

Extracts F15 – Virtual reality and space

The following text extracts constitute a sampling of our collective understanding of how we ‘create reality’ in the mind subjectively or individually, and reach a collective or inter-subjective consensus on a reality that can be considered objective or common to the senses of all humans, and physical. In other words, these realities are of three kinds.

(1) Subjective, individual realities are mediated by the mind and brain-interpreted perception or ‘extra-sensory perception’ (ESP, psychic or paranormal). I call this reality ‘sensate’ because it is bound with emotion and the pleasures or pains of sensations. This reality is culturally bound and takes forms drawn from one’s culture (Stace 1960, 2001), or from ‘structures of consciousness’ that reenact in each person’s mental development the collective evolution of human culture (Wilber 1977, Gebser 1985).

(2) The objective reality, commonly accepted is spatial, physical, material, and the basis for scientific realism or philosophical physicalism, and which is sensory (5 senses in Western culture).

(3) There is also non-normal reality that is undifferentiated, often called ‘One’, and is related to a state of not-self, or is a ‘place’ impossible to name (see <Extracts F12\ Mysterious pass or place>). It is often considered spiritual, but can also be a ‘direct’ reality, directly accessed by the mind without a self (Buddhist philosophy) or intellectual discrimination (Husserl – see Valle & Halling 1989), or ‘actual’, related to physical sensations that are internal to the body (eg in Qigong or Tai Chi), because not ‘sensory’ *per se*. There is cultural consensus on its existence, but it is understood as unstable, not permanent, accessible only to special people, or only after special practice. Philosophers also sometimes associate it with animal cognition, and Tulku (1976) describes it as ‘natural awareness’. Explanations concerning this reality are always confusing because they use the very concepts and experiences that this reality does not involve (eg self, time and space, or systems – see for example Macy 1989).

Subjective and objective reality have an antecedent in primitive realities that did not differentiate the individual and the collective, body from mind, dream from waking. Krippner & Sichelman (2000) notes that shamanic realities ‘have consensual validation and waking life consequences’, Jaynes (1976) describes the archaic ‘bicameral’ consciousness (hearing ‘the gods’), Devereux (1992) describes the landscapes of the aboriginal DreamTime. It is related to myths and Gebser’s name for it, ‘mythical consciousness’, has been adopted in transpersonal psychology. These primitive realities are construed as having been consensual, collective, and an origin of the modern individuated self-consciousness (having an individual ‘self’), a notion that was expressed already in ancient philosophies of

India. Most authors agree that the objective, spatial, physical, material reality– ‘space’ – is perceptual, sensory, and is modelled according to visual and auditory parameters (eg Craig Nersessian & Catrambone 2002):

- ‘There is a vast cognitive science literature on mental imagery that provides evidence that humans can perform simulative imaginative combinations and transformations that mimic perceptual spatial transformation.... These simulations are hypothesized to take place using internalized constraints assimilated during perception.’ (Nersessian 2002.p.139)

The visual is reflected in the ‘advanced’ knowledges of both science and core tradition (visual imaging technologies and visual symbols). The auditory is reflected in terms such as stochastic resonance, the ‘idea of resonance’ (Le Blanc 1985, Gebser 1985 p.203-205) in ancient cultures, and nexialist thinking, but also in ‘The Word’ in religious paradigms. I could find no literature relating *both* visual and auditory to *both* the fundamental or primary parameters of explanation and experience – N2d-duality and N3p-polarity (or binary nodes and modal frameworks) –: only one is usually addressed, duality being related to time, and polarity to spaces. Only one of the two (duality or polarity) is habitually taken as the basis for a new paradigm of cognition (eg CNRS 2006, ARCo 2006, MathPages: ‘the dual of subjective experience’).

The connection is rarely made between the scientific and human representations and the prosaic reality of daily life that includes the constraints on the body-brain, felt through the thinker’s health, level of brain-mind activity and of psycho-social stress, and which results in the limitation of ‘apprehending’ to sensory perception. For example, a sensation of swelling in the head or of high ‘firing’ activity in the brain, can ‘prime’ polar notions of ‘reality’. Yet it seems to me that few make the connection between general ‘space’ (the objective, physical, material, and perceptual) as an *explanation* and sensory perception as an *experience* of daily life physicality. The idea of constraint remains intellectual:

- ‘To explain how model-based reasoning could be generative of conceptual change in science requires a fundamental revision of the understandings of concepts, conceptual structures... A basic ingredient of the revision is to view the representation of a concept as providing sets of constraints for generating members of classes of models. Concept formation and change is then a process of generating new, and modifying existing, constraints.’ (Nersessian 2002 p.143) [...] ‘As employed in model-based reasoning, I propose that analogies serve as sources of constraints for constructing models.’ (op. cit. p.145).

Consequently, the daily life ‘space’ that we ‘perceive’ is usually simply taken for granted, in sciences, and is considered a ‘lower’ reality, in human fields, compared to mental and human spaces, without explanation for this devaluation. I could not find a description of the ‘origin’ of the 6-directional or 3-dimensional ‘volume’ reality (eg the ‘body’) that would not refer back to either a FlatLand space plane, in physics, or to the ‘4 directions of the Earth’ and to tradition, in humanities. Yet these dimensions are directly related to definitions of inside and outside of the body of a skin-encapsulated (Watts undated) ‘body’ system, closed or open,

of intervals (Watts undated) and to direction or orientation, with activity in between.

These are the basis for both Western biomedicine and Eastern-inspired healing practices. To understand the origin of these 4 flat directions was one of my accessory studies (lasting two years), which involved a particular way of tracing etymology. Is it a coincidence that our normal perceptual space is a conventional euclidean space, a 'flatland'? (Todd et al. 2001, 1999). The distinction of inside-outside is also a major notion in topology (eg double-sided surfaces):

- 'Outside and inside are the two different values of a measure called parity', and which depends on the 'number of boundaries crossed' [even or odd numbers], thus 'changing the connectedness, changing the parity'. 'By fixing the starting-parity as *outside*, you can easily, by "evens-and-odds", tell "where you're at".' (Britton 2006)
- 'A simple trick illustrates topology: taking off a vest without taking off a coat, since (topological) the vest is outside the coat -- in the sense that a paper lying on the bottom of a wastebasket is really outside the basket, not in it, since being in would require removal of a *boundary*. One puts an arm through one vesthole; pulls the coat through this vesthole until it is hanging on the other arm; then pulls the through that other vesthole, where it is obviously "outside".' (Britton 2006)

It is also is the basis for the idea of the body as a machine, vehicle, or container for the human mind, its instrumental brain, the senses of its head, and its constructed, or framed (Rosenberg quoted in Furth 1999 p.13) realities. It is the mind's memory that is blamed for incomplete healing and scarring that remain despite the cells of the body being totally renewed constantly (eg psychoneuroimmunology, Chopra 1990), and which Williamson & Pearse (1980) and many others consider the ultimate source of health.

I have come to consider the spatial, systemic, and memory-bound reality of the 'physical / material body' as a nexial-topologic projection that is bound to operating the body by 'brain central control' and sensory-based feedbacks. This is involved in the loss of internal sensations that is correlated with nexial activation of 'effort' (eg stress, survival, work). Both these represent the loss of the 'ease' of 'proto-health'.

This loss of ease is a way of formulating constraint, and governs the models of 'reality' we create:

- 'Physical activity and conceptual thought have come together primarily in studies of gesture and language. [...] One relevant finding is that physical activity can prime sensibility judgements. [...] physical activity can actually help generate perceptual simulations. [...] Moreover, we argue that for physical activity to be useful it need not explicitly mimic events or situations under consideration. [...] A convergent force image schema might, for example, be elicited by any sort of compressive activity.' (Craig, Nersessian, & Catrambone, 2002, pp.181-4)

For example, a quasi-permanent sensation of pressure in the head or of high-'firing' activity in the brain can rule a nexialist modelling based on polarised activity. The following text extracts aim to show that the collective consensus of physical-material reality is rarely challenged.

- 'Plato has also postulated a tripartition of the soul, which like any trinitary form is characteristic of the mental structure and may be seen as a direct connection to the tripartition of time effected by

Parmenides, who was the first to posit the three-phase nature of time. This gave rise to the problematic aspect of the future. [...] The dimension of the future necessarily lends a forward thrust to spatiality, giving both space and time the semblance of direction. Let us take note of this result: our conceptual time is not a psychic but a mental phenomenon which proceeded from the psychic: it is the line that severs the circle and thus forms the basic dimension of a four dimensional space.' (Gebser 1985 p.178)

- 'cognized environment – an internally simulated world... produced by a field of neural entrainments that constantly in flux but exhibits recurrent patterns ... in a dialectic arising between ... intentional processes and the sensorium, ... essentially a symbolic process.' (Laughlin 1990 p.334-335)

- 'Society not only controls much of the conditioning of neural entrainments, but is also able to control the cognized environments and behaviors of group members by manipulating objects as symbols. [...] Cosmological understanding is depicted in symbolic dramas that in turn lead to individual experiences, which are then interpreted within the framework of the cosmology that first produced the experience-thus completing a "cycle of meaning" .' (Laughlin et al 1990 pp.335)

- 'There is compelling evidence from parapsychological research that at least some of these reports have consensual validation and waking life consequences. Shamanic models of "reality" (which reflect shamanic philosophies) also have been ignored in mainstream academic circles. They provide anecdotal evidence, congruent with parapsychological data, and need to be reconsidered by the dominant Western academies because these models encompass anomalous dreams, and because they furnish provocative data. [...] Both Tibetan Buddhist philosophy and Western social constructionism describe how the "individual self" is socially constructed. These "selves" are manifestations of the "filtering" process described by Bergson, but during dreams the "filters" often collapse and humans are opened not only to the subtle signals described by Wolf but to new conceptions of being such as the "wholeness of the events of our lives. [...] Perhaps the attempt to distinguish "dream reality" from "waking reality" is part of a larger program, one that – in the West – typically distinguishes object from subject, science from myth, intellect from body, reason from intuition, modernity from postmodernity, the normal from the paranormal, humans from nature, men from women, monotheism from paganism, technology from "spirit" --basically, the established order from the "other." [...] that can only be treated by Westerners safely as "object" lest they slide through the "filters" that Westerners have erected to protect their "reality." ' (Krippner & Sichelman 2000)

- 'The mind became identified with the simulation and made it perfectly real. [...] Simulation [of flight] can readily become experiential reality. [...] With my interest in altered states of consciousness, I find the possibilities of modelling and communicating the nature of various altered states through virtual reality simulations quite exciting. [...] We each live "inside" a world simulation machine. We almost always forget that our "perception" is a simulation, not reality itself, and we almost always forget that we have anything to do with the particulars of how the simulation works . I personally find .it exciting that this is just the kind of model of consciousness I proposed in my systems approach for understanding altered states (Tart, 1975), and the technology of virtual reality is an excellent demonstration of that approach. Let me give you an example of the operation of our personal world simulators, our virtual reality creation mechanisms . In the mid-1960 ' s, a friend, Robert Monroe, and I invented a device for creating a small "psychedelic" light show in people's own living rooms . We put about sixteen Christmas tree light bulbs in the base of a round container. Each bulb was the kind with a thermal breaker built into it, so it blinked on and off, and each colored bulb had a slightly different blink rate . If you looked directly at the bulbs, you saw an uninteresting bunch of blinking bulbs. We then put a metal plate over the bulbs with a bunch of oddly shaped holes in it, so the bulbs would cast little colored shadows . Then we mounted another plate with oddly shaped holes in it over the first one, and had a motor rotate this second plate very slowly, so the light was coming through combinations of openings that were slowly changing the combined shape. The lights and shadows were then projected on to the inside of a translucent hemisphere . Now you turned on the "Lori Lite," as we called it, and played some music. I cannot recall how many arguments I got into with people who wanted to know how we were getting the light pattern to synchronize with the music so beautifully. It was perceptually obvious to them that the light patterns and music were synchronized, and so there had to be some

highly sophisticated electronic system synchronizing the sound and the light. I would explain that there was no hidden mechanism for synchronization, it was just a bunch of light bulbs blinking in a quite random way, but almost no one would believe me. Finally I would "admit" that, although it was hidden from their sight, there really was a very sophisticated computer synchronizing the light patterns and the music. This explanation was not really a lie. The "computer" was (and is) located in each viewer's head, and one of its main functions is to "synchronize" events, to "make sense" out of an incredibly complex world. The accepted modern understanding (which I think is actually incomplete in important ways, but that is not germane to our discussion here- see [Tart, 1990a]) , starting with a materialistic view of the world, indicates that we do not experience the outer world directly but indirectly . Various physical energies like light and sound are not experienced directly. [...] what we experience is not the world per se but processed neural abstractions. Although these neural events are initially related to external world events, this relationship may be greatly altered by the time we deal with the final neural events comprising consciousness. That final pattern of neural events that we are conscious of, and the other neural events that lead to it, are our personal World Simulation Process, our mechanism creating the virtual reality in which we experientially live. The structure of our nervous system, as programmed by our personal psychology, constitutes our stereo headphones and "eyephones," our "touchphones," "tastephones," and "smellphones". [...] *"The basic function of the World Simulation Process is to create, maintain, expand and update internalized, rapidly functioning internal models of the real world that will enable us to survive and function efficiently..."* (Fodor, 1985, p.4) [...] What are the limits of arbitrariness of construction of our internally generated virtual realities that are compatible with survival?' (Tart 1990)

- 'Let's take, first of all, two very fundamental poles. We'll call them respectively 'solid' and 'space,' if you want existence and non-existence, because we tend to treat space as something that is not there. That's simply because we don't see it; we ignore it. We treat it as if it had no effective function whatsoever, and thus when our astronomers begin to talk about curved space, expanding space, properties of space, and so on, we think 'What are they talking about? How can space have a shape? How can there be a structure in space, because space is nothing.' But it isn't so. You see, this is something we completely ignore. Why? Because we have specialized in a form of attention to the world which concentrates on certain features as important. We call this conscious attention, and therefore it ignores or screens out everything which doesn't fit into its particular scheme. And one of the things that doesn't fit into our scheme is space. So we come into a room like this and notice all the people in the room, and the furniture, and the flowers and the ornaments, and think that everything else just isn't there. I mean, what about this interval that is between me sitting here and the inner circle of people who are arranged around the floor? What a mess we would be in if there wasn't that interval. You know, I would be blowing down your throat to talk to you. Now intervals of this special kind are tremendously important. Let me demonstrate this to you in a musical way. When you listen to a melody, what is the difference between hearing that melody and hearing a series of noises? The answer is that you heard the intervals. You heard the musical spaces between the series of tones. If you didn't hear that, you heard no melody, and you would be what's called tone-deaf. But what you actually hear is the steps between the levels of sound--the levels of vibration--that constitute the different tones. Now those weren't stated, they were tacit. Only the tones were stated, but you heard the interval. So it made all the difference whether you heard the interval or not. So in exactly the same way, the intervals between us, seated around here, constitute many important things.' (Watts undated)
- 'Mind itself has no substance. It has no colour or shape. It has no form, no position, no characteristics, no beginning, no end. It is neither within nor without [...] It is beyond logical process, beyond time and beyond all existence. [...] There is no other 'thing' to obscure the moment – neither a subject nor an object, neither time nor space. [...] The "field" of awareness is... neither "outside" the body nor "inside" the mind. It is neither mental nor physical [...] Just relax, without effort, completely natural... This is the natural state of mind which is our own self-healer.' (Tulku 1976)