

BRAIN STRUCTURE AND THE EMERGENCE OF *HOMO NOVUS**

Does Human Nature Change?

Although we think of biological species as fixed, they change through time in response to various internal and external factors. Nowhere is this more obvious than in our own species *Homo sapiens*, whose history goes back to an ancestor whom we share with the apes. Palaeontology has, for instance, revealed a line of development going from *australopithecus*, *erectus* and *habilis* and only becoming recognizably human with *sapiens* about a hundred and fifty thousand years ago. The dividing lines between each emerging species or subspecies can be seen as morphological - i.e. concerning bodily shape and size and brain configuration - but are much more significantly seen as differing types of consciousness.

This paper is a first step towards showing how these factors of brain, consciousness and community are linked and, in particular, how human evolution is dependent upon bringing into being new forms of community dedicated to evolutionary advance. Underlying this is the truism that a better world cannot be built without better people. What is less often said, since it creates a chicken-and-egg circularity, is that a better world is needed to create better people. The only way to break out of this circularity is to embark on changing both at the same time. The entry point is to bring together those who are keenly aware that they have unrealised potential and to explore the kind of community, the kind of knowledge and the kind of procedures that are needed to actualize it.

From the perspective of human evolution it is easy to see that we would have little in common with our first ancestors, who were, so to speak, hardly more than apes with human potential unrealised. Speculation about this phase of evolution must necessarily be vague,

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since palaeontology deals only with bones, and these would-be humans did not leave any artefacts for archaeology to interpret, but it is clear that if any one of us in the twenty first century could be transported in imagination back to this time, about four million years ago, we would be intensely aware of the differences in the way we and they thought and felt. Without doubt, we would seem to them an alien kind of being, walking on two legs like them but in some puzzling way different in what really matters. While we might feel superior, they would consider us abnormal, not quite human in their terms. The more imaginative would view us as “super-human”, to be admired and even emulated, the less would probably simply feel us as different, and thus as a threat.

By the same token, if we believe that evolution is still in progress, we may infer that transported in the opposite direction, into the future, it is we who would be puzzled by our descendants and, confronted with a kind of human that was different, would react in the same way by seeing this difference as a threat or as a stimulation to understand and to imitate this difference.

This thought experiment is, of course, dependent on an act of faith that evolution is continuing, and that the human of the future will be an advance upon us as we are an advance upon the caveman and the ape. It is not, however, a blind faith, for we would be dull of soul indeed if we never felt frustrated at the thought of what we could be, given the right circumstances. As Thomas Gray wrote, any village churchyard could contain the bones of a “mute inglorious Milton” whose poetic potential went with him to the grave, unrealised through lack of opportunity to develop it. What other kinds of potential are latent within each of us today? What possibilities of fulfilment lie waiting to be awoken, and how is this to be done? One thing we can be sure of is that if the new is to be attained, something of the old will have to be abandoned, and giving it up will not be achieved without a struggle.

***Homo novus*, the Human of the Future**

If the historical trajectory of human evolution is projected into the future, we may anticipate a higher human type, which may be denoted by the label *Homo novus* - the new kind of human. This anticipated new subspecies or type will certainly not appear overnight, and in one sense it will not be entirely new, for we can see such higher specimens in

history in individuals like Jesus of Nazareth or Gautama Buddha, others who could be named and doubtless many more still who have died without leaving any record. How far it would be accurate to see them as evolutionary emergents and forerunners of *Homo novus* is a complex and controversial question, for the culture into which they were born would limit their development in important respects. Jesus, for instance, who had a kind of consciousness so superior that his contemporaries (or some of them) and millions of believers since have considered him divine, doubtless believed that he lived on a flat earth, with hell (*sheol* or *gehenna*) beneath and heaven, the abode of God, above the clouds. While it is clear that he had great gifts as a natural healer, or faith healer, he only had the medical knowledge of his time, and believed like his contemporaries that mental illness was caused by evil spirits and that bodily fluids like spittle were curatives. At the same time, it is perhaps worth mentioning that he was exceptional for his time in not believing that deformity and handicap were the result of the parents' sins being visited upon their children. So Jesus was both bound by his cultural community and able to transcend it in significant ways. This is the uncomfortable state in which great prophets, poets and artists exist. They demonstrate in various ways the kind of potential for new kinds of consciousness that we all possess. They are humankind's gateway into a future that must first be imagined before the attempt can be made to build it.

Most thoughtful people feel a sense of unrealised potential, some feel it very acutely, but not often do we consider what is holding us back from turning the potential into the actual. Still less do we consider that progress of this kind involves discovering new modes of happiness and giving up, or de-emphasizing the old. If the future lies in the emergence of a new human type which I have called *Homo novus*, the new kind of consciousness by which it is defined may be called noval consciousness, and the new kind of community which will embody it may be called a noval community.

The importance of community in making us what we are has been exemplified above in the case of Jesus. Generalizing from this, we can say that the community (or communities) in which we grow up imposes limits on our development as well as providing opportunities for growth. Hence, in projecting the evolution of the human species - and our

personal development equally - the dynamic relationship between our individual freedom and our cultural community must always be kept in mind.

Our Four-level Brain

What kind of human would this hypothesized *Homo novus* be? One way to approach the question is to consider the changes in brain structure that have come about as our species evolved from its mammalian ancestors and even from its pre-mammalian ancestors. Though some degree of speculation is unavoidable, this way of projecting the future is valuable because it ties the vague notion of human consciousness to the physiological features that generate it. The evolution of the human brain is usually considered to have resulted in three structural levels, interconnected but with increasingly sophisticated functions - namely the brain stem, which is the most primitive and automatic in the conscious response it creates, the limbic system, which is the seat of the emotions, both good and bad, and the cerebral cortex which is the seat of our higher intellectual consciousness, logic and artistic appreciation.

This schema, first proposed by Paul MacLean,¹ is now widely accepted as a first understanding of how the brain works, though it has been superseded in the detail in many respects, particularly in new knowledge of the role played by the hippocampus in changing our personality by acquiring new information and skills. There is, however, a strong argument for considering that part of the cortex called the prefrontal lobe as a fourth level, since so many purely human responses arise there, especially the moral sense.² It has, in fact, been called “the organ of the soul” and “the organ of civilization”.³ If there is to be evolutionary advance in our species, it is likely to centre on development of this part of the brain and on systemic improvements, particularly on speed of communication between the different components of the brain. The nature of these possible advances is not of immediate interest: all I hope to do here is to indicate the ways in which human consciousness itself may be improved to produce a higher kind of human being.

The four-level brain structure may be shown schematically and highly simplified as below. The large arrow indicates the direction in which the brain has evolved, effectively by adding increasingly refined brains. The process of piling up functions in this ad hoc way has created

major problems for us, since each part retains some measure of independence and is always liable to struggle with the others for dominance. This struggle is almost a definition of the human condition. As St Paul famously said in anguish, “That which I wish to do, I do not, and that which I wish not to do, I do.” In the growth of the human embryo we see replicated the sequence of evolutionary development, though not precisely, and after about six months of gestation, the final structure is well in place.

The lower brain is a primitive organ, incapable of generating consciousness as we understand it, or even feelings, but only basic survival drives such as flight, fight, eating and sex. Above this develops the emotional brain, a composite of various parts and functions that together are called the limbic system, where emotions both primitive and sophisticated are generated, the more basic ones being considered “instinctive”⁴. This part of the brain we share with reptiles, and the level above it, the cerebral cortex, we share with other mammals, though it exists in much more primitive form in reptiles and birds. Where we differ from, say, our cousins the apes is that their cortex is smaller and has less surface area (thus fewer neural connections) and the prefrontal lobe, as in all non-human mammals, is small, sometimes almost non-existent. The human mammal is born with a relatively very small prefrontal cortex, which does not reach its proportionate size until about the seventh year. It is no coincidence that this has traditionally marked the child’s entry into what is called “the age of reason.”

The diagram presents a misleadingly static view of the brain and its function, and the small arrows have been added to indicate constant feedback between the different levels. It must be emphasized that some very crucial aspects of the brain are omitted from this diagram, particularly the bicameral cortex, which generates so-called right- and left-brain consciousness, the temporal lobes, which play a major part in religious awareness, and other parts, such as the amygdala, which play a coordinating role.⁵ The latter will receive mention later. Further, although the diagram shows the brain as a system, it says nothing of the purpose of the system or of the energy which drives it. It is perhaps worth saying here that its function is to transform energy. Just as a steam engine transforms chemical energy into the energy of motion, the brain transforms food energy into the energy of consciousness, and in fact

uses about 40% of the calorific value of the food we eat. However, this makes the point very crudely, for the energy of consciousness is also generated, often dramatically, by our social environment. We all know, for instance, and have experienced how a dynamic speaker can generate emotional response, and how a crowd can amplify it. Interestingly, performers often tell of how they draw energy from an appreciative audience.

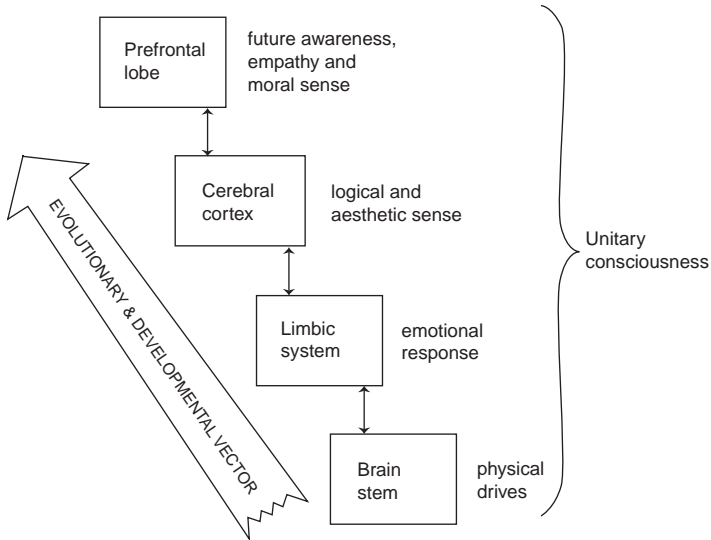


Figure 7: The evolution of the four-level brain

A Profile of Human Consciousness

In its most developed form the human brain creates a unitary state of consciousness from many sources of input, both external and internal. To take the simplest of examples, the eyes create consciousness of the apple in my hand, while my memory recreates a consciousness of the pleasure that will come from eating it, and simultaneously the desire to eat it and the decision to do so - or not to do so if the moment is not appropriate. All these different kinds of consciousness flow together to create a unitary state of awareness. The way in which different kinds of consciousness combine to give a sense of self with a single awareness is a well-defined problem in the emerging new discipline of Noetics or Consciousness Studies, being called, appropriately, “the binding

problem”.⁶ From a religious point of view, the nature of consciousness presents a particularly interesting study whose significance can only be indicated here. Various meditation techniques are aimed at reducing this variegated consciousness to a single point focus by eliminating all the normal sources of sense perception and internal reflection, thus, it would seem, generating a different kind of unitary awareness, of a pure and featureless kind. By contrast, group meditation, as for instance, in the silent meeting for worship of the Quakers, brings together many individuals’ consciousness by a process of entrainment, creating a unified group consciousness, which is recognized in the experience of a “gathered” or “centred” meeting. It would seem that the meeting gathers as a critical proportion of the participants move towards point consciousness. This topic calls for extended exploration in any serious discussion of what is meant by religious worship.

What we might call normal consciousness of the mature specimen of *Homo sapiens* can be considered as an habitual state that can be analysed into the follow categories. These five kinds of consciousness do not exist at all in animals, and only in a weak and intermittent form in the small child, the immature adult and primitive man. Using the identifying tag Hs for *Homo sapiens* and Hn for *Homo novus*, they are:

Hs 1. Time-consciousness

This enables one to live in the past-present-future simultaneously, whereas the undeveloped human is, so to speak, imprisoned in the present through lack of imagination.

Hs 2. Empathic consciousness

This enables one to share another’s feelings. Jesus’s exhortation to love one’s neighbour is, in fact, a call to become a higher kind of human being by approaching the development of such empathy as a religious imperative. We tend to take this for granted today, but it is a factor entirely missing from primitive religions.

Hs 3. Hypothetical, or conditional, consciousness

This enables one to project into an imaginary situation and ask, “What if?” Animals are effectively devoid of hypothetical awareness, while scientific thinking employs it systematically.

Hs 4 Self-consciousness

This enables one to construct an “I” and thus to feel separate from the group. Self-awareness is taken very much for granted today in the West, but is a relatively recent evolutionary advance, and its fragility is often demonstrated when the group mind takes over and shapes our judgements. By contrast, the mature human displays an independence of mind which psychologists refer to as ego-strength - not to be confused with egocentrism.

Hs 5. Ethical or moral consciousness

This creates a sense of “ought” that is peculiarly human.

A Profile of Noval consciousness

The transition from *Homo sapiens* to *Homo novus* may be understood by projecting these five types of consciousness into something which is qualitatively different. I have identified the next development in the above forms below by using the same identifying number but with the prefix Hn (*Homo novus*).

Hn 1. Evolutionary awareness

This extends ordinary time-consciousness (Hs 1 above) backwards in a critical way, going back to the beginnings of the cosmos at the point of the Big Bang. From awareness of a cosmos and a human species in evolution one is drawn to look forward to the future, projecting the curve of human development, and to realise that what the human species is going to be will be what we decide we want it to be. Thus what in *Homo sapiens* is ordinary time awareness now has an ethical component. Indeed, the defining consciousness of *Homo novus* may be considered as a pervasive awareness of responsibility for the future of the species.

Hn 2. Global awareness

This extends empathic awareness and throws up new challenges to the species. While it is difficult enough to love one’s awkward neighbour down the street, it is much more difficult to love a “global neighbour” from a different cultural tradition and speaking a different language. If the concept of a global family is to be anything more than a pious fiction, we shall have to press empathic consciousness to new depths.

Noval consciousness develops empathic awareness in another critical way, extending the Jewish belief that we can be in real communication with a real God. On this conviction is founded not only Christianity and Islam but the whole of Western civilization. In a post-Christian and agnostic age, the old assumptions of divine-human relationship can no longer be taken for granted. We need now to examine what is meant by two-way communication with divinity and how we are to achieve it and what is meant by the concept "will of God". If the divine will is to kept at the centre of religion, it must be related to the evolutionary process which we see unfolding and in which we play our part. The only alternative is to assume that it is all happening without the creating power knowing anything about it.

From this perspective, ecological awareness is inescapably a religious kind of consciousness. In recognizing this fact, noval consciousness is proactive, cooperative, co-creative in a way that is quite different from past religious awareness. Insofar as evolutionary science shows a direction and reveals possibilities on both a planetary and personal level, it gives new meaning to the age-old question, what is the meaning and purpose of existence?

Hn 3. Imaginative awareness

This will release new potential as it become habitual. The importance of imaginative thought can hardly be over-emphasized, for the transition from *Homo sapiens* to *Homo novus* can only be made by imagining what the new state would be like. In this regard, Christianity can be seen as a forerunner, for it is in its essence a type of consciousness which grew out of St Paul's repeated injunction to "have that mind that was in Christ" (Phil. 2:5, etc.). From this perspective, Christianity can be seen as an ongoing attempt to imagine how Jesus would see and feel in all situations.

Hn 4. Self-consciousness

This will be taken by noval man to a new level as a consequence of the efforts made to extend empathic and imaginative awareness. As this aspect of consciousness develops, self-centredness or egocentrism will diminish - the path to novalism is a systematic decentering of self. Noval man will advance towards the sort of habitual awareness of others and of God that we see, for instance, in the way that a mother is constantly

aware of her child. This example shows in a rather simple way how the sense of self can become inseparable from, and indeed defined by, a sense of the other and of a mutual dependence. In practice self-consciousness and other-directed consciousness must coexist seeking the right balance.

In psychological terms this is a Copernican shift, but with a difference. Where the centre of the universe was displaced in the seventeenth century from the earth to the sun, the new displaced self will have two centres, which might be called in traditional terms God's will and the well-being or our neighbour. There is growing reason to change the traditional terminology, as science starts to reveal new understandings of the creative power we call "God" or "the Spirit" and what Eckhart called "the God beyond God", but venturing further into these considerations would obscure the present line of the argument.

Hn 5. Ethical consciousness

This was felt by the Jews to be the defining factor in being human. Above all things it differentiated our species from the subhuman world of the animal. The Bible opens with the Adam and Eve story which centres on a metaphorical tree, whose fruit is "knowledge of good and evil". What is sometimes overlooked in this powerful myth is the reason given by the serpent (an ancient symbol of wisdom) in tempting them to eat the fruit: "Your eyes shall be opened, and you shall be as God, knowing good and evil" (Genesis 3:5). Ethics is manifestly going through a crisis today, largely as a consequence of the activities of science, but also of changes in social relationships. Such questions as the morality of human cloning, of soft drug-taking and of deliberate single parenthood can hardly be resolved within the old ethical framework, which must now be extended.

Extension can be seen as a matter of increasing dimensionality. Thus for the child morality is one-dimensional, with decisions being made on a right-wrong, yes-no, black-white basis. The adult is able to moralize in a two dimensional way, making decisions along a line of judgement - that is to say, not "yes or no" but "greater or lesser". Noval ethics concerns judgement in the kind of three-dimensional mental space that only the mature adult can handle, when different considerations must be weighted to give not certainty but probability. This procedure

is akin to that developed in systems theory, where the term “decision space” is used to define the limits of probability.⁷

The Noval Brain and Religious Experience

Since the kind of consciousness that an organism generates is dependent on the kind of brain which it possesses, the thesis that *Homo sapiens* will evolve into *Homo novus* demands that our brain will evolve. From the thrust of the present argument it would also seem that the critical change will be an increase in the size of the pre-frontal cortex. This may well be the case, but expressed so simply the speculation raises several questions at a more fundamental level of biology and religion.

Firstly, and as the diagram above shows, since the brain generates a unified consciousness through a complex feedback procedure,⁸ so one may presume that this feedback as a whole plays a central role, rather than any particular part of the brain.

Secondly, there are other aspects of the brain omitted from the diagram which are known to play a major role in religious experience. Furthermore, the concept of “religious experience” itself is by no means well defined. Since our sense of God is usually stronger when we are feeling happy, and tends to disappear altogether when we are not, it has been suggested by cynics that “God is an endorphin”. Flippant as this may sound, if authentic religion is the search for direct experience of God, we cannot lightly dismiss it without examination, for to do so would be to run the risk of mistaking a refined self-indulgence for genuine experience of the Other.

Apart from the prefrontal cortex, the two parts of the brain which are involved most obviously in religious experience are the temporal lobes and the amygdala. Discovery that temporal lobe epilepsy is often accompanied by intense religious feelings has opened up new theological perspectives but, equally, raises questions about the validity of what is often casually referred to as “spirituality”. R. V. Ramchandra, for instance, who has done much research in this area and much to popularize it, is at pains to dismiss claims that the temporal lobe is some kind of antenna that picks up signals from a divine reality or that it is a “God module”.⁹

The religious feelings often experienced at the onset of an epileptic seizure are commonly described as a sense of oneness with the cosmos

or a sense of everything in the world suddenly having a meaning. The latter, particularly, seems to be explainable if the cause of the epilepsy is diagnosed as a massive overload of the brain circuitry, originating in the temporal lobe, overwhelming the capacity of the amygdala to process it in the normal way. One major function of the amygdala is to analyze incoming information for its significance, and pass on its assessment to other parts of the brain for action. Thus someone wielding a cricket bat in the park would not be cause for action, but the same person suddenly appearing in my bedroom would call for a survival response of some kind. Temporary breakdown of the gateway function of the amygdala, it is thought, results in the patient seeing significance all around; almost everything has a meaning beyond itself, “every common bush afire with God”, as the poet says. Why this should be so often (in about a quarter of the cases) a religious significance is a question requiring further thought.

The Vital Role of the Noval Group

Of equal importance in examining brain structure in relation to spiritual experience is the fact that the development of the brain depends upon the quality of all the experience that the child internalizes as it grows to maturity in the process known as “socialization”. As surely as poor nutrition in childhood has lasting effects on the adult, such as rickets, so too culturally restricted education results in a restricted kind of consciousness in the adult, what might sometimes be called “psychological rickets”. Thus, if the child is cut off from communication by speech during the critical years between two and seven, when we normally learn language and, as it were, wire it into the brain, it will grow up with a permanent deficit not only in communication skills but in logical thinking. This is true of other aspects of normal human consciousness, and hence it can be seen that the development of the mature human individual is critically dependent upon education of all kinds, and this in turn is closely related to the cultural community in which we each mature. To take a very clear example, if we had been brought up from birth in a jungle community, we would be different persons, with a different world view and different perception of self than that which we now have and take for granted.

It is reasonable to expect that early influences, good or bad, will shape the brain and, in fact, new brain scanning technology shows how severely the brain can be deformed in extreme cases of deprivation. It has been found recently, for instance, that severe abuse in childhood can result in the hippocampus never developing beyond half its normal size, resulting in a range of pathological behaviour arising from a confused sense of identity and, in extreme cases, in multiple personality disorder.¹⁰ From such extreme and tragic cases we may infer that lesser causes have lasting but less dramatic effects on our sense of self. This has fundamental implications in religion, since if, due to poor upbringing in the community, a person has an insecure or dysfunctional sense of self, can genuine religious development take place? Put differently, if I do not know who I am, is it possible for me to know who God is? The question appears to be self-answering, but it is the corollary which is important here, namely that nothing useful can be done about bringing *Homo novus* into existence without bringing into existence at the same time a specifically designed nurturing community, a noval community.

Homo novus - Species, Subspecies or Type?

From the perspective of orthodox evolutionary theory (currently neo-Darwinism), the stability of such communities is questionable, let alone the hypothesis that they will become dominant in humankind's future. In fact, the noval hypothesis, if such it may be called, adds fuel to a debate on the concept of species which is at the heart of evolutionary biology.¹¹

The debate centres on the nature of genetic inheritance, polarized in the Darwinian and Lamarckian positions, though not restricted to these, and on the notion of the species as a natural and self-contained evolutionary unit. Darwin's seminal work was, of course, entitled *On the Origin of Species*. The relevance of this debate to the present argument is, firstly, that the hypothesized *Homo novus* will not technically be a new species, since there is no interspecific breeding barrier between it and *Homo sapiens*, as there is between *sapiens* and the 180 primate species which share their ancestry with us.

Secondly, the noval group will function effectively as a "brain of brains", by virtue of its higher empathy. It would, in fact, be more accurate to define *Homo novus* in the group as those who come together

to acquire this higher empathy, rather than those who have already acquired it. In any event, the fact that noval man will have a global consciousness and will have a strong sense of individuality, as against the members of a tribe who have very little, feeling neither wish nor ability to differ from tribal consciousness, means that as the noval group develops it will be recognized as an example of the biological unit foreseen by many social and biological theorists, such as Herbert Spencer, Aldous Huxley and Lancelot Law Whyte.¹² The most ardent visionary in this respect is without doubt Teilhard de Chardin, who says in *The Future of Man*, "The idea of the planetary totalisation of human consciousness ... may at first sight seem fantastic; but does it not correspond exactly to the facts? ... However mad it may seem, the fact remains that great modern biologists ... are beginning to talk of mankind, and to predict its future, as though they were dealing (all things being equal) with a brain of brains."

Of the many implications of the concluding phrase, the most important for orthodox biology is that the process of human evolution is shaped and driven by many independent minds with a unified purpose, becoming in effect what has been called "a multimental organism". Whereas the species is homogeneous and driven by a single will, often that of the alpha male, the noval population will break new ground in constructing a group with the kind of differentiation and harmonious working together that defines an organism. The psychohistorian Julian Jaynes remarked, in *The Origins of Consciousness, in the Breakdown of the Bicameral Mind*, that "civilization is the art of living in towns of such size that everyone does not know everyone else." The noval hypothesis assumes a new kind of civilization - though it will hardly be visible for several generations - and new kinds of community with a global sense.

As against the city, whose members live together without knowing everyone else, noval communities may or may not live in close proximity, but even though they may be geographically widely separated, the members will have an habitual awareness of each other. A common consciousness will be created using modern communications technology, as well as through face to face meeting on a daily or regular basis. All this will be directed toward generating a higher empathy and a shared evolutionary purpose in order to create a new kind of bonding

while fostering individuality. Where Paul said of the Christian identity that it did away with the distinctions between Greek and Roman, male and female, freeman and slave (and was thus implicitly subversive of socio-political structures based on these divisions), noval consciousness will do away with identities that are more relevant to the present divisions in the world - male and female, certainly, but also gay and straight, Christian and Moslem, white and coloured.

A second important implication of the noval group is that it will need to find ways of maintaining its coherence from one generation to another, for, the offspring of its members will not necessarily inherit the genes that gave their parents the desire to pursue this way of life. Without specific principles and mechanisms to deal with this problem there would very soon be a reversion to the general norm of society.

Evolutionary Optimism, Evolutionary Realism

The speculative element that is inescapable in dealing with the future of humankind means that a charge of evolutionary optimism, if not wishful thinking, will easily be levelled at the noval hypothesis. There is, however, a powerful but rather paradoxical argument for the inevitable appearance of *Homo novus* in that our species has developed to the point where it is in a state of permanent disequilibrium. The assumption of progress, a state of mind growing out of a mix of Western science and humanitarianism, means that we cannot be content to stay as a fixed species, like all the rest. Except in very isolated communities, where life can remain unchanged for centuries, modern man is incurably restless and, once moving, we must either go forward or regress. Indeed, this lack of stability might almost be treated as the defining quality of "modern man".

The possibility of regression is by no means remote: one only has to look at aspects of contemporary society and at the reversion to barbarism in many places across the globe to realise that evolution is by no means an automatic process taking us to higher and higher forms of civilization. In the distant past it seems probable, in fact, that some proto-humans reverted to being apes, for the fossil record suggests that there are apes today who can be said to be descendants of the very first humans - allowing, of course, that these were human in only a very limited sense. "The Australopithecines, it seems, did not die out," says

John Gribbin, “but gave up the ability to walk upright and re-adapted to a life in the trees, becoming the chimpanzee and the gorilla.”¹³ To those who object that the emergence of a higher form of humanity as a norm rather than an exception (such as rare specimens like Jesus) is impossible, it may be pointed out that it is at least as possible as the re-appearance of lower forms. Hope and fear are thus in a precarious balance.

On Novalism, Orthodoxy and the Learning Imperative

If the thrust of evolution is continuing as in the past to take us to a higher level of consciousness, and if the shift will be as radical as here argued, then social changes of many kinds must follow. As noted above, those individuals who feel a need to unlock their full human potential will come together to form communities where they can engage upon this as a mutual task. In forming the community they will be formed by it, as has happened throughout our evolutionary history, and it is important not to lose sight of the fact that in the concept of noval man we are talking of major, epochal change.

In the long term view, noval consciousness may be expected to bring in its train a new kind of civilization, characterized by various socio-economic attitudes that arise from a new sense of self and from planetary and ecological awareness. As earlier kinds of civilization have been defined by the breadth of their world view, so too in principle will novalism. Just as the normal human some five centuries ago who assumed that the earth was flat had a limited mental horizon, and the normal human in the last century was limited by belief in a sun-centred universe, so the normal human today is entering into a new phase of civilization through knowledge that we live in an expanding universe.

Equally as regards ethical and behavioural norms, we can see how normality or orthodoxy has changed over the years and at different rates across the globe. Until well into this century there still existed a cannibal culture in the Papua New Guinea Highlands. Only five or six generations ago, it would be considered quite acceptable in Britain to watch public executions as entertainment; it is quite possible that my great grandparents did so. Two centuries ago one could be a completely civilized Christian and a slave owner at the same time. Today any of these things would mark out the individual as abnormal in a regressive

way. But, by the same token, anyone today who foresees a better kind of human in the future will be regarded as abnormal and unrealistic.

The barriers to human development have been transcended only by increasing education, for without this there is no way that the mass of the population can reach a new level of consciousness. Two hundred years ago dedicated individuals in Britain set themselves the task of helping everyone to read, write and do simple arithmetic, and the National Adult School Education movement was born. There were plausible objections at the time, for even such a limited education was not seen by everyone as a necessary or even desirable thing. After all, the ploughman and kitchen maid managed perfectly well without being able to read and write, and it was by no means obvious what they would gain for the time spent in learning. The need for an educated population was finally acknowledged by the state instituting compulsory education, the length of which has more than doubled since it was introduced almost a hundred and fifty years ago. Had the government not stepped in with these initiatives for social engineering on a modest scale, there would doubtless be in Britain, as there are in many parts of the world today, a majority of illiterates in the country. The economic and political consequences that would follow from that can easily be imagined.

If from these brief historical facts it can be assumed that social and evolutionary advance is impossible without education, then it is hardly to be denied that a better future cannot happen without new educational initiatives. This, basically, is why the novel group must be a learning community, a new social phenomenon dedicated to intellectual and spiritual change.

Notes and References

1. See, e.g., "The Triune Brain, Emotions and Scientific Bias", in *The Neurosciences: Second Study Program* (F. G. Schmidt, ed.), NY: Rockefeller University Press, 1990. pp. 336-349.
2. The case of Phineas Gage is frequently quoted in evidence of this. By a bizarre accident, his prefrontal cortex was removed with surgical precision by an explosion which sent an iron rod up through

his temple and out through his skull. He was pronounced medically cured only two months after this traumatic event and returned to work, his competence as a workman unaffected. However, in the words of his physician, “the equilibrium or balance between his intellectual faculty and animal propensities” was destroyed. He became “fitful, irreverent, indulging at times in the grossest profanity which was not previously his custom ... impatient of restraint or advice when it conflicted with his desires ... obstinate yet capricious ... a child in his intellectual capacity [but with] the animal passions of a strong man.” As the neurologist Antonio Damasio comments, “Gage was no longer Gage” (*Descartes’ Error: Emotion, Reason and the Human Brain*. Picador, 1995. Chap. 2).

3. J-P. Changeux, *Neuronal Man: The Biology of Mind*. Princeton UP, 1997.
4. Thus love of our children is considered “natural” but not love of our neighbour. The latter begins, for most people, as a purposive and difficult response, but after much practice, and inevitably after much failure, it becomes increasingly automatic. I am reminded of an aphorism of the late Quentin Crisp, “Love is the extra effort we make in our dealings with those whom we do not like”. The religious discipline of constantly applied effort results eventually in a new quasi-instinct which makes not being nice to others feel unnatural. The sharp retort or cold-shoulder no longer seems to be the real “me”.
5. There are many popular books which give a more detailed picture - e.g., Rita Carter’s *Mapping the Mind* Weidenfeld & Nicholson, 1999. See also websites: BRAIN ATLAS on www.med.harvard.edu/aanlib/home.html; BRAIN WEB on www.dana.org/brainweb.
6. It is a recurrent theme in *The Journal of Consciousness Studies*. Cf., typically, James Newman, “Putting the Puzzle Together: Towards a General Theory of the Neural Correlates of Consciousness”, Parts I & II, in *JSC*, vol. 4, 1 and 2, 1997.
7. A concrete example of the way in principle of dimensionality enters into ethics can be seen in the matter of abortion. Some individuals (and religious groups) feel compelled to reduce it to an absolute

right or wrong decision, regardless of what collateral injustice is created. Secular law attempts to combine a “greater or lesser” rightness with a practical yes/no decision procedure by allowing abortion up to a given point of pregnancy, which varies widely from one judicial system to another. In real life, there are often many considerations to be balanced, and no authority to give the individual peace of mind by assurances that the right balance has been found. In this situation, it is by no means naïve for the religious person to ask, what would God want me to do? and accept that one will have to live with the decision. No one said that moral development was easy!

8. Thus Rita Carter: “Millions of neurons must fire in unison to produce the most trifling thought. Even when a brain seems to be at its most idle, a scan of it shows a kaleidoscope of constantly changing activity. Sometimes, when a person undertakes a complex mental task or feels an intense emotion the entire cerebrum lights up Little explosions and waves of new activity [create] a feedback loop that ensures constant change” (*Mapping the Mind*, p. 19).
9. See, e.g., his *Phantoms in the Brain* (Fourth Estate, 1999) and “The Limbic Fire: Neuroscience and the Soul”, *Science and Spirit*, Autumn 1999, an interview from which the information here on the role of the amygdala is taken.
10. See, e.g., Robert Adler, “Crowded Minds”. *New Scientist*, 18 Dec. 1999.
11. The literature is diverse and widely scattered, but the broad issue can be seen at micro-level in Manfred Eigen, *Steps Towards Life: A Perspective on Evolution* (OUP, 1992, esp. chaps. 9 & 10 on viral “quasi-species”) and at macro-level in Jacques Ruffié, *The Population Alternative: A New Look at Competition and the Species* (Pelican, 1987, esp. chap.10 on “Species, Races and Populations”. A recent editorial in *New Scientist* (20.11.99) suggests, “the term ‘species’ is so flawed that it has outlived its usefulness.”
12. Whyte’s influential work *The Next Development in Man* is a useful counterpoint to the present argument. He sees progress not in

developing a higher religious sense but in abandoning religion altogether, which he regards as superstition.

13. “We are Apes, Whether We Like it or Not”. *The Independent*, 12. 10. 99.
14. See Marcus Chown “The great beyond: Our Universe could be an island marooned in five-dimensional space,” reporting on theorizing and research at Stanford University. *New Scientist*, 18 Dec. 1999, p. 12.