

Research Note

The Brain and Religion: How Do They Relate to Each Other?

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Abstract: This essay evolves around three concepts: (i) brain, (ii) religion, and (iii) relationship. Much of current misunderstandings and disputes result from using these concepts in differing ways without making the differences clear. Therefore, the stage is set with the corresponding definitions and a brief summary of the present state of affairs as understood here. That will also indicate the comparatively narrow content-related limits of the present considerations, which, from an enlarged perspective, are embedded in much wider concerns. Having thus situated the area under discussion here, two current major issues will be dealt with: “Is the brain the generator of religion,” and “Is the brain sufficient as a guide for living a satisfactory life?” Present answers are, respectively “Scientifically speaking, more data are needed before coming to a definite conclusion,” and “No.” In making the relevant arguments and statements, I partly draw on my earlier work.

Keywords: brain, religion, relationship, cognition, spirituality

Brain

Whenever present in a living creature, the brain is the nervous system’s centre for sensing, processing, and issuing commands (e.g., Purves, Williams, White, & Mace, 2008). Despite considerable recent progress with understanding the brain’s functioning (and

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corresponding claims that all is now understood to the contrary), much about how a brain works remains a mystery. This concerns specifically, *how* exactly many thousands and even millions of neurons and synapses cooperate in complex ensembles. Another unsolved question concerns the processes leading to conscious and unconscious “awareness” and the actions derived there from.

The status of brain and of mind in regard to each other is another major bone of contention. Are the brain and the mind identical, partially distinct, or each “self-contained” but related in some yet unknown way? Differing answers include *dualism* (the mind exists independently of the brain), *materialism* (mental phenomena are identical to neuronal phenomena), and *idealism* (only mental phenomena exist). The position taken here is that we do not yet know enough to decide. Perhaps none of these possibilities provides the correct answer. To come to more definite answers (such as possibly *double-aspect monism*), we may need a path-breaking new insight comparable to the change from the geocentric to the heliocentric system, or that from classical physics to quantum mechanics and relativity theory.

Religion

As is well known, there exists no overarching, generally-accepted definition of *religion*. Part of the reason is that it can be defined at various levels of explanation, specifically the intraindividual, the interindividual, the intragroup and the intergroup level. Also, the definition can be by experts for use in academic discussions (the etic point of view) or by believers from their (emic) perspective for “internal” use. Ann Taves (2010) advocates paying more attention to the latter than done usually – I derive my definition as follows (Reich, 2009, pp.283-284):

Among more functional definitions, Ninian Smart’s (1989, pp. 11-21) seven dimensions of religion stand out: 1. the Practical (rituals and practices, including praying), 2. the Experiential (religious experience and emotions), 3. the Narrative (the story side of religion), 4. the Doctrinal (formal teachings which underpin the narrative/mythic parts of religion), 5. the Ethical (formal and moral laws), 6. the Social (institutional organisation of the religious community),

and 7. the Material (buildings, instruments of ritual, sacred places, works of religious art).

Concentrating more on individuals, Charles Glock (1962) posited five dimensions: 1. the Ideological (belief), 2. the Ritualistic (religious practice), 3. the Intellectual (religious knowledge), 4. the Experiential (religious feeling), and 5. the Consequential (effects of being religious). The empirical verification of Glock's dimensions does not yield undisputed results. The five dimensions are more evident when the persons studied belong to a religiously homogeneous, sophisticated group, rather than to a heterogeneous group of religious and non-religious individuals (Wulff, 1997, pp.212-219). Nevertheless, these dimensions are used in the present discussion as sufficiently representative.

Comparing both lists, one sees that Smart's dimension 1 (the Practical) corresponds to Glock's dimension 2, and 2 (the Experiential) to 4. Dimension 3 (the Narrative) presumably shares features with 3, 4 (the Doctrinal) with 1, and hopefully 5 (the Ethical) with 5.

Relationship

A relationship describes how two or more persons, things, events, etc. are connected/interact. Relations can differ from each other in rather obvious or *a contrario* in rather subtle ways. A major concern relates to the nature of this connection. Four examples (the first three from Reich, 2004, pp.97-98) may help to clarify this important point, which is rarely discussed in appropriate depth (Reich, 2002, ch. 5).

Functional music

While all composers work with *sounds*, their timbre, harmony, rhythm, volume, etc., as a rule their specific characteristics, are adapted to the given intended function (e.g., Reich 2002, pp.152-156, "Which music for which purpose?"). A lullaby or a military march, dance music or relaxing background music, etc., has each its proper "structure", its internal "logic", its specific relationships concerning these parameters, which the composer has to take into consideration if he/she wants to succeed. Most people recognise the pertinent characteristics together with their differences in regard to

other kinds of functional music, and react to a given piece of music in the intended way. This is because in each case the composer has found and applied the appropriate musical thought form/musical language/relationships between critical parameters.

Model building in physics

The models under discussion serve to simulate mathematically portions of physical reality, for instance the dynamics of a simple quantum mechanical spin system. More precisely, present-day models represent approximate justifications of the underlying conceptualisations by way of reproducing actual observations of natural phenomena (which goes beyond reducing empirical data into a handy format). Such models involve the functional dependencies, the relationships of relevant variables and parameters. Once more, the detailed choices of individual mathematical functions and any required combination thereof depend on the characteristics of the case at hand. The mathematician or the mathematical physicist concerned selects appropriate linear or non-linear functions, continuous or discontinuous (discrete) functions, decides whether to dichotomise a series of values per se continuous, arranges for feedback loops where appropriate, selects the right kind of statistics where applicable, and so on. If the portion of the physical reality considered is described by Newtonian physics, equations corresponding to that theory tradition will be used in the model. If quantum physics is involved, as in the dynamics of a spin system, then quantum functional dependencies are used. Above all, the author will carefully determine the partitioning, the dissecting of physical reality. (In the previous examples of music, the main “partitioning” was already implied in the task itself). The selected partitioning (e.g., at the microlevel or the macrolevel) may strongly influence the simulated events such as creating “mirage” events or rendering invisible “real” events. Comparing the performance of the modelled simulation with reality will show the goodness of the match achieved, and assess the underlying conceptualisation and the specific functions used.

Assessing the impact of healing relationships in clinical medicine

A system of healing relationships represents “a multidimensional, longitudinal, contextual and emergent process, in which emergence

refers to order that arises as an unsuspected surprise and novelty from within a complex adaptive process” (Miller, Crabtree, Duffy, Epstein & Stange, 2003, p.A81). “Healing relationships represent the physical, psychological (emotional and cognitive), social, cultural, and spiritual interactions that are intended, by at least one participant either retrospectively or prospectively – to facilitate healing” (p.A82). The task here is one of analysing, describing, and issuing guidelines about research on the assessment under discussion. Thus, as in the previous case, partitioning is a major issue. Critical features are brought out, such as the conditions for forming and maintaining healing relationships, their attributes, qualities, and types; types of relevant knowledge (personal, connected, material/objective); personal, contextual, and time-related outcomes, antecedents, and mediating processes. A specific partitioning issue concerns the duration of observation, especially when it comes to answering the question, “What is the experience of healing and how is the patient different as a result of healing?” (p.A85). To be considered are *immediate* effects (up to two weeks), *short-term* effects (from six weeks up to a year), *intermediate* effects (from 6 months to 10 years), and *long-term* effects (beyond 10 years). These various parameters can be woven into nested clusters of relational mutual support to each other and to empirical observations, involving doing, belonging, being and knowing. Thus, again, the complexity of the issues in question calls for a complex, sophisticated, “matched” approach.

A human couple experiencing difficulties with their relationship

The assessment of such a relationship, and the resolution of its difficulties, depend markedly on the logic used for analysing the events under discussion (Reich, 2002, pp. 88-91). Here, logic is understood as referring to principles and rules governing the proper use of reasoning. In real life hardly anybody would argue in the way presented here, people being more pragmatic, but to use different logics singly in this illustration might help to get a better sense of what each brings out.

John and Barbara use classical (Aristotelian) binary logic. “It’s all your fault, Barbara, you never understood me.” “And you, John, what did you really do to make me happy? I am deeply

disappointed.” “Well, maybe we were never meant for each other!” For John and Barbara, only black and white exist in their dichotomous world, only fully right or fully wrong. In short, a break-up is to be analysed in terms of this logic, which excludes any intermediate possibility; it has to be the one or the other, or none/both. The result is likely to lead singly or in combination to (a) a lowered self-esteem, (b) anger at the partner, (c) devaluing the relationship as long as it lasted, and (d) a hesitancy to make future commitments.

Dick and Joan are cognitive complex thinkers, who do not use much binary logic: “You know, Dick, I would miss sailing with you, we are really a good team.” “Yes, and we always know where we want to go. But then, you were too easy with spending money, and that put a strain on our relationship.” “Well, I thought that with all the raises you told me about we could afford it.” “Now Joan, there is a lot I could say to that and to other things. Nevertheless, I keep some good memories, and anyway, if it comes to that, next time, I shall know better.” Dick and Joan clearly differentiate and integrate their experience considerably more than John and Barbara. A break-up would be less traumatic for them than for John and Barbara, and possibly Dick and Joan would still meet occasionally to speak about their respective new partnerships.

Ron and Liz are dialecticians. “Now, Ron, who would have thought when we first met that we could get into such difficulties? Do you remember how happy we were, the things we did together?” “Of course I do, Liz, and I shall go on valuing those times. But then, we have changed since. You have started your new career.” “And you have developed new interests I simply cannot share”. “Well, maybe, Liz, one day we will move closer together again, but for the moment a separation seems the most reasonable thing to do, don’t you agree?” Looking thus for changes in either partner within and outside the relationship embeds a break-up into the flow of life. It could even appear as a gate toward further development, and would leave positive remembrances intact.

Walt and Ann often use analogies to explain things. “You know, Walt, this is just like what happened with your brother Ted. One day he had enough and just broke up with his partner, I never

understood why.” “No Anne, that is the wrong comparison. Rather take Frank and Nancy. They were together for quite a while until it became clear to them that their partnership was nor really fulfilling. So they parted ways in mutual agreement.” The good aspect of this discussion is that both partners try to understand what happened (and they do it without directly attacking each other). However, as no two cases of human relationships are identical, there are limitations to this approach. Walt and Anne may never get to the bottom of their difficulties unless they really focus on their own personal case.

Bob and Betty favour Relational and Contextual Reasoning (RCR – Reich 2002, 2007) on account of its both-and (that is *not* either/or) logic. “Bob, it seems to me as if lately we have a problem with our relationship.” “Oh, why do you say that? We still like to travel together to interesting places and we have a good time sharing our impressions, don’t we?” “Yes indeed, but for one thing, I enjoy jogging or skiing with you less and less, you are just too strong for me.” “Well, should I admit that your love of going to concerts and expecting me to come along each time is getting a bit much for me? I am not against concerts, but there has to be a measure to everything.” “I am glad you are so frank about it, Bob. Maybe we should do more things we like together, and learn how *not* to get on each other’s nerves by either reducing or transforming those less pleasant occasions.” “That may not be easy, Betty, but let’s try!” By way of bringing in the context and differentiating their respective experiences, Bob and Betty conceivably give their partnership a second chance.

If any conclusions can be drawn from these imagined, much too rudimentary “vignettes,” it is clearly that binary logic is of limited helpfulness in this context. The other thought forms have more to offer for getting to fruitful relationships, each in its own way.

Current Major Issues Concerning the Brain and Religion

As already indicated, the present considerations can be viewed in a much larger context such as described, for instance, in Doran Hunter’s (2010) “Human Nature, Science, and Moral Government.” Indeed, to be successful and to last, moral government and human

nature of necessity have to fit each other appropriately. Both natural and social science can help to research and optimise that fit.

Whether it is Confucius, Plato or their several successors, powerful minds have devoted themselves to advance the related issues. Religious guides such as Moses, Jesus, and Muhammad have given much thought to them and indicated solutions based on revelations from God. In recent times, neuroscientists, evolutionary biologists and psychologists, among others, claim that Nature has done the required job and trusting one's brain and feelings shaped by evolution is basically all that is needed. But is this really so? New developments, whether in science or technology, political visions, even in philosophy have a tendency to overestimate the depth of new insights and the beneficial effects of their application. So, let us see where the new enthusiasms may need to be damped down a little and what needs yet to be done to reach the aims set. To that effect we now turn to the two issues indicated earlier.

Is the brain the generator of religion?

Michael Persinger (2002, p.283) writes:

Our research, as well as the results of other experimenters, indicates that the experiences and beliefs about god are normal properties of the human brain. In all probability they have developed within our species with other cognitive functions in order to facilitate adaptability...There is now experimental evidence that the experience of god can be simulated with the laboratory.

There exists an ample literature to the effect that the origin and functioning of religion can be explained fully with reference to evolutionary pressures on the brain and its performance. So why not simply accept this view? For religious believers, this is unacceptable on account of their faith, God being at the origin of everything. How about the views of nonreligious scientists? Clearly, there is a relation between the brain and our thoughts and feelings. However, the issue is whether *all originate* in the brain or are “merely” relayed (and perhaps “edited”) by it. As regards sense perceptions of the “outer” world (including our body), the latter is overwhelmingly recognised as true. In fact, these perceptions would

not have evolved without a survival benefit (creatures living in the lightless depth of the oceans have not developed organs for sight). But is it justified to generalise this insight? In my opinion, the required empirical data are not available.

An acknowledged difficulty relates to the required research on reliable introspection (first-person) data. Few people are fully aware of their brain processes and can describe them in a way understandable to others. Also, relevant empirical results are as yet rarely sufficiently reproducible. To progress, the methodology needs to be improved (and support for this kind of research to be strengthened). A recent issue of the *Journal of Consciousness Studies* (Petitmengin, 2009) provides an excellent overview of the current state of affairs and is a sign of hope for better days.

Is the brain sufficient as a guide for living a satisfactory life?

One of the tenets of the Enlightenment was the superiority of the brain's reason over religious teachings for living a satisfactory life. Indeed, a goddess of reason was put on the altar of the Paris Cathedral Notre Dame in 1793. Looking notably at the experience of people living in socialist states (supposed to be founded on reason), that tenet is not necessarily borne out by historical experience. Indeed it can be shown that the brain needs religion and other cultural elements as a safeguard against humanity's self-destruction (Reich, 2010).

Specifically, humans are not endowed with sufficient biological self-restraining mechanisms (apparent from, e.g., overfishing, overgrazing, air pollution, global warming, and even more importantly, from aggression within their own species). Furthermore, in contrast to almost all animals, humans are aware that they are mortal, which probably has been beneficial for the development of consciousness but also creates a problem of self-assurance and life aims. Rationality alone seems to be unable to fully make up for all those shortcomings. Our brains are clearly more voluminous relative to body weight than those of the great apes but are they better adapted for survival?

John Teske (1996) points out that neuropsychology is necessary but insufficient for understanding spirituality: spirituality requires

capacities, however limited, for reflection, for self-knowledge, and for self-transcendence. Yet, always, according to Teske, the corresponding mapping, modelling, or symbolically representing a world and a self within it by the brain entails limits that need to be acknowledged. First, due to the brain's limited capacity, a selection occurs that entails restrictions, with the result that our representations will be incomplete, limited or even distorted. Second, the unavoidable abstraction entails separation from the world of particulars, thereby losing the uniqueness of concrete relationship. Third, construction of the representations of the world entails fabrication because there are multiple ways to do it. The result is that our knowledge of the world is perspectival and inescapably egocentric and self-deceptive. Fourth, specialisation entails partition: our complex world leads to knowledge about specialised parts and specialised representations. In a limited-capacity system, this leads to some degree of partition, of modularisation, which runs the risk of fragmentation as communication between components decays.

Our spiritual life evolves to construct, to represent, to symbolise the self – our bastion of personal wholeness. This pursuit of integrity is dependent upon our neuropsychology but is not entailed by it: integrity may fail, the self may fragment, and spiritual life may become meaningless. The reader is referred to Teske's article for further details of this evocation.

To solve the difficulties indicated above, Teske (1996) suggests (and I agree) a process of individuation that involves a denial of some claims of the ego and its "acknowledgment of guiding and integrating factors not of its making" (p.229), an ultimately religious process: the very integrity of self is dependent upon a community of selves in which it resides. In Teske's words, "Ultimately the meaning, purpose and unity solving the integrity problem may be obtained, not in the annihilation of the self, but in the identification of the self with larger and larger units of which the individual nervous system is a part, until this part needs to expend for the benefit of the larger whole" (pp.229-230). He continues, "The final level of spirituality involves participation in a transindividual world, transformation by it, and even sacrifice to it,...identification with something other than self and becoming it...[T]he accomplishment

of that purpose will entail various forms of sacrifice, material, biological, evolutionary, cultural, and social” (p. 230).

Peter Munz (2008) argues that the human brain is maladapted in several ways: first, the brain has no organ to solve the binding problem (bringing the related elements stored in different brain areas together coherently). Since binding is achieved, it must come from the outside. Second, the operation of the cerebral neurons does not yield the emotions we are experiencing but only somatic markers or raw feels (purely bodily feelings, a disorienting disturbance). They impair and even damage our ability to orient us in the world. Since homo sapiens has survived, the damage must have been controlled by something (that leads to knowing whether it is love, hatred, jealousy, ambition, etc.).

According to Munz, human culture provides the outside control. He understands culture as something not transmitted genetically, and which may consist of irrational and unverifiable beliefs, which serve the purpose of defining a given speech community, and make it separate and distinct from all other communities. This effect more than makes up for the concomitant cognitive, economic, and political disadvantages.

Michael Shermer (2008) calls *patternicity* the tendency to find meaningful patterns in meaningless noise. Again, the problem is a maladaptation of the brain, namely, that we did not evolve a “Baloney Detection Network” in the brain to distinguish between true and false patterns. However, whenever the cost of believing that a false pattern is real is less than the cost of not believing a real pattern, natural selection will favour patternicity: $pb > c$ (pb = probability of benefit, c cost of doing so). From there, the evolutionary rationale is clear: natural selection will favour strategies that make many incorrect causal associations in order to establish those that are essential for survival and reproduction.

Does all this mean that almost anything goes in religion and other parts of culture? Hardly. Apart from making up for the shortcomings indicated, these controls and supports from the outside need to deal “with people’s existential anxieties, including death, deception, sudden catastrophe, loneliness and longing for love and justice” (Atran, 2006, p.407), all of which science cannot provide.

Religion and other parts of culture address people's deepest emotional yearnings and moral needs. However, in practice, this is not so simple, as we all know, not least from the clashes between religious communities.

Conclusion

The forgoing considerations also do mean there is hope, e.g. via building better "Baloney Detectors" via socialisation and education, and also paying attention to the negative consequences of the more severe forms of community-boundary definitions ("tribalism"); it is the cybernetics of that kind of feedback that might save us. To get there, the science and religion dialogue needs to be deepened and widened (e.g. Reich, 2008). Among other things, this requires agreement on the most promising underlying ontology and epistemology as well as on appropriate logics such as relational and contextual reasoning.

In summary, our limited brain cannot solve some of our major problems by itself but supported by religion and other parts of culture it has (incompletely) done so in the past, and will do better, it is hoped, if we strive for it in a worldwide dialogue. Altogether, we need more reflection and positive-result-based improvements.

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