Constructivism and Mystical Experience

Hugh Gash • Dublin City University, Ireland • hugh.gash/at/dcu.ie

> **Context** • Constructivism and mystical traditions each recognize human cognitive limits. However, the former puts its faith in its processes and the latter reveres the product. > **Problem** • Individuals recursively construct their realities in and through their experiences. Often the reality constructed is updated, however this type of reconstructive reflection does not happen in the same way with religious experiences and beliefs. Ernst von Glasersfeld considered the rational and the mystical as two separate types of knowing, providing two different accounts of experience. An alternative approach is to examine the process of thinking to see if there may be synergies between so-called rational thinking and mystical experience, particularly when certain types of new ideas emerge. > **Method** • I link constructivist ideas with accounts of mystical experience prioritizing wonder, insight and the process of coming-to-know. Constructivism is described mainly with reference to Ernst von Glasersfeld's work, particularly emphasizing the impossibility of ontology and drawing attention to some references to mystical experience in the constructivist literature. > **Results** • I note that there are grounds for regarding rational and mystical knowing as belonging in different domains. Radical constructivism maintains that any mind-independent reality is essentially unknowable. In this epistemological framework, gaps necessarily arise in understanding when existing concepts do not fit experience. Forms of wonder may arise from experience of such gaps leading to novel insights and more viable reality constructions. Finally, I suggest that there are grounds for considering such epiphanies sacred, and in addition, as in certain types of mystical experience, they may be related to personal development through recognizing harmony between experiences over time. > **Implications** • There are moments during the construction of concepts when previous concepts do not work and new constructions have not emerged. Such moments have a potentially mystical quality and, if so, are known as epiphanies. So, when gaps occur in the process of knowledge construction it may be helpful to let the mind rest and contemplate. The origin of the ideas that emerge is mysterious, and the ideas may or may not be viable. > **Keywords** • Bateson, cognition, constructivism, Dewey, harmony, mysticism, religion, von Glasersfeld.

Introduction

« 1 » Giambattista Vico's (1988) epistemological work *On the Ancient Wisdom of the Italians* identified knowledge with what is made (*verum ipsum factum*): without knowing how a thing was made, one only had awareness. Ernst von Glasersfeld (2002) argued that the form of Vico's distinction between rational and poetic knowledge was designed to help avoid a conflict between science and the Church. Science could safely provide models that could predict but must not pretend to describe God's world.

“ […] speaking of the real world, Vico said quite clearly that humans can only know what humans themselves have made. He crystallized this in his rather beautiful assertion that God is the artificer of the world, man the god of artifacts. ” (Glasersfeld 2002: 86)

« 2 » If, in interpersonal discussion, we could slow down our arguments, taking this very seriously, then we might be more cautious about acknowledging things that

we might be wiser to doubt. Indeed, the implications of constructivism continue to surprise. For example, if the ideas we construct arise from organizing our experience, we cannot talk about what we consider real, only about what we seem to know about it. Knowing is in the realm of ideas and following John Dewey's idea of *transaction*, is not static but dynamic in its organization of experience (Dewey & Bentley 1949). There are always *gaps* between experience and what we know (Gash 2004). Unfortunately. gaps, if we concentrate on them, distract us from our conversation or our actions, they inhibit. Smooth movement in conversation and action – in living as such – requires us to slide over the gaps. If we concentrate on the gaps, we become bewildered like a friend's dog that ate marijuana cookies and was transfixed by the gaps in the balcony floor (Paul Silverman 1974, personal communication).

« 3 » Ernst von Glasersfeld maintained that mysticism and metaphysics each concerned domains outside experience and so could not be discussed rationally (Cardellini

& Glasersfeld 2006: 179). In contrast, thinkers such as Gregory Bateson and Dewey were much less hesitant about religious concepts. In *Angels Fear*, Mary Catherine Bateson put it this way: "[Gregory] wants us to believe in the sacred, the integrated fabric of mental process that envelops all our lives" (Bateson & Bateson 1987: 200). In *A Common Faith*, Dewey argued that there is a genuine religious attitude in human sensitivity to the possibilities inherent in intelligent action with others and with nature, claiming "whatever introduces genuine reflection is religious" (Dewey 1934: 24) – and not the other way around. And again:

“ The sense of the dignity of human nature is as religious as is the sense of awe and reverence when it rests upon a sense of human nature as a cooperating part of a larger whole. ” (Dewey 1934: 25)

« 4 » Issues arise immediately. What does it mean to say things rationally? For the purpose of this target article, "rational" is about making sense and linking experien-

1

tial elements together so they support each other coherently as a system. It means working with agreed categories using operations such as inclusion and causality in logical ways. Further, if we take Humberto Maturana's notion of consensual community as fundamental to sense-making, then being rational within such a social group implies sharing various collectively held assumptions, particularly assumptions concerning meaning and how decisions are made about knowing and its reliability. Pursuing the idea that rationality is related to consensus implies that different consensual groups can be rational in different ways that vary according to their sense-making and the assumptions they use to organize their experience. Maturana (1988) noted that differences between people reasoning within the domain of "objectivity in parenthesis" invite discussions to examine the origins of the differences. Religious assumptions will not hold for atheist groups, and assumptions about the importance of scientific procedures may not work for other groups.

« 5 » Von Glasersfeld discussed science and religious faith in the following way:

> " What science produces, […], are rational constructs whose value resides in their applicability and usefulness. Believers may cling to what they are told or what they want to believe; scientific knowledge is of a different kind because it is tied to a method that involves experiential corroboration. " (Glasersfeld 2007: 119)

« 6 » In contrast, a dominant approach to religious language is face value theory that interprets religious statements in terms of what they say (Scott 2017). If a listener belongs to an atheist community, then the significance of various religious words cannot be shared. Von Glasersfeld echoes this idea, saying, "I do not believe, however, that we can comprehend God" (Poerksen 2004: 382). In addition to scientific procedures, von Glasersfeld had recourse to his operational analysis of meaning (1962, 1969). This analysis gives a way of specifying how words and phrases are constructed and was designed to specify the mental operations in sense-making. It strongly reflected Vico's idea that to know something one had to have access to the operations involved in knowing: a process that was used in ma-

chine translation. Human thought may be rational to a speaker but may appear "non-rational" because of different assumptions held by a listener. Taking constructivism seriously implies taking responsibility for the origins of ideas and seeking to examine hidden assumptions where necessary. In the remainder of this article I clarify the boundaries and possible synergies between constructivism and mysticism.

Constructivism

Wonder, invention and mystical epiphanies

« 7 » Von Glasersfeld (1974) introduced *radical constructivism* (RC) to clarify and extend the constructivist implications of Jean Piaget's genetic epistemology. Initial work on RC emphasized educational applications, particularly in maths and science, and spread to work on children's perceptions of others (Gash 2014a). In considering invention and insight, constructivist approaches often mention creative moments and wonder (Gash 2004). Is wonder at the door of mysticism?

« 8 » In Jean Piaget's (1968) constructivist theory, the standard way an individual learns is by noticing and adjusting for discrepancies between what is experienced and expected, so a gap is noticed. Maturana (1988: 23ff) discusses varieties of conversations that deal with complaints, desires and commands, each of which implicitly refer to gaps in interpersonal expectations. Occasionally noticing gaps may lead to wonder, and personal learning and transformation. Such mystical epiphanies as moments of insight are striking resolutions of gaps that may occur in scientific, religious, or philosophical domains. In Piaget's terms, they are memorable accommodations.

« 9 » Different knowledge domains may have different assumptions about what can be taken for granted in the process of knowledge construction. So, like Euclidian and non-Euclidian geometry, religion and science are based on different hypotheses or axioms. There are moments when an individual is problem solving when available solutions do not fit. In these moments there must be a letting go of previous ways of knowing like the unknowing of the mys-

tics. Next a new solution emerges. However, constructivism and mysticism each note the limits of human cognition and it seems that at these limits and at moments when knowing is potentially in the process of being reconstructed, an epiphany may occur.

« 10 » Gash (2014a) suggests key constructivist points along these lines:

a Individuals may have very different ideas from one another, especially children in comparison with adults.

b Individuals seek to construct regularities in their experience using existing ideas.

c This constructive process is circular and recursive. That is, ideas are modified by ideas – constructed from the data provided by re-organizing prior experience in the context of present experience.

d Opportunities for learning arise from discrepancies between what is expected and what is experienced. This may occur in noticing differences between what an individual thinks and what others think. Conserving personal integrity and intra-individual consistency in the face of inter-personal discrepancies is important to achieve harmony between past, present and future experiences. Such harmony contributes to personal growth.

Stages in constructivist theory and the rejection of ontology

« 11 » Why is it difficult to understand the rejection of ontology? Even when one is familiar with constructivism, it is so easy to use realist language. Perhaps this is because the idea of constructivism as an explanation of the origin of cognition is expressed with different emphases that I suggest are like stages of ontogenetic development? With each step a new more complex way of looking at the phenomena is implied (Gash 2014a, 2018). In the first stage, Jean Piaget's constructivism was introduced initially in textbooks in the United States as an interaction between individual and environment with little attention to philosophical detail (e.g., Kohlberg 1969). In the second stage, a higher complexity was achieved when von Glasersfeld (1974) introduced RC to move beyond "construction as resulting from interaction." Von Glasersfeld used the word "radical" to signal the break between con-

2

structivism and traditional epistemological approaches that were concerned with "that mysterious process of cognition that is supposed to adapt our knowledge to things as they are in an independent outside 'reality'" (Glasersfeld 1974: 6).

« 12 » Whereas in the second stage, von Glasersfeld emphasized the central importance of an individual's construction, in the third stage, there was a shift of emphasis in which social constructivists emphasized the importance of the social conditions that influence knowing. The social constructivists were influenced by Lev Vygotsky's (1978) work, which began, like Piaget's own work, in the 1920s. Seymour Pappert's (1991) social constructionist work emphasized the importance of collaborative making in class. From a radical constructivist perspective, it is important to note that cultural and social conditions must always depend on the individual's interpretation of this social context. Without this caveat, references to social conditions are interpreted as claims for the objectivity of the social (Gash 2014b: §9). Since the 1970s, constructivist ideas have spread from educational applications, particularly in mathematics and science curricula, to other domains, including philosophy, psychology and artificial intelligence.

« 13 » It is striking how the rejection of ontology implied by key point (c) above in §10 was emphasized repeatedly but has not filtered into the mainstream. Perhaps, as was indicated above, this is because the construction of external objects is achieved prior to language, and language assumes a stable environment. Von Glasersfeld was not alone in insisting on this point. Other thinkers such as Bateson had been extremely clear about the illusion of ontology, and that all experience is subjective (see for example Bateson 1979: 25ff). Dewey (1960), too, portrayed ideas as results of operations, so again, knowing is a consequence of experience, just like his portrayal of religious experience as results arising in processes of living that open new perspectives (Dewey 1934). However, where Dewey emphasized processes and the changing forms of knowing, von Glasersfeld was more concerned with highlighting that what we know is limited as a construction from experience. Maturana (1988), like Dewey, emphasized that we do not know whether something we

observe is an illusion – until after the event. Von Glasersfeld appreciated the discord of ontology's rejection and spoke in terms of the implications for traditional epistemology in this way:

> 66 Revision may, indeed, be too gentle a word for the kind of reorganization of ideas which, I believe, is indispensable for an understanding of the theory of knowledge which Piaget's constructivist formulations entail. 99 (Glasersfeld 1974: 2)

The constraints on constructions, relativism avoided

« 14 » Examining constructivism from different perspectives allows additional insights into the theory. Alexander Riegler (2001b), outlining RC, emphasized that reality construction cannot be arbitrary; rather, the mutual interdependencies in the network of experiences canalize reality construction. This emphasizes an important feature of RC by explaining the constraints on emerging possibilities, whether mental or evolutionary. Further, RC cannot be accused of the type of relativism where "anything goes." For example, von Glasersfeld described both the essential role of science in knowing and science's fallibility that leads inevitably to the need to continually modify our constructions when they are found wanting:

> 66 We are constantly reminded that the world we live in is not quite the world we would like and that there is, indeed, a hard and unforgiving reality with which we have to cope. 99 (Glasersfeld 1983: 5)

« 15 » Von Glasersfeld (2007) emphasized that it is regularities in experience that are established with scientific methodologies. Maturana provided an outline of what was involved in scientific methodology:

> 66 […] science as a domain of explanations and statements arises in the praxis of scientists through the application of the criterion of validation of explanations […] 99 (Maturana 1988: 9)

So, despite the variety of possible constructions that may arise through slightly different procedures, each construction must stand the test of viability through replication, which, of course, provides poten-

tial variability. As von Glasersfeld (2007) described, once a useful regularity has been observed, it becomes established and difficult to dislodge, with alternatives disregarded or suppressed. Indeed, an external environment could be described as a paradigm for thinking about an apparent reality that speeds things up for the individual. However, "[t]he bad side of this is that this shortcut also limits our way of thinking and problem solving" (Riegler 1998: 39).

Gaps, surprises and the mystery of the origin of new ideas

« 16 » If we agree that our points of view arise from our different histories, or in Maturana's terms, differences arise in different consensual communities, then the origins of these points of view can be explored as ways of understanding the difference. This is an ethical consequence of appreciating that our understandings are constructed and there may be other ways of understanding any phenomenon. In some cases, differences can be discussed simply with reference to an agreed methodology. In other cases, differences may depend on deeply felt religious issues, for example views on abortion. When such issues are related to identity then it is likely to be difficult to resolve them. Indeed, understanding our feelings requires significant insight. It can be helpful to acknowledge the systemic quality of our psychological histories. Heinz von Foerster (1991) showed that there is a profoundly huge number of possible links between a machine's output and its internal states. For example, a machine with only four outputs and four inputs and two internal states can exhibit a very large number of different behaviours. In addition, problems with too many logical implications are practically unsolvable even by machines that take a logical approach (Riegler 2001a), so no wonder that people have such difficulty! This gives a stark model of the complexity of understanding hidden systemic feelings. Indeed, inferring why people behave the way they do often leads to trivializing human behaviour and applying one's own referential system to others (Riegler 2007a).

« 17 » Previously I used the idea of a gap to discuss spirituality, uncertainty and tolerance (Gash 2004). In the present case, the gap may be a window into an alterna-

3

4

tive apparent reality. The gaps we know are between what we expect and experience. As argued above, there cannot be gaps between what we know and an apparent reality. Rather the gaps arise because of different perspectives, so there is always the possibility of an enchanting new interpretation. The more enchanting, the more the opportunity for the mystical. It seems significant that these moments arise with the origins of new interpretations. What then is involved in the move from the novel to the mystical?

« 18 » Surprises are commonplace, so the unexpected events that lead to wonder are special and uncommon, more like Kuhnian paradigm changes. Have we lost our sense of wonder and its power to help us find personal balance? Poets and artists may construe their internal experiences slightly differently from others, and so present their representations of experience in novel ways. For example, forms of musical and artistic expression evolve and it may take time for the public to acknowledge the new forms. Some art schools teach their students to make the familiar strange (Modjeska 2012). I suggest that it is when the items in experience themselves change that awe is experienced. So, when there is a mismatch between experience and what is expected, gaps are experienced that reveal an inadequacy in previously constructed ways of organizing the experience. This inadequacy may be resolved by an idea that seems to come from nowhere into consciousness in the recursive reorganization of one's knowledge.

« 19 » During construction and reconstruction of ways of knowing there are moments described above as inspiring wonder or as epiphanies. Such moments are at the boundaries of mystical experience and hold the potential for the emergence of possibilities. They occur at the moment of achieving a new way of understanding. So, while constructivism is grounded in processes of validation and of assessing viability, at the moment of insight there is an interface with mystical experience. Where constructivists emphasize the epistemological limits of knowing and eschew ontology, in the next section the mystical tradition shows a similar caution while embracing the "reality of the infinite," acknowledging the descriptive limits of language.

Mystical experience

Concepts, gaps, language and wonder

« 20 » There is a broad variety of academic sources on the mystical tradition, including Evelyn Underhill's classic *Mysticism* and William James's *Varieties of Religious Experience.* In his review of the diverse literature, Jerome Gellman describes mysticism as a constellation of practices arising in different traditions that aimed at human transformation and gave this definition of mystical experience:

❝ A (purportedly) super sense-perceptual or sub sense-perceptual unitive experience granting acquaintance of realities or states of affairs that are of a kind not accessible by way of sense-perception, somatosensory modalities, or standard introspection. ❞ (Gellman 2017: Sect. 1.1)

« 21 » Gellman's (2017) review on mysticism summarizes topics philosophers discuss concerning mystical experience including the limiting role language plays in describing mystical experience. The approach taken in my article highlights the association between these language limits and the cognitive limits that were emphasized in the discussion above on constructivism. Topics that fit this focus include pure conscious events and ineffability, and research on each of these raise problems concerning the limits of constructed conceptual categories and the related limits of language. New concepts are constructed when experience does not match existing concepts. When gaps lead to major changes in concepts such as in Kuhnian paradigm changes, wonder emerges and one may use the word epiphany. Such moments occur at the interface between constructivism and mystical experience.

« 22 » An analysis of work on mystical experiences in general is beyond the scope of this article. Certain features of mystical experience, however, offer a way of discussing connections between some mystical experiences and constructivism. Gellman's analysis of mystical experiences includes those that are prior to conceptual categorization and others that transcend sense-perceptual experience. In addition, certain themes recur in Gellman that relate to con-

structivist descriptions of the process of thinking. One theme is the awareness of the limits of language to describe mystical experiences. Steven Katz (1992) shows an acute awareness of the complex relation between mysticism and language. Medieval mystic Meister Eckhart warned, for example, "If I have spoken of it, […] I have not spoken, for it is ineffable" (ibid: 3).

« 23 » A second related theme concerns the role of cognition in mystical experience. Perennialists propose that mystical experiences have commonalities across cultures and history (Gellman 2017: Sect. 4). Aldous Huxley's classic *The Perennial Philosophy* (Huxley 1945) is an example of this tradition. An alternative tradition in mystical scholarship maintains that one cannot have mystical experience without some concepts. This "constructivist" tradition in a strong form argues that a mystic's culture influences mystical experience and so perennialism is false (Gellman 2017: Sect. 6). Huxley, writing about his experiences with drugs in *The Doors of Perception* (1954), drew attention to the links between mystical experiences and the effects of LSD and mescaline that interfere with normal cognitive processing. The front page of Huxley's book has the following apt quote from William Blake: "If the doors of perception were cleansed, everything will appear to man as it is, infinite." Another feature of mystical experience involving cognition concerns whether there are pure conscious events (PCE), that is, experiences without cognitive form that are defined as: "allegedly an 'emptying out' by a subject of all experiential content and phenomenological qualities, including concepts, thoughts, sense perception, and sensuous images" (Gellman 2017: Sect. 4). From the mystical perspective, these experiences occur following a fading or removal of conceptual categories: "union with God normally occurs only when all the empirical contents of mind have been got rid of" (Stace 1961: 87f). From the constructivist perspective something like an awareness of PCEs may occur when gaps are noticed, and a window is momentarily opened to something other, with potentially significant psychological consequences.

Experiences beyond language

« 24 » While some scholars like Robert Forman (1990) argue for PCEs, Gellman (2017: Sect. 6.1) provides a set of arguments against such experiences, including the difficulty of describing them. Further, Richard Jones (2016) has indicated that as introvertive internal mystical experiences, PCEs are transitory and easily disrupted. Perhaps they are beyond description in time but allow temporary access to unconscious systemic memory or other cognitive reconfigurations? As such and as described above, they may play a role in a constructivist perspective when new personal structures arise when previous constructions are inadequate. This uncertainty provides an experience of the unknown and the emergence of a solution may provide a striking insight or epiphany. One of the key ideas in constructivism is about providing organizational coherence to experience. Novelty and wonder may accompany new experiences that challenge existing anticipatory structures. Even everyday experiences presented in new ways in artistic performance may allow individuals to see gaps between their existing ways of seeing and the phenomena experienced. These experiences are sometimes accompanied by an insight that one is becoming aware of something new in one's world. Susie Vrobel (2017) described this insight as occurring in a timeless moment where a novel awareness appears. Similar ideas were proposed in Arthur Koestler's book *The Act of Creation* (Koestler 1964). Experience of timelessness also characterizes aesthetic experiences, the sunset, the painting, that face, that wine, that symphony and so on.

« 25 » Time, however, may be needed to come to terms with experiences that require significant personal adjustment such as illness, death, the birth of a child or falling in love. In these cases, time may be needed to allow an individual to construct a new personal adjustment. There are feelings that a person wants to express for which the words have not yet been found. In a religious context, prayer may help such reconstruction, in a psychological context, Irving Sigel described how children's representations of events could be developed through appropriate open-ended questioning. These questions, called distancing strategies, were designed to help the children distance them-

selves from these events by building cognitive representations (Sigel & Cocking 1977). That work was concerned with representing novel experiences by working with language in ways that helped capture the experience because of the gap between the experience and the words available to describe or explain it. The questions used to provoke distancing included asking children to talk about past events in terms of their origins and consequences, to help the children build up a more complete understanding. In terms of the relation between the processes of personal construction and mysticism, what is clear is that certain events, including, for example, traumatic ones, take time before their complex emotions can be calmed in words.

« 26 » What characterizes movement from the novel and surprise or wonder – to the mystical? Could it be that there is a scale from the novel to the mystical because some experiences have a fascination as they open new understandings of ourselves and our place in our world? It is noteworthy in this context that cultures across the world engage in practices that stimulate wonder in special places: initiation ceremonies are one group of such activities, and religious ceremonies another group. Each type of ceremony has its own ways of providing and identifying a context and engaging the participants to concentrate attention on the "present." There is no doubt that the experiences involved prioritize the private and personal, and in some cases are designed simply to avoid being disturbed. In contemporary society such deep concentration can be disturbed in so many ways. Smoking disturbs the appreciation of fine food and wine. Mobile phones interfere with the appreciation of films, theatre, concerts and religious ceremonies. In describing the 1968 Wenner-Gren Symposium, Mary Catherine Bateson (1972) mentioned how Gregory Bateson participated in a discussion about Native Americans not wanting their religious ceremonies photographed. There are several reasons for this reticence. A simple one is that some indigenous people are aware of and concerned about stereotyping[1]

1| See "Photographing native American cultures" by Colleen Walsh at https://news.harvard.edu/gazette/story/2016/05/photographer-adds-clarity-insight-to-contemporary-native-american

that here implies observers' exclusion from the ceremony. A deeper reason is that the intrusion may disrupt the participants in their devotion, as they want their moments of private participation to remain private. Intimate moments are personal; they are not for sharing with the wider public and deep uninterrupted personal involvement is part of the sacred experience.

« 27 » Gellman's (2017) synopsis of scholarship on mysticism provides ways of appreciating how the non-rational mystical traditions bridge the gap between experience and language. Does it make sense to try to talk about God? How might one talk about God to a non-believer? In Section 2 of Gellman's article discussing the categories of mystical experience, much is devoted to God and what can be said or not said about God in various cultural traditions. A recurring issue is to avoid using words to capture an experience that is beyond description. He also discusses attributes of mystical experiences that include whether such experiences can be described, if they are paradoxical and indeed, if there exist pure conscious events that defy description. In the constructivist context, it seems that some mystical experiences are pre-linguistic, that is, arising before they can be grasped in language, or they are simply not describable. So, leaving aside the theological connotations, what role do these experiences play in consciousness? There is agreement that these experiences are beyond ordinary description. Being novel, they are experiences that potentially facilitate the emergence of new cognitive structures.

« 28 » There are different but connected suggestions concerning the significance of mystical experiences. It may be that these experiences cut through conscious awareness and rational thinking and reveal something already known unconsciously or systemically, but hidden deep in memory. Or is it that:

> [...] the nature of matters such as prayer, religion, and the like is most evident at moments of change – at moments the Buddhists call Enlightenment. And while Enlightenment may involve many sorts of experience, I think it important here to notice how often Enlightenment is a sudden realization of the biological nature of the world in which we live. It is a sudden discovery or realization of life. (Bateson & Bateson 1987: 74)

5

« 29 » It may be an important part of such private moments that they are potentially pre- or non-linguistic. On this theme, Bateson and Bateson (1987) discussed what cannot be said. They thought it was important not to know certain things because concentrating on them may damage the whole. In everyday life much is communicated without words, sometimes epitomized in "that smile, that look." Discussing the issue of transubstantiation in the sacrament of Holy Communion, Bateson (1991: 267) claimed that it was a mistake to try to adopt either the Catholic or the Protestant position on the host. It was neither bread nor the flesh of Christ. The issue is about how metaphor works, the relation between object and symbol and fundamentally about how the mind puts the elements together, guarding the implicit complexity. Perhaps the key issue concerns the possibility of personal growth and making new connections in a context where existing categories are held in abeyance or do not fit.

« 30 » Is it because the mystical is not rational that it may often appear in the domain of what is not said? However, wonder about the "not-said" is not necessarily mystical. In the film *Shawshank Redemption*, when the imprisoned banker Andy Dufresne plays Mozart on the prison loudspeaker system, the listeners are transfixed. The experience of the music was more important than the description of its effects, but we would not call the experience mystical. When individuals cannot make sense of an experience, either existing heuristics are used again as the best option or a new model of understanding must be constructed. Trying to develop a model by calculating all the options will lead to potentially damaging rumination for humans and possibly render machines inactive or with impractically complex calculations (Riegler 2007b).

« 31 » James (1902: 380) described four hallmarks of the mystic state: ineffability, noetic quality, transiency, and passivity. One form of mystical experience and divine intervention that is transient and experienced passively is divine grace. Underhill explains grace as

❝ the Second Person of the Christian Trinity [...] the redemptive, 'fount of mercy,' the medium by which Grace, the free gift of transcendental life, reaches and vivifies human nature: 'permeates it'. ❞ (Underhill 1911: 112)

Psychological growth and conceptual restructuring

« 32 » In Gash & Mary Shine Thompson (2002) we proposed that divine grace might be a way of talking about moving up a level in Bateson's levels of learning. Bateson described the mind as an aggregate of interacting parts or components that may be triggered by difference. Mental process requires circular (or more complex) chains of determination, and the effects of difference are to be regarded as transformations of events that preceded them. Finally, the description and classification of these processes of transformation disclose a hierarchy of logical types immanent in the phenomena (Bateson & Bateson 1987: 18f). Level one involved selecting from a set of alternatives. Level two was learning contextual specifications for these alternatives. Learning stereotypes was an example I used in previous work (Gash 2003). Moving up a level implies noticing a new context and so appreciating a more social set of connections and implications for some experience. So, learning contexts implies changing as individuals in our social groups because we are defined by our behaviours in the groups to which we belong. Is the difference between wonder and mystical insight related to its power to transform the individual? Our social conflicts provide opportunities to grow and decide whether to conserve our past or to change and embrace a new way of working in the future. Empowerment and self-actualization follow from decisions that bring harmony to our ways of relating to our experience.

« 33 » A hallmark of psychological maturity is making wise decisions in one's life. The sacraments specified by the Church all refer to moments where decisions are made about choosing directions in an individual's life. No wonder then that mystical experiences were sought after, indeed are sought after, in special places, with special rituals about issues of such profound concern. Underhill describes two aspects to the mystical experience; one is related to the consciousness of Absolute Perfection and the other to the effects of this experience. In the former experience the self is commonly considered to be absorbed into God, whereas in the associated second type of experience the mystic engages in the Mystic Way to become a fuller person. Even great poetry and music can bring an enhanced sense of vitality (Underhill 1911: 20). So, in mystical experiences there can be a liberation of the imagination when the gap is noticed, so providing an escape from an old pattern at the moment of constructing or choosing a new one. In the interpersonal arena, such liberation offers systemic affirmation:

❝ What will it take to react to interfaces in more complex ways? At the very least, it requires ways of seeing that affirm our own complexity and the systemic complexity of the other and that propose the possibility that they might together constitute an inclusive system, with a common network of mind and elements of the necessarily mysterious. Such a perception of both self and other is the affirmation of the sacred. ❞ (Bateson & Bateson 1987: 176)

« 34 » Another possibility is that the mystical experience sought in meditation with its non-rational union with the Universe or God, depending on the chosen consensual community, is linked to possibilities, connections and personal growth as in the following recommendation:

❝ Become at least aware of, if you cannot 'know,' the larger, truer self: that root and depth of spirit, as St. François de Sales calls it, from which intellect and feeling grow as fingers from the palm of the hand – that free creative self which constitutes your true life, as distinguished from the scrap of consciousness which is its servant. ❞ Underhill (1911: 32)

« 35 » Experiences that expose possibilities offer a way of overcoming the complexity in systemic choice (Riegler 1998). Their value lies in their potential for re-establishing balance, whether in the personal domain with meditation, or in the social shared domains of cultural or religious events. Dewey (1934) argued that considering our social cultural and ecological connections was a religious matter and that removing religion from these experiences would strengthen our responsibility to ourselves and to nature. He saw religious quality in the effect of an experience rather

than in the cause, so, "whatever introduces genuine perspective is religious, not that religion is something that introduces it" (Dewey 1934: 24). My view is that epiphanies are due to gaps that allow reconfiguration of the way individuals see things, see themselves and relate socially.

Synergies: Constructivism and mystical experience

« 36 »   Von Glasersfeld (1995) focused on the rational, however, he thought that RC's rejection of metaphysics would invite attention to the mystical:

> Radical constructivism is intended as a model of rational knowing, not as a metaphysics that attempts to describe a real world. I believe that its effort to delimit the purview of reason is one of its virtues, precisely because this limitation accentuates the need to contemplate the realm of the mystic's wisdom. (Glasersfeld 1995: 24)[2]

« 37 »   However, in his writings he remained focused on RC, not on the mystics' wisdom. Such wisdom is difficult to describe, and mystical scholarship continues to debate whether it can be put into words. In the process of coming to know, gaps appear. Whether the knowing is physical or social, the gaps appear at moments when the existing constructed ways of knowing are recognized to be in some way inadequate. At moments when viable possibilities have not appeared, then meditation or contemplation of the gap might facilitate the emergence of an insight, which might be deemed wonderful. As an example of synergy between the mystical and the constructivist approaches, Michelo DelMonte (2012) and DelMonte and Vincent Kenny (1985) have proposed meditation as a way of helping therapists deal with uncertainties while supporting their clients emotionally: meditation here being a way of holding judgment in abeyance to allow the emergence of various interpretations of clients' dilemmas.

« 38 »   In earlier sections of the article, gaps have been highlighted as moments when existing concepts do not match expe-

rience. Such moments share features with mystical pure conscious experiences. For example, in his discussion of psychotherapy, DelMonte (ibid.) outlined a form of meditation practice in which concentration leads to a falling away of contrasts, leaving the mind with nothing to construe because thought depends on noticing differences. So, constructivist psychotherapy may act as a catalyst for the development of a synergy between constructivism and mystical experience.

Conclusion

« 39 »   Constructivism emphasizes that the epistemological limits of what we may know relies on scientific procedures to guarantee viability. The mystical tradition emphasizes the limits of language in describing the infinite and worships the power of the unknowable infinite. Gaps between what is expected and what is experienced play a key role in constructivists' knowing. At such moments, when past concepts do not work, individuals experiencing this unknown are at the border of mystical experience. Resolution of the uncertainty may produce a profound insight and be accompanied by wonder or an epiphany. Von Glasersfeld viewed constructivist and mystical knowing as belonging to different domains, he suggested also that being aware of the epistemological limits of our constructions should invite contemplation of mystical wisdom. I suggested that the difference between viable knowing and mystical knowing may be like the difference between different types of geometries with different assumptions. How might constructivist problem solvers benefit from this insight? Insistence on the importance of assessing viability would help. This requires assessing new ideas carefully; they appear and need to be checked.

« 40 »   In this article we have seen that gaps that may be construed as dealing with the unexpected may bring the knower to an interface with mystical experience.. So, in the search for viability at moments of construction or reconstruction, the unknown is present as new ideas mysteriously appear. Maturana (1988) has put this well, drawing our attention to how our everyday experi-

ences come from nowhere. Normally we do not notice this, but we do when something surprises us. These new ideas that appear out of the unknown may or may not be viable.

« 41 »   Further work should be done on belief, especially because ideas that appear out of nowhere to explain unexpected experiences may be misleading heuristics. In this regard, Daniel Kahneman (2012) has described how fast thinking uses shortcuts to explain everyday experience; it is only when these shortcuts do not work that one becomes aware that more careful analysis is needed. Fast thinking, for example, tends not take account of the representativeness of an experience, nor of how the availability of answers influences their acceptability. Shortcuts like this play their role in social judgments like the anti-vaccination movement (Head, Wind-Mozley & Flegg 2017).[3] They also play their role in making political judgments, where the complexity of anticipating outcomes can stretch the limits of human problem solving (Riegler 2001c).

« 42 »   Finally, the mystical and constructivist traditions each emphasize personal growth and non-duality:

> The self is always directed toward something beyond itself and so its own unification depends upon the idea of the integration of the shifting scenes of the world into that imaginative totality we call the Universe. (Dewey 1934: 19)

Acknowledgements

2| The author would like to thank an anonymous reviewer for drawing his attention to this quote.

3| See also the UNICEF press release "Over 20 million children worldwide missed out on measles vaccine annually in past 8 years, creating a pathway to current global outbreaks" available at: https://www.unicef.org/press-releases/over-20-million-children-worldwide-missed-out-measles-vaccine-annually-past-8-years

{ **HUGH GASH**

obtained his doctorate at State University at Buffalo in 1974 with a thesis on moral judgment. He was a post-doctoral researcher at the University of Georgia with Charles Smock where he met Ernst von Glasersfeld whose ideas had a major influence on his work. Hugh worked at St Patrick's College Dublin until 2010. He is an Emeritus Associate Professor in the School of Human Development in the Institute of Education in Dublin City University. Gash is a member of the International Institute for Advanced Studies in Systems Research and Cybernetics. He has published extensively on applications of constructivism, details of which may be found on his website https://sites.google.com/dcu.ie/hughgashwebpage

References

Bateson G. (1979) Mind and nature: A necessary unity. New York, Dutton.

Bateson G. (1991) Sacred unity: Further steps to an ecology of mind. Edited by R. E. A Donaldson. Harper Collins, New York.

Bateson G. & Bateson M. C. (1987) Angels fear: An investigation into the nature and meaning of the sacred. London, Rider.

Bateson M. C. (1972) Our own metaphor: A personal account of a conference on the effects of conscious purpose on human adaptation. Alfred A. Knopf, New York.

Cardellini L. & Glasersfeld E. von (2006) The foundations of radical constructivism: An interview with Ernst von Glasersfeld. Foundations of Chemistry 8: 177–187. ► https://cepa.info/1558

DelMonte M. M. (2012) Mindfulness and awareness: Constructivist, psychodynamic and Eastern perspectives. International Journal of Mental Health and Addiction 10(3): 311–329.

DelMonte M. M. & Kenny V. (1985) Models of meditation. British Journal of Psychotherapy 1(3): 197–214.

Dewey J. (1934) A common faith. Yale University Press, Clinton MA.

Dewey J. (1960) The quest for certainty. Capricorn, New York. Originally published in 1929.

Dewey J. & Bentley A. (1949) Knowing and the known. Beacon Press, Boston.

Foerster H. von (1991) Through the eyes of the other. In: Steier F. (ed.) Research and reflexivity. Sage, London: 63–75. ► https://cepa.info/1729

Forman R. K. C. (1990) Eckhart, Gezucken, and the ground of the soul. In: Forman R. K. C. (ed.) The problem of pure consciousness: Mysticism and philosophy. Oxford University Press: New York: 98–121.

Gash H. (1993) Stereotyping and constructivism: Learning to be men and women. Cybernetics and Human Knowing 1(4): 43–50. ► https://cepa.info/5525

Gash H. (2004) Spirituality, uncertainty and tolerance. In: Lasker G. E. & K. Hiwaki. (eds.) Personal and spiritual development in the world of cultural diversity. Volume I. International Institute for Advanced Studies, Windsor ON: 63–68. ► https://cepa.info/5522

Gash H. (2014a) Constructing constructivism. Constructivist Foundations 9(3): 302–310. ► https://constructivist.info/9/3/302

Gash H. (2014b) Author's response: Perspectives on RC and teaching. Constructivist Foundations 9(3): 321–327. ► https://constructivist.info/9/3/321

Gash H. (2018) Constructivism and mysticism. In: Lasker G. E. & Hiwaki K. (eds.) Personal and spiritual development in the world of cultural diversity. Volume XV. International Institute for Advanced Studies: Windsor ON: 7–11. ► https://cepa.info/5523

Gash H. & Shine Thompson M. (2002) Constructivism and Celtic spirituality. In: Lasker G. E. (ed.) Advances in Sociocybernetics and Human Development. Volume X. International Institute for Advanced Studies: Windsor ON: 113–118. ► https://cepa.info/5521

Gellman J. (2017) Mysticism. In: Zalta N. (ed.) The Stanford encyclopedia of philosophy. https://plato.stanford.edu/entries/mysticism

Glasersfeld E. von (1962) First draft of an English input procedure for mechanical translation. Methodos 14(54): 47–79. ► https://cepa.info/1295

Glasersfeld E. von (1969) Semantics and the syntactic classification of words. In: Proceedings of the third international conference on computational linguistics. ICCL, Sanga S'by. ► https://cepa.info/1308

Glasersfeld E. von (1974) Piaget and the radical constructivist epistemology. In: Smock C. D. & Glasersfeld E. von (eds.) Epistemology and education. Follow Through Publications, Athens GA: 1–24. ► https://cepa.info/1324

Glasersfeld E. von (1983) Learning as constructive activity. In: Bergeron J. C. & Herscovics N. (ed.) Proceedings of the 5th Annual Meeting of the North American Group of Psychology in Mathematics Education, Volume 1. PME-NA, Montreal: 41–101. ► https://cepa.info/1373

Glasersfeld E. von (1995) Radical constructivism: A way of knowing and learning. Falmer Press, London. ► https://cepa.info/1462

8

Glasersfeld E. von (2002) The construction of knowledge. In: Schnitman D. F. & Schnitman J. (eds.) New paradigms, culture, and subjectivity. Hampton Press, Cresskill NJ: 83–92. Spanish original published in 1994. ► https://cepa.info/1571

Glasersfeld E. von (2007) The logic of scientific fallibility. In: Glasersfeld E. von (ed.) Key works in radical constructivism (edited by Marie Larochelle). Sense Publishers, Rotterdam: 119–128. Spanish original published in 1988. ► https://cepa.info/1567

Head M. G., Wind-Mozley M. & Flegg P. J. (2017) Inadvisable anti-vaccination sentiment: Human Papilloma Virus immunisation falsely under the microscope. NPJ Vaccines 2(1): 6. https://www.nature.com/articles/s41541-017-0004-x

Huxley A. (1945) The perennial philosophy. Harper & Bros, New York.

Huxley A. (1954) The doors of perception: Heaven and hell. Chatto & Windus, New York.

James W. (1902) The varieties of religious experience (Gifford Lectures). Longmans Green & Co: London.

Jones R. H. (2016) Philosophy of mysticism. State University Press of New York: Albany.

Kahneman D. (2012) Thinking, fast and slow. Penguin, London.

Katz S. (1992) Mystical speech and mystical meaning. In: Katz S. T. (ed.) Mysticism and language. Oxford University Press, New York: 3–41.

Koestler A. (1964) The act of creation. Penguin, New York.

Kohlberg L. (1969) Stage and sequence: The cognitive-developmental approach to socialization. In: Goslin D. A. (ed.) Handbook of socialization theory and research. Rand McNally, Chicago: 347–480.

Maturana H. R. (1988) Reality: The search for objectivity or the quest for a compelling argument. Irish Journal of Psychology 9(1): 25–82. ► https://cepa.info/598

Modjeska D. (2012) The mountain. Random House: Sydney.

Pappert S. (1991) Situating constructionism. In: Harel I. & Pappert S. (eds.) Constructionism. Ablex Publishing, Norwood NJ: 13–27.

Piaget J. (1968) Six psychological studies. Random House, New York.

Poerksen B. (2004) "We can never know what goes on in somebody's head": Ernst von Glasersfeld on truth and viability, language and knowledge, and the premises of constructivist education. Cybernetics and Systems 35: 379–398. ► https://cepa.info/4007

Riegler A. (1998) The end of science: Can we overcome cognitive limitations? Evolution & Cognition 4(1): 37–50.

Riegler A. (2001a) The cognitive ratchet: The ratchet effect as a fundamental principle in evolution and cognition. Cybernetics and Systems 32(3–4): 411–427. ► https://cepa.info/4210

Riegler A. (2001b) Towards a radical constructivist understanding of science. Foundations of Science 6(1–3): 1–30. ► https://cepa.info/1860

Riegler A. (2001c) The role of anticipation in cognition. In: Dubois D. M. (ed.) Computing anticipatory systems. Proceedings of the American Institute of Physics 573: 534–541. ► https://cepa.info/4211

Riegler A. (2007a) The impact of the interdisciplinary radical constructivist framework on cognitive research. In: Vanchevsky M. A. (ed.) Focus on cognitive psychology research. Nova Science Publishers, Hauppauge NY: 153–170. ► https://cepa.info/1778

Riegler A. (2007b) Superstition in the machine. In: Butz M. V., Sigaud O., Pezzulo G. & Baldassarre G. (eds.) Anticipatory behavior in adaptive learning systems: From brains to individual and social behavior. Lecture Notes in Artificial Intelligence. Springer, New York: 57–72. ► https://cepa.info/4214

Scott M. (2017) Religious language. In: Zalta E. N. (ed.) The Stanford encyclopedia of philosophy. https://plato.stanford.edu/archives/win2017/entries/religious-language/

Sigel I. E. & Cocking R. R. (1977) Cognitive development from childhood to adolescence: A constructivist perspective. Holt, Reinhart, and Winston, New York.

Stace W. T. (1961) Mysticism and philosophy. Macmillan, London. http://wudhi.azurewebsites.net/mysticism/ws/wts-mp%20-%202.htm

Underhill E. (1911) Mysticism: A study in nature and development of spiritual consciousness. Christian Classics Ethereal Library, Grand Rapids MI. http://www.ccel.org/ccel/underhill/mysticism.pdf

Vico G. (1988) On the ancient wisdom of the Italians. Translated with an introduction and notes by L. M. Palmer. Cornell University Press, Ithaca. Latin original published in 1710.

Vrobel S. (2017) The path to timelessness: Insight, assignment conditions and strong anticipation. Progress in Biophysics and Molecular Biology 131: 162–170.

Vygotsky L. S. (1978) Mind in society: The development of higher psychological processes. Harvard University Press, Cambridge MA.

9