1988).

Associated with reflection is a feature that may be referred to as entithood (see Shanon, 1989b). In essence, reflection consists of the consideration of the constituents of one's mentation as distinct objects. Entitihood is achieved through focalization and articulation whereby the separation between the constituents of subjective experience are well demarcated. With this, the constituents in question are invested with relative stability and separability. Consequently, thoughts gain qualities akin to those encountered with physical objects. Specifically, entitihood makes mental material concrete-like and thus the constituents of mentation become objects that one can handle and manipulate in a manner analogous to that by which one handles and manipulates concrete objects in the physical world; for specific examples the reader is referred to Shanon (1987, 1989b, 1998b).

Interrelationships

As indicated in the preliminary methodological comments, the task of the phenomenologically-minded psychologist is not only to specify the different types of phenomena but also to establish the relationships between them. Indeed, it is the relationships (that is, patterns of higher orders) that define the foundations for the theoretical, not merely observational, study of mind.

Central to the present discussion here is the appreciation that the three types of consciousness are intimately interrelated. Each type evolves into the other ones and together they all comprise one cognitive structure exhibiting internal logic and coherence. In particular, three dimensions of interrelationship will be noted - progression, analogy and closure. The following presentation will show that these patterns of interrelationship all tied together so that in unison they define still another dimension of interrelationship - coherence.

Progression

The relationship of constructive progression has been explicitly noted in the course of the foregoing presentation. Evidently, each type in the sequence Con_1-Con_2-Con_3 presupposes the one that precedes it the sequence and builds up upon it. For the mental entities constituting the experiences of Con_2 to come into being the primordial substance of Con_1 is presupposed. For the processes of reflection and control constituting Con_3 to apply, the prior existence of the mental material of Con_2 is needed.

Taking a closer look, we note that three general lines underlie the progression of consciousness - differentiation and crystallization, distancing, and internalization.

Differentiation and crystallization. The mental entities constituting the experiences associated with Con_2 come into being by the differentiation and crystallization of the primordial experience associated with Con_1. With this, non-specific, ill-defined, non-focal ambience gives way to specific, well-defined, focal mental contents. A metaphor I like to use is that of a viscous liquid that, upon being heated, crystallizes into blobs. In Shanon (1993) I have argued that such crystallization is actually one of the most basic, and more important, features of the human cognitive system.

In Con_3, with the mental material of Con_2 being reflected upon, further differentiation and crystallization is encountered. In fact, the entitihood which is characteristic of Con_3 is achieved by accentuating the demarcation of specific cognitive material and lending it independent existence relative to the overall flow of mentation.

Distancing. Related to differentiation is distancing. In Con_1 one is fully

immersed in an all embracing ambience. Whereas in Con_1 there is no separation whatever, in Con_2 there is separation between internal and external world. Yet, in Con_2 another, more specific immersion is encountered - the non-reflective involvement in the activity of thinking. In Con_3 there is further distancing and the separation between the cognitive agent and the stream of thought is complete.

Internalization. By its very essence consciousness is an internal affair. However, like other aspects of this phenomenon, this feature is clearly present only with the key type Con_2. In Con_1, there is actually not much difference between inside and outside. By its very definition, sensed-being-in-the-world is constituted by the coupling of both the mental and the physical, the internal and the external. With the differentiation and distancing characterizing Con_2, the distinction between inner and outer reality is well-defined and the focus of cognitive activity is clearly drawn to the former. In Con_3, not only the objects of mention but the very space upon which one acts is internal. In both Con_2 and Con_3 the internalization is two-fold. On the one hand, there is the very distinction between the internal and external domains and the grounding of one's experience in the former. On the other hand, whatever happens in the emerging internal domain is analogous to state of affairs encountered in the external one. Thus, in Con_2 one perceives internal state of affairs. Perception is, of course, a process primarily in the relationship to the external, physical world. In Con_3, not the internalization proceeds further and encompasses action: in the internal domain one not only feels or thinks, one also acts with and upon objects as if they were concrete. It is as if one has become an actor in a virtual reality constructed in the internal theater of one's mind (for further details, the reader is referred to Shanon, 1998b).

Analogy

The foregoing discussion shows that the three types of consciousness are related to one another not only by way of progression but also by way of analogy. The trends sketched above indicate that patterns by which Con_1 progresses into Con_2 are similar to those by which Con_2 progresses into Con_3.

In particular, I would like to comment on internalization. We have noted that Con_2 manifests a differentiation of the inner and outer domains and an internalization whereby a well-defined, distinctly mental internal phenomenology comes into being. But

the flow of thought constituting Con_2 is similar to Con_1 in that in both there is an immersion in one's being in the world. In Con_1 the world is the external one (or perhaps, it consists of a coupling of the internal and the external), in Con_2 the world is internal. Yet, other than this difference, in both cases the immersion is the same. In both, the cognitive agent is part and parcel of an activity in a world. In Con_1 this activity is the very being in the world and living in it; in Con_2 the activity is thinking. Elsewhere (Shanon, 1989b), and on totally independent grounds, I have argued that thinking should be viewed perfomatively - not as the expression of ideas but as an activity. Thus, in both cases the cognitive agent is immersed in action. What has happened in the progression from Con_1 to Con_2 are two things: the action has evolved and become richer and more complex, and an internal domain for action has opened up. In Con_3 these two trends of progression advance further. Specifically, the internal domain of action becomes more distinct, and the activity that the cognitive agent executes in it controlled.

Let me make on further comment on the immersion in action. When taking place in the external world, immersion is usually characterized as a state of affairs in which one is not conscious. This is usually exemplified by reference to automatic skilled performances like driving in which the body acts as it on its own. By the present analysis, however, such a pattern of behavior does exhibit consciousness - that of Con_1. Admittedly, the higher types of consciousness, Con_2 and Con_3, are not encountered here, but from this one should not conclude that the activity is not conscious. In fact, it appears that what happens in automatic skilled performance is fully analogous to what happens in the thought processes constituting Con_2, that state which is usually taken to be the paradigmatic case of consciousness. Again, the confusion vanishes when one appreciates that consciousness is not a monolithic entity and that it is defined by a cluster of features. Con_2 is similar to skilled action in the real world with respect to the features of action; Con_2 differs from such skilled action with respect internalization. In both cases explicit reflection is lacking; such reflection is encountered both in non-automatic actions executed in the real world and in Con_3.

Closure

In addition to the three types of consciousness being related in their sequential order (Con_1, Con_2, Con_3), Con_3 also related to Con_1 so that the sequence turns

onto itself and marks a closure. Specifically, Con_1 consists of the experience of one's being in the world. The dominant feature of Con_2 is that of well-defined content. That of Con_3 is the experience of action, which is part and parcel of being in the world.

The pattern just noted is complementary to that of the sequential progression Con_1 - Con_2 - Con_3. In addition to this sequential progression, there is also a parallel progression from Con_1 to the two other types. Con_2 relates to Con_1 by the differentiation of content. Con_3 related to Con_1 by the establishment of a self that is distant from the objects of mention. Together, the two patterns mark a closure: Con_3 is the highest type in a sequence, but it also ties together with Con_1. Self-awareness and meta-observation are not the inspections of states of affairs that are foreign to the agent who is doing the inspection. As noted, experientially, the awareness of one's self in Con_3 is similar to one's awareness of the world in Con_1. Furthermore, meta-observations of one's mentation are themselves objects of one's mentation. In other words, once articulated in the theater of the mind, meta-thoughts such as "I have to find out about *X*." or "This idea is interesting." become thoughts of the regular type. In other words, Con_3 turns into Con_2.

Given this closure of the system upon itself, any characterization of consciousness in terms of distinct, ordered levels will not do justice to this complex phenomenon (for such characterizations, see Johnson-Laird, 1983; Minsky, 1968). Thus, it seems that the ordering of the types of consciousness defies any simple Euclidian characterization. More appropriate is a picture like that of a Möbius strip or the ascending yet closed forms that serve as the basis for many of Escher's paintings (e.g., the climbing staircase that, despite of its going upwards, brings one back to the ground floor).

Coherence

All the foregoing patterns indicate that the three types of consciousness are the manifestations of one unified cognitive pattern. The three types not just three types of phenomena that can be subsumed under the heading *consciousness*. Rather, these three types are interrelated and are the manifestations of one system of generative principles. The system is one, and it exhibits a high degree of internal structure and coherence. The different types may be thus regarded as the different faces of this one system.

In sum, the present analysis shows that consciousness is both one and

many. On the one hand, there are several different types of consciousness. On the other hand, although phoenomenologically distinct, these different types are all the manifestation of a unitary cognitive phenomenon, one which exhibits coherence and compact internal structure. Thus, the phenomenon to which we refer as human consciousness actually consists of the dynamic interplay between several manifestations, which together are the different faces of one multi-dimensional coin, so to speak.

Lastly, let me consider a question that is very likely to be raised: Are there still other types of consciousness possible? Phenomenologically, it appears that there are. Following the logic we have pursued thus far, a fourth type may be suggested in which one becomes aware of one's being engaged in reflection, and one's reflection itself becomes an object for further reflection. While phenomenologically this type definitely exists, conceptually (hence, theoretically) I shall not regard it as a distinct, additional type. This is because structurally, the pattern in question does not introduce any new constituent or principle not already noted in our analysis so far. In other words, while types pertaining to higher order (in the logical sense) may be conceived, the system of consciousness is, by its very structure, a tripartite one.

Concluding remarks

In closing, I would like to place the foregoing discussion in a more general perspective. Throughout this discussion being in the world was regarded as a basic, elementary feature of consciousness and acting in a manner akin to the way people act in the world was presented as the major cognitive asset that the system of consciousness affords. Indeed, the three types of consciousness we have discussed may be defined as *being* (Con_1), *non-reflective acting* in the internal domain (Con_2) and *reflective action* coupled with simulated action in a virtual reality of the mind (Con_3). These observations were made on the basis of a conceptual-phenomenological analysis. Interestingly, on the basis of entirely independent grounds I have come to a general picture of mind in which the scheme of the system of consciousness presented here fits naturally.

In Shanon (1993) I present a non-orthodox picture of mind in which I single out two features as defining the basic capabilities of the human cognitive system. The first is being-and-acting in the world. This has been chosen on the basis of systematic

examination of practically all domains of human behavior, notably - language, memory and perception, learning and child development. In developing this picture of mind, I have been influenced by continental phenomenological philosophy (in particular, Heidegger, 1962 and Merleau-Ponty, 1962) and by the work of the modern psychologists John Gibson and Lev Vygotsky and their disciplines in the schools of ecological psychology and activity theory, respectively.

The second basic capability singled out in Shanon (1993) is crystallization. By this term I refer to the ability to generate specific, articulated expressions and patterns of behavior. In the present discussion too crystallization featured as a basic principle. We have seen that whereas being-in-the-world is part of the primary, non-reducible quality of sentience which gives consciousness its very essence, crystallization (as associated with Con_2) is what gives consciousness its mature distinctly human form. Indeed, whereas Con_1 is shared by living organisms throughout the phylogenetic scale (how far down this scale is not clear, but this should not significantly affect the point made here) Con_2 is perhaps within the sole prerogative of human beings (again, its being shared by the higher primates need not detract from the main present point). It is not for nothing that some regard Con_2 as consciousness *par excellence*. We have seen this to be the case at the onset of the present discussion, in the Locke's definition of consciousness. Evidently, the type of consciousness which best fits into this definition is Con_2.

In Shanon (1993) I also single out a small number of basic trends that underlie human cognitive development. The most salient of these are differentiation and decontextualization. Again, these two, with the latter referred to as distancing, are found to govern the progression of types in the system of consciousness investigated here. Thus, the overall trends that underline human cognitive epigenetical development and the trends that govern the progression of the different facets of consciousness are essentially the same.

In the present discussion one more basic principle has been indicated - internalization. As argued in other contexts (see, Shanon 1989b, 1998b), I regard internalization the basic functional bonus of consciousness. With the advent of full-fledged consciousness as in Con_2 and Con_3 evolution has come up with a wonderful (in the literal sense of wonder-ful) trick. Cognitive systems are endowed with virtual realities, with worlds created within the internal domain of the mind. These virtual worlds allow cognitive systems to act in a simulated fashion even when actual action in the real world is not feasible. As

argued and demonstrated elsewhere, this has enormous functional gains. *Inter alia*, this allows human beings to plan their actions, to retrieve the past that is no longer there, to reflect upon the future and other non-existent state of affairs, to hypothesize and to imagine. Surely, human culture could not be conceived without these abilities.

Another comment of broader scope pertains to work now in progress. Current investigation lead me to conclude that the three types specified in this paper are not confined to the specific domain of conscious experience that was at the focus of our discussion here. Similar patterns are to be noted also in the other domains pertaining to the phenomenology of consciousness. These include the system of self, to which I have alluded to in passing several times in this paper, the system of meaning, and the system of action. The full analysis of these other systems clearly extends beyond the scope of this paper.

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