

# ***In Focus... In God's Image and Presence:*** **Some Notes Based on an Enactive View of Human Knowing**

Thomas Kieren

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I was recently at the Edmonton Folk Music festival and listened to Kathy Mattea sing a song which she calls "What if God were one of us?" I think any practicing Christian such as myself or a person of any deliberate spiritual persuasion would find this song interesting. In one small part of it she raises the question of the consequences of observing God in our human world. One consequence of noticing the presence of God in one's world would be that one would necessarily have to face up to the question of believing and all that would entail.

Mattea's song reminded me of two questions of faith: What does it mean to be made or to live in the Image of God? What does it mean to be in God's presence, and in what ways might we see or recognize that presence and live in it? The purpose of this informal essay (these notes) is to look at these two issues (which for me are issues of faith) from the point of view of concepts and consequences of the work I have done for many years in studying human knowing, particularly mathematics knowing. The many people with whom I have worked over the last 10 or 15 years and some of the authors we have studied collect these concepts under the rubric of an "enactive perspective." At its roots, this perspective is scientific and biological. It is certainly not a theological perspective. But to paraphrase an aphorism attributed to Einstein: science without religious or spiritual thought is lame; religious or spiritual thought without scientific thought is blind. Perhaps what I have to say will add perspective to what you already know and believe.

*I am not writing this as a piece that is in any way rigorous.* I will not be giving the usual citations or references. I will also not try to offer scientific backing for the ideas or the implications I am making here. I certainly will not be writing or acting in a theologically sophisticated way. This essay is based on many years of work studying and inter-acting in my own systematic way with many persons doing mathematics. And what I say is simply a reflection upon the fact that

my work is not disconnected from who I am or from who I am as a religious or spiritual person.

Even were I to provide you with scientifically or theologically rigorous statements they would be statements I would choose to make from a view which Maturana calls objectivity-in-parentheses. In making them I am not trying to compel you to accept them because they must be necessarily and universally true in the sense that they tell you about the way the world or God really is. Yet they are not subjective. However, they are necessarily incomplete in at least two senses: They are *multiversally* incomplete in that there are other ways of thinking about or explaining the phenomena which are not accounted for and are likely not even anticipated by these views; that is, they are part of a multiversal rather than a universal accounting of things. Secondly, they are *occasionally* incomplete. Even for me as I think or say or write them or for others as they read them, they hold the possibility of recursively occasioning other thoughts which will necessarily "re-write" these.

With these caveats, I turn now to the substance of what I want to say—first to concepts that I am drawing from my enactive work on knowing and then to attempts to see what implications that thinking has for the questions I raise above.

Some aspects of an enactive view of knowing

At the heart of what I have to say is the view that knowing occurs in action in the temporal "now" at once being determined by one's lived history and providing possibilities for future occasions for knowing. In such knowing humans express their nature as auto-poietic in the sense that they necessarily transform "inputs" from the world of their existence for their own use and are closed in that operational sense. In engaging in both developing this point of view and in trying to see its consequences for learning and teaching particularly in the area of mathematics, I feel I have been doing what Varela would call "laying down the path in walking". Of course I have not

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laid down this path alone or unaided. My guides and companions have been many<sup>1</sup> but that is another story.

More to the point of this essay, such knowing in action is identified with doing. As suggested above, such doing is always determined by the structure and lived history of the person. By the same token, that structure is necessarily plastic and in doing one is always changing that structure. Such changing of one's structure can be observed as learning. Hence knowing, doing, and learning are identified. Since failure to either act or change is concomitant with ceasing to be the organism one is, knowing, doing, learning, and living itself are identified. Perhaps it is this identification that is at the heart of the "elan vital" of humans as well as other living things.

This view suggests that there is no mind/body dualism. Knowing is *fully embodied*. Such embodied knowing has many dynamics which occur all-at-once. There are the internal structural dynamics of the person whereby he enacts a world and is changed by such enaction. There are social/inter-actional dynamics whereby in knowing one is observed to be inter-acting with the world around one and with others in it. This coupling with others and other-ness can be observed to have a conversational dynamic. The nature of the conversation (and one's participation in it) is determined by the structure and lived history of the individual while at the same time that structure is being changed by participating in the conversation. Thus we say that knowing is neither an adequate representation of a pre-given "world," nor is it simply an act of creating a world for oneself. While the knowing/doing is determined by the person, it is also co-determined by the other/otherness with which that knowing occurs. Thus knowing is neither caused by the world nor does it simply emerge from the structure of the person. It is *coemergent*. Another dynamic of knowing is a cultural one. That is, in doing/knowing one is participating in or is embodied in both contemporary and historical practices of the communities in which one exists. If such knowing is not caused by the world, but coemerges with it, how does the world come to influence our actions, our structures, indeed who we are? For example, in watching children working on a mathematical task using some materials or a computer world an observer might say, "Oh that action pattern by the child was 'occasioned' by the materials." What is meant by

this comment? We say the knowing/doing of the person is occasioned by some feature of the other or otherness when the observer sees the action in a way that is relatable to the feature or in the presence in some way of the feature, and when the observer sees the person select or take up that feature and in some way modify it for its own use. Perhaps this occasioning is even clearer when one observes an adult interacting with a young child using language. Suppose one notices that the child uses a word or phrase that the adult has used. It is clear that the child would not use that particular word or phrase had she never experienced its use by others. But at the same time it is clear that the adult could not cause the child to use the word or phrase, and it is easy to see that the child is using the word or phrase in a way that reflects both her own capability/structure and her own intents.

The diagram below is taken from the work of a colleague of mine, Elaine Simmt. She devised the diagram just to show how the knowing/doing of an individual (I) arises in inter-action with or can be observed to be occasioned by others or otherness (O).

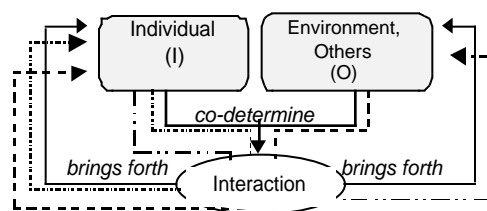


Figure 1. Model for observing knowing in action.

There are many features of this diagram which show the consequences of thinking about knowing in enactive terms. First one sees that the interaction itself is co-determined by the individual and the otherness. Following the path indicated by ----- shows how some feature of O is selected by I and is either consciously (Les Steffe would say through the process of self-regulation) or unconsciously (Steffe would say through the process of auto-regulation) reflected upon and transformed, thus also allowing for the change in I's structures, schemes and possibilities for action. This path illustrates the pathway by which O is observed to occasion knowing in I. Suppose we ignore the right hand side of the Simmt diagram—except if one is thinking of an external re-presentation constructed by I—and focus on the pathway indicated by ..... Here a person, through re-presenting her or his thinking in some way, provides a continuing occasion for her or

his own knowing and doing. Thus persons can be observed to occasion their own learning (and I am sure this occasioning also occurs in many forms which are not observable.)

There are two more features of this diagram that are germane to the discussion in this essay. The third path indicated by shows another feature of coemergence. When the individual acts, this action necessarily provides the possibility of an occasion for O to change as well. Thus in this model human knowing takes on a necessary ethical dimension in that one's knowing has implications for the environment in which it occurs and not just for the individual her or himself. Finally, if one thinks of this inter-action as occurring and re-occurring, then this inter-action allows for an increase in the cognitive domain or the domain of possible knowing in that both O and I change, allowing both new capabilities in I (changed structure) and new possibilities for future actions to be occasioned. Maturana and Varela have captured such knowing by saying that it occurs through an individual bringing forth a world of significance with others in a sphere of possibilities for action. Such actions can be of many types. With all living beings we share knowing as physical action—that which is necessary to live and survive. A second level of action is that which occurs with others. Maturana calls this a consensual coordination of actions or a linguistic action. Humans share this capability with many animals. Maturana claims that what is unique to human knowing occurs using the next level of knowing. He calls this languaging, which he sees as a consensual coordination of consensual coordinations of action. Such actions provide the basis for recursively making distinctions in languaging, which is central to human knowing actions. This recursivity not only implies that such acts of knowing use the “results” of previous acts of knowing as “input,” but that such distinctions also change one's structure or the way that one was able to know and act previously or the meaning of that previous knowing/doing.

As suggested previously, such languaging occurs in inter-action with others/otherness and through conversations with others that allow the cognitive domain to expand. Such knowing actions are governed by a proscriptive rather than a prescriptive logic. That is, whatever is not wrong is good enough or allowed. Further, such knowing

actions are necessarily—in humans at least—intertwined with emotioning, or the inclinations from one's structure or lived history to act in particular ways. Knowing actions affect emotioning as well.

We can summarize the above as follows: knowing is conceived not as a thing, an acquisition, or simply in terms of an external artifact; it is conceived as occurring in action in the temporal now. While that knowing action is determined by the structure of the individual knower, it is coemergent with the space, the otherness, and the knowing of others with which it occurs. Then from the point of view of an observer, this knowing occurs in an inter-action. Through that inter-action the knowing of an individual may be occasioned by their own previous knowing through various re-presentations, by elements in the environment or otherness, by the knowing acts of others or artifacts of them, and also by aspects of the culture (e.g., books) in which they exist and know. Such knowing is construed not as responding to the environment or even as problem solving *per se* (although both responses and problem solving may be observed); it is construed as bringing forth a world of significance. Humans' knowing, while it can and does involve physical action, occurs in languaging and occurs in an environment of languaging and distinctions in language. Knowing may be characterized as occurring in a coupling or a conversation which is necessarily affected by the nature of the structure of and knowing actions of the individual(s) in it; in turn, the conversation affects the knowing actions and hence the plastic structure of the individual.

To the extent that such propositions above explain or explicate knowing, it must be clear that knowing cannot be reduced to such propositions. As Goethe suggested long ago, theory is gray while life is green and vibrant. In applying such concepts to a discussion of our life in the image and presence of God, it is also important to know that such a discussion—even if I were to carefully elaborate all points (which I won't)—would necessarily be incomplete.

## Knowing God

### *The Image of God*

It is a tenet of Judeo-Christian faith that we humans are in some way created in the image of God. Since it is another tenet that God is a spirit or of a form other than us, the nature of this image cannot simply be a physical one such as portrayed by a mirror. Since knowing actions are determined by our biological organization and its structural

relationships as well as continually changed through our embodied knowing actions, what are the ways in which our being in the image of God affects the possibilities for our knowing? Mathematics gives us interesting metaphors for image. The first is that we are in a one-to-many relation with God and hence are in God's image space in that way. That is, we are in some specially defined pairing or relationship with God both as species and individually. This suggests one may ask about the inverse relation; that is, the relation that "maps" humans to God. This idea raises questions: Are there many such relations? Is such a relation (what we might observe as knowing God or living occasioned by that knowing) universal, or is it in some way unique to each person? That is, are we part of a large conversation with God, or is that conversation unique to each person, or both, or something else? A second metaphor for being in the image of God for me comes from thinking about the Mandelbrot set which is fractal in nature. You are likely familiar with pictures of this set which can be generated (but never completely) by iterating certain rather simple mathematical procedures and using particular representational rules to show the set and its boundary regions. For me what is important about this set is that it has a characteristic shape—I see it as a beetle. But when one zooms in and looks at various boundary areas, this fractal set is infinitely complex and varied. The mathematician and artist Peitgen has generated hundreds of beautiful images of the boundary regions of this set which portray it as having infinitely varied and rich characteristics. But across all levels of scale the whole of the Mandelbrot set reappears in all of these rich boundary regions; like all fractals it is self-similar across scale. Using one's imagination, one can think of humans as fractal filaments in the "image of God"—itself a fractal. Like Peitgen's fractal portraits, we each are rich and beautiful in our own way. But perhaps it is we humans who also can observe that God is also "in us" in the way that the beetle-like Mandelbrot set recurs in its own way in any fractal filament at any zoomed-in level of scale. This analogy is another way of thinking about being in God's image: not only are we paired with God in some special relation; we are a part of the infinite eternal "life" of God.

Furthermore, if we observe carefully in certain ways, we can sense God in us as well. Turning from these mathematical musings to one which is more directly related to the previous part of this paper, I consider what is unique about human structure which might illustrate our image nature. It is certainly not the ability to act intelligently or even to take linguistic actions; we share this characteristic with many other animals: their intelligent, usually physical, actions in a space in the temporal now can be observed to be quite sophisticated or at least complex. As suggested by the enactivist view on human knowing discussed above, such knowing occurs in languaging and particularly in the possibility with others to recursively and co-recursively make distinctions in such languaging. This observation raises the question: is it this unique human ability to make such recursive distinctions part of being in God's image? While all such knowing is undergirded by simpler embodied and even physical actions, we sometimes—in fact many times—lose track of or are blind to the physical inter-actions from which come our later distinctions in languaging. These distinctions suggest that we are uniquely equipped to know God. Through our various religious cultures and their artifacts (writings, icons, symbols), we may be occasioned to make such distinctions for ourselves and thus know of the presence of God. But in so doing we may be blind or even unaware of the total embodied relationship to God out of which such distinctions initially arose. Thus this unique ability to abstract provides us with sources both of insight and blindness. And of course simply having the capability or the structure to make such distinctions in no way causes humans to make distinctions that make us aware of God's presence—this phenomenon is shown over and over again in many historical religious narratives.

### *The presence of God*

Supposing that we have the structural characteristics and dynamics to know God, how can we come to live our lives in God's presence? As suggested in the enactivist view of knowing and living, to observe such knowing actions is necessarily to observe and specify the space in which they occur. That is, life does not occur simply through the characteristics of the living or

autopoietic thing. The living one (actor, knower) must exist in an energy-rich environment from which the living one selects and transforms elements; in that knowing action the living one is itself changed. With this view, one can observe for oneself that God is the heart of the energy-rich otherness with which and in which we exist. Of course, one need not be conscious of this idea to be alive, know, learn or do. And as part of our process of living one can be aware of the process of selection and transformation of elements from our environment (e.g., air) which do not “need” God for their explanation.

But what if one is conscious of the presence of God as the continuing potential occasioner for good acts of living particularly in languaging (even if we are blind to or have other explanations for the physical aspects of our living)? If we were aware of that occasioning and the inter-action with God through which it occurred, using the ideas portrayed in the Simmt model above, we could expand our domain of possibilities for our lives as well as the spiritual and cognitive domain in which we exist and bring forth with others. That is, the conscious awareness of God as an occasioner of at least certain of our actions changes the way in which we can live—for the better—both by changing us and our structures and by changing the space in which we live and our sense of responsibility of that space and for others in it.

If one takes the view suggested in the last paragraph, one could portray an individual human as being in some way in conversations with God on a number of critical aspects of our lives. Of course both biological and phenomenological analyses shows such conversations to be fragile in that they break down or no longer exist whenever one or the other sides of the conversation chooses to leave it or takes actions to break it. From our own lived histories we all have stories of such broken conversations that often lead to broken relationships which are never recovered. Both parties turn away. Hence regardless of the actions of one or the other, neither the conversation nor the relationship can be taken up again. This phenomenon leads to another feature of the presence of God, which one can observe through this lens of knowing in a particular way. In the histories of religions, in the writings and theologies of them, and in the experience of many of us, there are instances of individuals or groups breaking their conversation with God and their relationships with God through their actions and

words. Many times this break in relationship is permanent; in terms of our fractal metaphor, the person no longer experiences herself as part of the eternal life of God. If this broken relationship were with another human or even with something in our physical environment which we had destroyed in our actions, it may well be that no matter what she did, subsequently she could not get back into conversation with that other. If we observe God as the continuing occasioner for our lives, however, we can see that no matter what we did to break the conversation, returning to that relationship and that sense of being is possible. That potential does not mean that our previous actions held no consequences—in fact the model of knowing portrayed above suggests that whether we know it or not our knowing actions have the potential to occasion changes in the other or the otherness as well as changes in our own structures. It simply means that coming into a conversation which allows one to sense the presence of God or returning to that conversation is always possible. Of course all of these musings beg the question of how we come to or return to an observable knowing relationship with God? In an enactivist view of knowing such action is observed as embodied in the structural dynamics of a person, in the interactive social dynamics with others (in fact bringing forth any world of significance occurs with others), and in the cultural dynamics with the practices of current and historic communities all-at-once. Thus each of the embodiments provides opportunities for relationship. An individual can, through various personal practices (e.g. prayer, meditation, reflection, journaling...), come to be in or enrich one’s conversation with God. Second, bringing forth a world entails doing so with others—the presence of God in our lives often becomes most evident and rich in inter-action with or through the acts of others. Finally, engaging in the rituals and practices of a community of faith or engaging with the writings related to that community or other communities of faith are also sources of occasions which allow one to be in conversation with God. None of these are new suggestions. I make them just to show how they can be seen as fitting with the possibilities in human knowing. Finally, I remind the reader that these views on knowing, their implications for knowing God, and even suggestions for practice (even if I were to

elaborate them in detail) are incomplete. In part this incompleteness is both a scientific and a metaphysical necessity. There are other views and other practices that are not contemplated in this discussion. It simply is an invitation for you to think again about knowing, about knowing God, and about one's subsequent actions. This discussion await further thinking and action which

it might occasion. Such thoughts and actions will necessarily change these ideas for you, for the community in which you live, and even possibly for me.

To frame this essay, perhaps these notes on the possibility of knowing God's presence raise the other question: What if we were one with God?

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<sup>i</sup> This note gives a brief sketch of my guides and companions. (Of course they did not always realize that they were companions in the particular enterprise I am discussing here.) One source of my thinking about knowing has come through working with colleagues whose work is related to or grew out of radical constructivism in one way or another: Ernst von Glasersfeld, Les Steffe, Jere Confrey, Pat Thompson, and Paul Cobb come to mind. I have been deeply influenced by the writings of von Foerster; Maturana; Maturana and Varela; Varela, Thompson, and Rosch; and Northrup Frye. In that reading I have been supported and challenged by colleagues Al Olson, Sandy Dawson, and John Mason. Finally I have worked for many years on these ideas with Susan Pirie, Brent Davis, Dennis Sumara, David Reid, and Elaine Simmt. I'm not sure any of them would agree with the implications I draw here but I am indebted to them nonetheless. And as acknowledged earlier I have done this work at least knowing of and observing being occasioned by the existence of God in my life