THE SYNTHESIS

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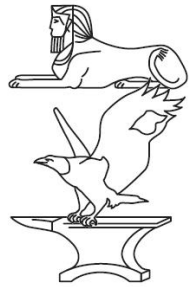

Published in 2008 by PWBC, London

Personal Well-Being Centre
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ISBN 978-0-9548387-7-5

Proofreading and editing: Julia Kantic

Printed in the UK, by Stephen Austin, Hertford

Cover image: Ring of Hot Blue Stars Pinwheels Around Yellow Nucleus of Hoag's Object Galaxy
Image credit: NASA and The Hubble Heritage Team (STScI/AURA)
Acknowledgement: Ray A. Lucas (STScI/AURA)

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PREFACE

Three social forces seem to be gaining momentum at present: religious fundamentalism among the affluent (who believe that it can help them preserve their status), religious fundamentalism among the deprived (who believe that it can help them change theirs) and secular relativism (predominantly among those occupying the middle ground). What all of them have in common is self-centredness and self-interest, which is not conducive to developing a global society. This book offers an alternative outlook, based on a shared purpose that could have a unifying power. Our choice at the moment is to live either in a rational but meaningless world, or in a meaningful but irrational world. The Synthesis is an attempt to see the world as both, rational and meaningful. Common sense, science, spirituality and philosophy are combined in a unique way to achieve this aim.

There are several instances in the text of an unconventional use of language:

S/he (pronounced /s-hi:/) is used instead of 'he or she'.
Shim (pronounced /ʃim/)is used instead of 'her or him'.
Shis (pronounced /ʃiz/) is used instead of 'his or her(s)'.
Shimself (pronounced /ʃimself/ is used instead of 'himself or herself'.

B.C.E. (before common era) is used instead of B.C.
C.E. (common era) is used instead of A.D.

THE METHOD

This book will discuss some fundamental issues, such as the nature and meaning of life, the nature of the mind, and biological, individual and social development. Before these subjects are considered though, the method used in the process needs to be clarified first.

Knowledge of the world, as the philosopher Aristotle argued many centuries ago, comes through experience interpreted by reason[1]. However, throughout history, experience as a source of knowledge has acquired different faces. For example, scientific observation is considered empirical (based on experience), but this is very different from ordinary experience - it is even assumed that to reach objectivity, scientists have to detach from any personal involvement. In fact, three qualitatively distinct types of experience can be recognised overall: personal experience, impersonal experience (observation), and transpersonal experience (experience that transcends common perception). These have led to three corresponding approaches to knowledge acquisition: common sense, science and spirituality. On the other hand, it is generally accepted that reasoning (the other component mentioned above besides experience) has given rise to philosophy[2].

What all these four approaches share is that they are dynamic processes. Due to language and other limitations, we can never grasp truth fully, but we can keep moving closer and closer. So, in principle, knowledge acquisition can go on endlessly. However, each of these approaches has been situated within social frameworks and practices that have an organising and restraining function. Common sense is rooted in various cultural settings, science is normally associated with materialism, spirituality is traditionally linked to various religions, and philosophy is frequently embedded in certain ideologies or '-isms' (such as Marxism, existentialism, post-modernism).

In this part, common misconceptions about these four approaches, their relevance, the relationship to their respective social frameworks, and their limitations are examined first. On this basis two claims are made. One is that each of them is incomplete on its own. The other is that remaining strictly within their respective frameworks is not helpful any longer. It is suggested that more comprehensive and coherent understanding than we have at present requires rising above the existing frameworks and the synthesis of essential elements imbedded in these approaches. A model that attempts to do so (and is implemented throughout the book) is described at the end.

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[1] The concern here is only with unmediated knowledge. Indirect sources, such as verbal communications or written materials, may well be the main ones nowadays. They are not included as a distinct category though, because of their derivative nature (in principle, they can be traced back to the above sources).

[2] In practice, of course, none of these approaches relies strictly on one source, and they all use reason to some degree.

THE COMMON SENSE APPROACH

Common sense is based on ordinary personal experiences (that are then shared). Although often neglected in scholarly writings, it is the most widely spread way of acquiring knowledge, skills and understanding. Common sense essentially uses heuristic methods that enable drawing intuitive insights or tacit knowledge from our experience. Because of such a nature, common sense is best expressed through narratives (myths, stories, articles, movies), although its vocal supporters sometimes come from other fields (e.g. mathematician Thomas Reid and philosopher George E. Moore).

SOME MISCONCEPTIONS ABOUT COMMON SENSE

Common sense is less valid than other approaches - the success of science in particular has often led to a derogatory attitude towards common sense (sometimes labelled 'folk psychology'). To show its apparent inferiority, the examples of people believing in the past that the Sun goes around the Earth or that the Earth is flat are often brought up. Common sense, indeed, can sometimes be wrong, but this cannot justify diminishing its value and importance. Most of the knowledge gained in such a way has at least a pragmatic validity. Other approaches, when they go against common sense, more often than not eventually appear to be mistaken. For example, during the reign of behavioural psychology many parents were indoctrinated to bring up children in the 'scientific' manner, which appeared to be, at least in some instances, damaging for children and parents alike. Eventually, such ways of upbringing were abandoned and common sense prevailed again (even the wife of John Watson, who founded behaviourism, admitted that she was not a good behaviourist in this respect).

Common sense is simplistic - in fact, common sense is probably the most intricate approach of all. This is because it deals with non-linear, complex systems. Linear systems may be more precise, but they are inevitably simplifications and therefore not fully adequate in many situations.

Common sense is relativistic - common sense may, indeed, vary from individual to individual or from culture to culture to some extent, but it is often forgotten that what people share is much greater than what they do not. Common sense, stripped of its cultural idiosyncrasies, can be surprisingly universal. The differences are often the result of an adaptation to diverse (historical or present) circumstances.

THE RELEVANCE OF COMMON SENSE

Common sense is the basis for the other approaches. Science, philosophy and spirituality may try to move away from personal experiences but they all have roots in, and must start from common sense. As Reid pointed out, those who ignore the common-sense principles in building their metaphysics find their reductive constructions built upon sand, which makes reaching the conclusions that their own positions require impossible (Honderich 1995, p.142). Although science sometimes corrects the errors of common sense, even scientific theories ultimately depend on its support.

The other value of common sense is that it can deal with complex systems that are difficult to address adequately by using other approaches. Even with all the help of modern technology, science sometimes needs years to prove what is self-evident from the common sense perspective, and some phenomena may be so intricate that science or philosophy may never hope to achieve fully independent results and have to invoke a commonsensical evidential basis. Futurist Alvin Toffler (of 'Future Shock' fame) writes:

> Where 'hard data' are available, of course, they ought to be taken into account. But where they are lacking, the responsible writer – even the scientist – has both a right and an obligation to rely on other kinds of evidence, including impressionistic or anecdotal data and the opinions of well-informed people (1970, p.15).

One simple example is that most of us have few difficulties accurately reading even subtle emotional states of others. After many years of research science is making some progress in this direction, but it is still far from being able to match the subtlety taken for granted in personal experiences.

Common sense has a huge practical value. Everyday life and human reactions are to a large extent based on personal experiences rather than scientific, spiritual or philosophical insights. Common sense does not rely on verbal interpretations, so it can be more direct and quicker. Such an intuitive grasp of a situation is often essential.

This approach can also guard against the extremes of the other ones. For instance, although reductionist science denies phenomena such as free will, the self and sometimes even the uniqueness of experience, ordinary life and language go on regardless, fully acknowledging them (e.g. every legal system is based on personal responsibility and hence, assumes the notion of free will[1]). There is a sort of 'bad faith' among scientists, philosophers and those with spiritual inclinations who take for granted certain beliefs in day-to-day life, but deny the same in their practices.

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[1] Judge David Hodgson has written extensively on this topic (see, for example, Hodgson, 1994).

COMMON SENSE AND CULTURE

As already mentioned, culture can be taken as a social framework of this approach. Any culture is, to a large extent, an external expression of common sense, its formalisation within a particular community. Such cultural frameworks have had an important role throughout history in the preservation and homogenisation of societies. However, culture can also be restrictive and distorting. Common sense tends to be solidified and transmitted inertly by the culture it is embedded in. This solidification is often the reason why common sense in some cases appears to be in conflict with rationality and gives rise to superstitions.

Superstitions are often associated with spirituality, mysticism and the like, but this is mistaken. Even atheists can be superstitious (and, of course, spiritual people may not be). It is more likely that superstitions and other cultural idiosyncrasies originate in individual or group interpretations of personal experiences that in some instances become collective beliefs. This is why there are many superficial differences among cultures. For example, a black cat crossing one's path is interpreted as good luck in one culture and bad luck in another. Both interpretations might have had local historical bases that were lost, while only the form (in this case an association between the colour of a cat and luck) has remained. In other words, something that perhaps made sense in certain circumstances may be perpetuated by culture even after it ceases to make sense.

Hostility towards homosexuality in many cultures, for instance, could have been, to some extent, justified in the past by fear of annihilation, when a culture was preserved in relatively small communities that needed to reproduce in order to secure their survival. After all, the Spartans (who won the war against the Athenians) seemed to disappear partly due to practically constitutionalised homosexuality that led to a decrease in their population. However, nowadays, when there is no danger that a national entity or culture may be extinguished because of lack of off-spring, there is no reason for such hostility. Yet, many cultures still harbour an antagonistic attitude towards homosexuality. Other sinister attitudes such as chauvinism, racism, xenophobia, sexism and so on, may also have been cultural distortions of certain social processes (e.g. the division of labour) that may have made sense at a particular historical moment. The same, of course, applies to epistemological issues: how reality is perceived and interpreted. It is not surprising then, that many misunderstandings and unnecessary frictions surface in a world with so many cultures. This is not to say that cultural differences should be disregarded but, especially in multicultural societies, a heavy reliance on culture can be divisive rather than unifying (leading, in some cases, to self-imposed ghettoisation).

THE LIMITATIONS OF COMMON SENSE APPROACH

The limitations of this (and other) approaches can be grouped in three categories: extrinsic ones (the result of factors extraneous to experience), limitations of common sense as a social practice (ensuing from the way knowledge is shared and communicated) and intrinsic limitations.

Extrinsic limitations

Bias - insights based on personal experiences are difficult to distinguish from one's preferences, desires or fears. They are often coloured by the character of the person and shis past. Also, there is a tendency to interpret these insights in such a way as to satisfy one's needs and confirm existing beliefs, which may give rise to superstition and other unproductive ways of explaining reality. Even if this subjectivity is avoided, such insights are shaped by specific circumstances and may lack universality.
Dogmatism - when beliefs based on common sense become embedded in a particular cultural framework, they are very difficult to change and often become dogmatic.

Limitations of common sense as a social practice

Elusiveness - common sense is based on clues often too complex and subtle to be rationally explained and systematically described. This is why common sense, more than any other approach, finds its expression in narrative art (from myths and dramatisations to stories and films). However, such a way of knowledge transmission may be sometimes vague and not easily understood.

Intrinsic limitations

Limited scope - common sense is limited in scope. Not all aspects of reality are accessible to personal (even if collective) experiences. The far corners of the universe, the world of subatomic particles, or the processes in the living cell, are not within the reach of common sense. By the same token, an exploration of reality beyond the ordinary perception require a transcendence of typical personal experiences. Furthermore, some understandings can only be achieved by using logic and reasoning in a more systematic and strict way than common sense usually does.
Imprecision - common sense relies on 'rule of thumb' methods and, therefore, is not very precise. This often does not matter, but sometimes more exact methods are needed.

The above indicates that common sense is a valuable approach but not sufficient on its own, so it needs to be combined with other ones.

THE SCIENTIFIC APPROACH

This is the dominant approach at the moment. At its best, it combines inductive method (observation and experiment) and deductive method (e.g. theories, mathematical findings) and produces reliable explanations of natural phenomena.

SOME COMMON MISCONCEPTIONS ABOUT SCIENCE

Science is a modern Western invention - there is a widespread belief that science was invented in Europe and did not exist before the 17th century. In fact, science has thrived in various parts of the world (e.g. in the Arabic, Indian and Chinese cultures) since ancient times. The science of the present day is influenced and partly based on their findings. Ancient and Middle Age Europe had science too (although, following St Augustine, the observation was rejected in favour of deduction). What modern science that started in the period of Enlightenment did, was to shift the emphasis to inductive method[1]. Its original aim was to dispose of speculations and place science on firmer foundations. However, over time, only the observation of natural phenomena and experiment have become a legitimate science.

Science and technology are the same - although they may contribute to each other, science and technology should not be equated. Science is about increasing human knowledge and understanding, while technology is about producing tools, more often on the basis of trial and error than scientific discoveries[2] (Edison, one of the greatest inventors, for example, was *not* a scientist). Technology existed before science and thrived even when science was suppressed (for example in Byzantium and occasionally in China).

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[1] An inductive argument involves a generalisation based on a number of specific observations. A deductive argument, on the other hand, begins with particular premises, and then moves logically to a conclusion which follows from those premises. Therefore, deduction is more theoretical.

[2] The following observation may be illuminating in this respect: '… up to [the mid nineteenth century] natural science had made no major contribution to technology. The industrial revolution had been achieved without scientific aid. Except for the Morse telegraph, the great London Exhibition of 1851 contained no important industrial devices or products based on the scientific progress of the previous fifty years. The appreciation of science was still almost free from utilitarian motives' (Polanyi, 1958, p.182).

Science and technology have sometimes even been in conflict in the Western world. When the first commercial trains were produced, scientists warned that people could not tolerate travelling faster than 30mph. While the pioneers of air flights were struggling to make the first aircrafts, scientists (and journals such as the 'Scientific American') stubbornly resisted the possibility that a heavy solid object could fly, and refused to acknowledge the success of the Wright brothers even after many demonstrations. William Preece, one of Britain's most distinguished scientists at that time, declared Edison's attempt to produce the electric bulb 'a completely idiotic idea' and rejected Bell's telephone. There are many other examples of technology advancing not because of, but despite official science (and there are also examples of scientific discoveries that have much preceded their practical applications or technological devices that would support them). In practice, the difference between science and technology is clear. The patent law, for example, 'draws a sharp distinction between a *discovery*, which makes an addition to our knowledge of nature, and an *invention*, which establishes a new operational principle serving some acknowledged advantage' (Polanyi, 1958, p.177). The latter can be patented; the former is the property of all. In recent times, however, for whatever reasons, identifying science and technology has been encouraged.

Science is only compatible with materialist ideology - this is often taken for granted by many scientists and non-scientists alike. Yet a materialistic position is not innate to science. Science was linked to materialism in the 19th century Europe to secure the supremacy of a particular method[1]. Many of science's greatest names were not materialists: Copernicus was a priest, and Mendel, the founder of genetics, was a monk; Newton was deeply religious (occasionally using theological arguments in science, such as when he suggested that the world has an atomic structure because it is most conducive to God's purpose). Even Galileo never had a quarrel with God, only with the Church; astrophysicist Lemaître who first proposed the idea of the Big Bang in the 1920s, was also a priest. The inventor of the laser and Nobel prize laureate for physics, Chares Townes, had spiritual inclinations, as well as Faraday, Joule, Kelvin, Maxwell, Tesla and even Einstein. Science neither has proved nor can prove that reality is only material. There is nothing intrinsic to science that would preclude the possibility of non-material aspects of reality, although studying such phenomena would possibly require a different method. In fact, some branches of science (e.g.

[1] The claim that all reality is physical was explicitly expressed even later, in 1963 by philosopher J. J. Smart, who stated that 'there is nothing in the world over and above those entities which are postulated by physics' (1963, p.651).

quantum physics) have already moved away from assuming that matter and the laws that govern it make the basic fabric of the universe.

Science is about collecting data, classifying and describing observable phenomena - this is only one form of science. An attempt in the 19th century to reduce science to such endeavours did not succeed. In fact, there are three distinct aspects of science: theoretical insights based on rational principles and using methods such as mathematics, geometry and logic; empirical research based on observation and experiments; and the interpretation of data. These three aspects do not always go together. Some landmark theories were even based on incorrect data (e.g. Galileo's work, or the theory or relativity in relation to the Michelson-Morley experiment of 1887[1]). Einstein famously said that 'it is theory that teaches us what observations are and what they mean' (Honderich, 1995, p.807).

Science is fully objective – scientifically 'objective' means that a number of experts agree about the likelihood of certain claims. So, the objectivity of science is valid only within an already accepted framework (that itself cannot be objectively justified[2]). For example, what sort of experiments are carried out, what is looked for in an experiment, how the data is interpreted and so on, depend on the experimenters' pre-assumptions. Moreover, as historians and sociologists point out, 'scientists often depend on patronage and choose their problems and their methods accordingly' (Honderich, 1995, p.808). Even if this is put aside, an ambiguity remains: how do scientists know that an experiment has been done in the right way if they do not know the right outcome? Relying on stringent procedures may not be enough. For instance, experiments on gravitational radiation suppose to establish whether these tiny fluctuations exist or not, but there are so many factors that can effect such experiments that any conclusion can be questioned. Although science strives to be objective, in many cases scientific certainties are not so much the result of experimental method, but rather the way often ambiguous

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[1] According to Einstein own account, the Michelson-Morley experiment had, in fact, a negligible effect on forming his theory. The philosopher of science, Polanyi, claims that 'its findings were, on the basis of pure speculation, rationally intuited by Einstein before he had ever heard about it' (1958, p.10).

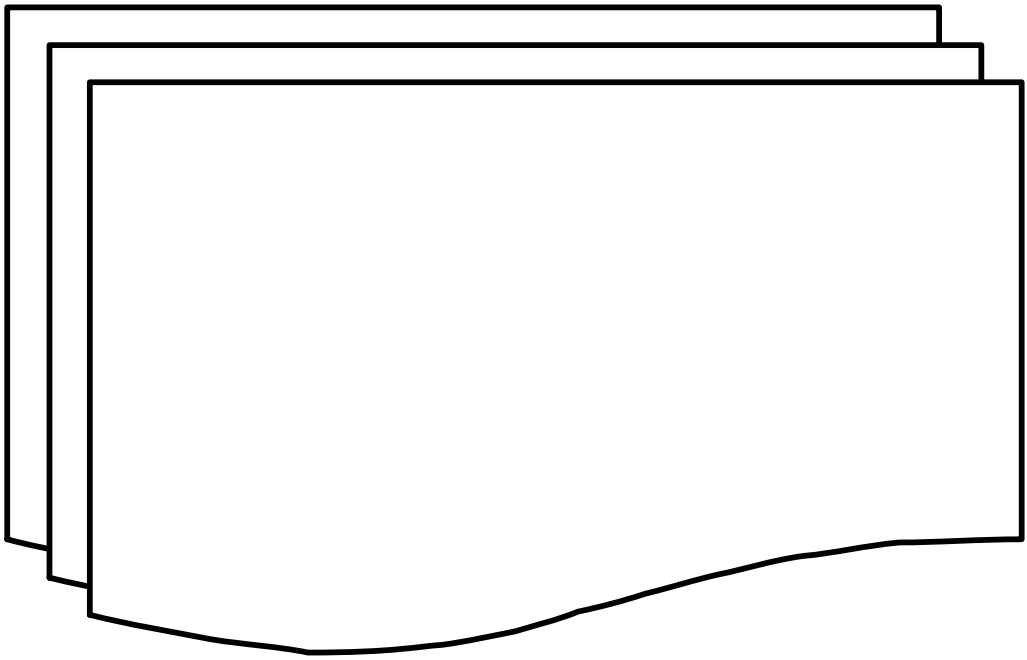
[2] The following statement is still relevant: 'Ernest Nagel writes that we do not know whether the premises assumed in the explanation of the sciences are true; and that were the requirement that these premises must be known to be true adopted, most of the widely accepted explanations in current science would have to be rejected as unsatisfactory. In effect, Nagel implies that we must save our belief in the truth of scientific explanations by refraining from asking what they are based upon. Scientific truth is defined, then, as that which scientists affirm and believe to be true' (Polanyi, 1969, p.73).

results are interpreted. Perhaps not surprisingly, scientists tend to dismiss measurements or outcomes that do not fit with the established theories. The famous physicist Robert Oppenheimer allegedly commented: 'We can't find anything wrong with it, so we will just have to ignore it'.

Scientific knowledge is proven knowledge - science heavily relies on and is biased in favour of inductive method (observation and experimentation). However, in the 18th century, the philosopher Hume pointed out that inductive method, though attractive and useful, was logically invalid. It is not only that the predictions one can make on the basis of induction are not fully reliable, but also that they are not even the only predictions consistent with the accumulated evidence. This is not to say that induction is not valuable, but that relying on this method alone is not sufficient. In an attempt to get around this problem, the philosopher of science Karl Popper argued that science is not about proving that a conjecture is true, but proving that it is false. This is called falsificationism. Science progresses by attempting to falsify theories rather than by proving them to be true.

Science provides a coherent, unified perspective - no branch of science provides a complete picture of its field. There are still many fundamental questions that remain unanswered (how the physical forces relate to each other, the origin of the universe and life, how proteins unfold and how an embryo is formed, what is consciousness and how it relates to the brain etc.). Some accepted theories are not even mutually compatible (e.g. the theory of relativity and quantum physics). Even within the same field certain phenomena are interpreted in contradictory ways (light, for instance, is sometimes considered a wave and sometimes a particle, although their properties are irreconcilable). Scientists among themselves often disagree, as the existence of many competing theories shows. In fact, according to the philosopher of science David Chalmers, there is no single category 'science' (1980, p.166). Attempts to apply the same method to every branch of human knowledge have failed to produce the desired results.

The scientific worldview is timeless - despite the tendency to present scientific results and theories as timeless, they are in fact not. In the 1960s Thomas Kuhn famously proposed that science evolves through paradigm shifts - one dominant view is replaced with another, and this process does not depend only on scientific discoveries. An obvious example is a shift from the Maxwellian Electromagnetic view to the Einsteinian relativistic view, but there are many other albeit less grand cases in every branch of science. The concept of paradigm shifts in its original form may be open to some criticisms, but the validity of its basic tenet is hard to dispute.



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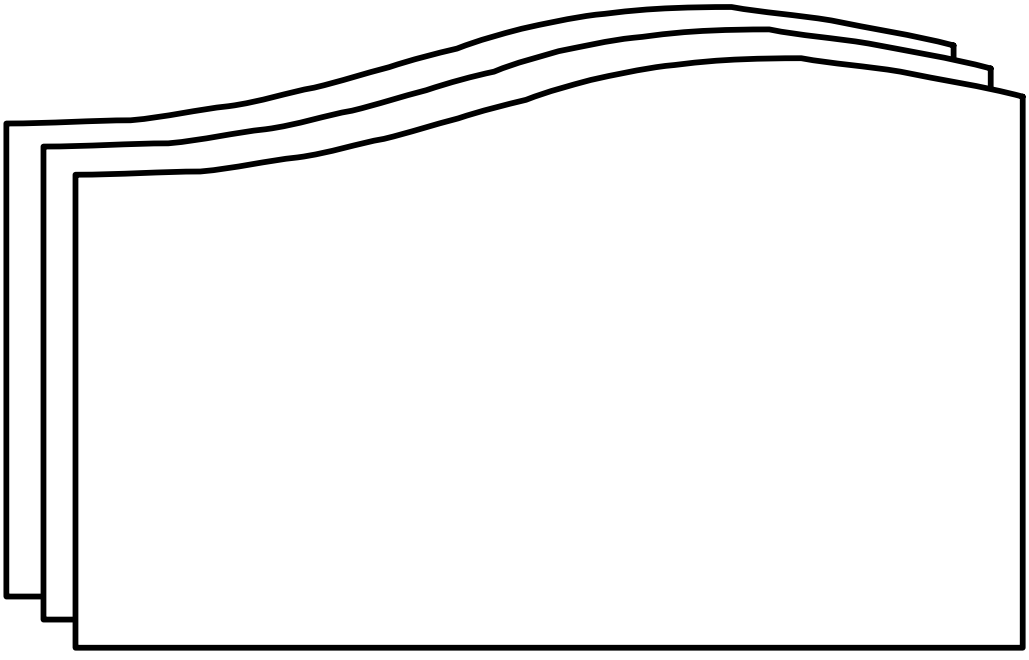

THE SYNTHESIS

All the above approaches contribute in their unique ways to the understanding of reality, but none of them is likely to provide a full picture. Not only are they incomplete and insufficient on their own, but they also seem to be stuck in ostensibly irresolvable conflicts with each other. Francis Bacon and Descartes (who are considered the founders of opposed factions in philosophy, *viz.* empiricism and rationalism) agreed on one point: to separate religion and the study of the natural world. They may have been right to do so at the time when the Church was all-powerful, but this does not mean that scientific and spiritual approaches are inherently in conflict. They appear so only because of ideological prejudices in both campuses. Many scholars seem to be arriving at the same conclusion starting from different perspectives[1]. Reality can be interpreted as meaningful without conflicting with empirical facts. Polanyi and Prosch make the point stating that 'the religious hypothesis, if it does indeed hold that the world is meaningful rather than absurd, *is* therefore a viable hypothesis for us. There is no scientific reason why we cannot believe it' (1975, p.179).

This is not only of theoretical significance. Our very survival may depend on an ability to transcend what is superfluous and synthesise what is important in these approaches. Human society cannot long afford to live in a world in which philosophy is disparaged, religion contradicts science, and science contradicts common experience and social practice (e.g. democracy assumes choice, and legal systems personal responsibility - both are based on the notion of free will that is not upheld by science). Such antagonisms must be reconciled in order to produce a more adequate and complete interpretation. This does not require the abandonment of the current methods (they have contributed to knowledge and continue to do so), only a recognition that they have limited value in isolation and that, in some cases, it would be beneficial to combine them[2]. In order to do so, there are two obstacles that must first be overcome:

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[1] For example, Schrödinger, who formulated the fundamental equation of quantum mechanics, espoused in his book *Mind and Matter* (1958) a spiritual view that he identified with the 'perennial philosophy' of Aldous Huxley, and expressed his sympathy for the *Upanishads* and Eastern spiritual thoughts.

[2] It has been recognised that 'objections to novelty and to alternatives come from particular groups with vested interests, not from science as a whole. It is therefore possible to gain understanding and to solve problems by combining bits and pieces of 'science' with prima facie 'unscientific' opinions and procedures' (Honderich, 1995, p.809).

Exclusiveness stems from a belief of 'insiders' that their perspective can grasp and explain everything on its own[1]. This is, however, highly unlikely. For example, science has a reliable method but a limited scope. Spirituality, on the other hand, can perhaps reach what is not accessible to science, but its insights cannot be easily verified and are prone to distortions. As Albert Einstein famously put it, 'science without religion is lame; religion without science is blind' (Einstein was not practising any religion, so in this statement he most likely referred to spirituality). It is not surprising then that the frameworks they are associated with are not satisfactory. While religious interpretations are generally outdated, materialist interpretations are fragmented and incomplete. In other words, religion on its own provides an irrational interpretation, while materialism on its own provides a meaningless interpretation.

Ideological baggage - history shows that when one of these approaches takes over and starts dominating, it easily becomes a form of ideology with undesirable consequences. The canonisation of religious ideologies has frequently led to the slowing down of individual and social development, and also (with a few exceptions) created a state of permanent conflict and bigotry between different faiths – without change there is no hope for reconciliation. There is a profound awareness that an overgrowth of materialistic science and technology could also have a potentially devastating outcome if it is not paralleled with the development of other ways of knowledge. The aviator Charles Lindbergh made this poignant comment: 'I have seen the science I worshipped and the aircraft I loved destroying the civilization I expected them to serve.' This, of course, does not refer only to the destructive power of machines, but also to zealous attempts to implement scientific methods in life, especially human life (eugenics and social Darwinism being two examples). An even more pervasive consequence of materialism is a climate in which technocracy, meaninglessness, selfishness, competition and consumerism dominate, which also prevents further progress and ultimately leads to a dead-end. With equally disastrous consequences, cultural frameworks and philosophical ideas can be turned into a tool of repression (nationalism and Marxism may be prominent but certainly not unique examples[2]). Even if the

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[1] Scientists are most susceptible to this belief nowadays because their approach is dominant. But, as the philosopher of science Feyerabend points out, defenders of science typically judge it to be superior to other forms of knowledge without adequately investigating those other forms.

[2] Nietzsche's own sister revised his writing to provide support for the ideology of racial supremacy. Philosopher Heidegger advised his students in 1933 to abandon doctrines and ideas and salute Hitler.

above cases are considered historical aberrations, there is a more subtle but enduring problem with ideology of any kind. Ideologies are linked to social power and control. However, power unlike knowledge is finite. Giving knowledge to others does not decrease the knowledge of the one who gives, but giving power to others does. Therefore, unreflective faith in an ideology, regardless of whether it has a spiritual, scientific or philosophical basis, decreases the power of individuals. This in turn limits the fluidity or flexibility of society, which are essential in times of rapid changes.

Overcoming these obstacles would make a synthesis possible, but this does not mean only refining and combining the methods embedded in the above approaches[1]. It also implies a synthesis between several complementary perspectives.

First of all, the bottom up direction (reductionism) needs be combined with the top down direction (holism). Reductionism attempts to explain complex phenomena by their components, while holism claims that the significance of the parts can only be understood in terms of their contribution to the whole and that the latter must therefore be epistemically prior. Most approaches have a tendency to favour one of these perspectives (e.g. reductionism in science), but this does not need to be the case. It is possible to recognise the value of both.

The synthesis also requires reconciling two ways of enquiry: one that examines the objects of experience (experimental), and the one that examines the experience of objects (experiential). A comprehensive and accurate interpretation must rely on both, objective knowledge derived from manipulating reality (e.g. by creating controlled conditions in a laboratory) and objective knowledge derived from manipulating the experience of reality (through personal transformation). *Objective* means, in this context, avoiding collective bias (ideological constraints) or personal bias (prejudices, preferences) respectively.

Finally, empiricism (in a broad sense, that includes common sense and transpersonal experiences) needs to be combined in a meaningful way with rationalism. This can surely be more productive than relying solely on either experience or reason.

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[1] Of course, there are already grey areas and points of contact among them. Philosophy of religion and philosophy of science are well established disciplines. Some theologicians have thought that a scientific approach is the best means to understand God, while others have resorted to philosophy. However, these are rarely efforts in synthesis, but rather attempts to use one approach to support (or discredit) another. For example, Logical Positivism, a highly influential philosophical movement of the 20th century, was largely created by scientists with a certain ideological bent in order to steer science in their preferred direction.

When the approaches discussed above are separated from their ideological baggage and the spurious ways used to support their claims, a small number of methods remain. Three methods that relate to three types of experience as a knowledge source (personal, impersonal and transpersonal) can be discerned: *phenomenological*, *inductive-deductive* and *transpersonal*. However, none of them is infallible and fully sufficient, so another method, *reasoning*, that can serve as a link between them is also needed. Of course, not all of these methods must always be combined (there are some areas where only one is enough), but their synthesis is likely to produce a more complete picture. Before they are described though, it should be underlined that any method is only a tool, not an end in itself. Some scholars emphasise a form and correct procedures because this gives their work an aura of seriousness and credibility, but it also often kills enthusiasm and creativity.

PHENOMENOLOGICAL METHOD

This method can be used to achieve greater objectivity in relation to personal experiences (linked above to common sense). It has been already recognised that scientific observation, as a method, is somewhat limited. It cannot penetrate 'below' the surface of the observable. This is a statement from mathematician Srivastava:

> Gödel's theorem states that, loosely speaking, in any mathematical system which has the natural numbers (the numbers 0, 1, 2, and so on) as a subset, questions exist which cannot be answered yes and no… What all this means is that science is basically handicapped or limited in its capabilities. It is not possible by a series of experiments and related analytical reasoning to fathom the depth of the universe. To fathom the universe, man has another tool: direct perception, direct experience of reality (in Singh, 1988, p.177-178).

The problem is, however, that this 'direct experience' typically remains on the surface of personal bias, and cannot claim universality. If there is any 'essence', it has to lie below the objective surface of the reality and the subjective surface of individuals. So, only in the depths can the dichotomy between objectivism and subjectivism be overcome. Such objectivity is not based on facts 'out there' or on a social consensus. It is not achieved by moving outwards and away from oneself, but by moving inwards, reaching underneath personal subjectivity, finding what is universal in one's experience[1]. This is achieved by submerging oneself below interpretations based on superficial perception, collective pre-assumptions or one's own prejudices and preferences.

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[1] Polanyi makes the same point: '…man can transcend his own subjectivity by striving passionately to fulfil his personal obligations to universal standards' (1958, p.17).

The method that can assist this process is called phenomenological reduction. The term was coined by philosopher Husserl at the beginning of the 20th century, but interpreted in a broad sense (as a method rather than a philosophical doctrine) it has been practised since ancient times. This is its clearest and shortest definition:

> Phenomenology is […] a turn to subjectivity with the intention of arriving at objective truth. (Solomon, 1988, p.130)

The aim is to get insights about essence from experience alone rather than through the veil of existing mental constructs. In other words, the object of phenomenological description is 'to… go beyond the various 'facts' of experience and the reality of theories and practices to those features of experience which are "absolutely given in immediate intuition"… Not the evidence of the senses but of the consciousness as such' (Solomon, 1988, p.131). In fact, all personal experiences are phenomenological and as such they are real and true. What, however, can be distorted (intentionally or not) is their interpretations. An extreme example is hallucination, where an internal experience is interpreted as an external event. Interpretations are, of course, necessary and useful, but they are usually contaminated by past experiences, expectations, judgements etc. Phenomenological method means being able to examine experience as it is, prior to these possible distortions[1]. To achieve this, one needs to become aware of what comes from the phenomena experienced and what does not. This is not as easy as it may seem. It requires vigilance and discipline in 'bracketing' (putting aside) any pre-assumptions that are added to an experience.

Phenomenological method is indispensable if insights from personal experiences are to have a degree of universality (a greater level of objectivity). However, it falls short of providing a way to construct reliable interpretations from them (to bring them back to the surface). And yet, interpretation is necessary in order to communicate these insights. Furthermore (as already pointed in *The limitations of common sense*, p.9), personal experiences are somewhat limited in their scope. So, this method is insufficient on its own and needs to be combined with others.

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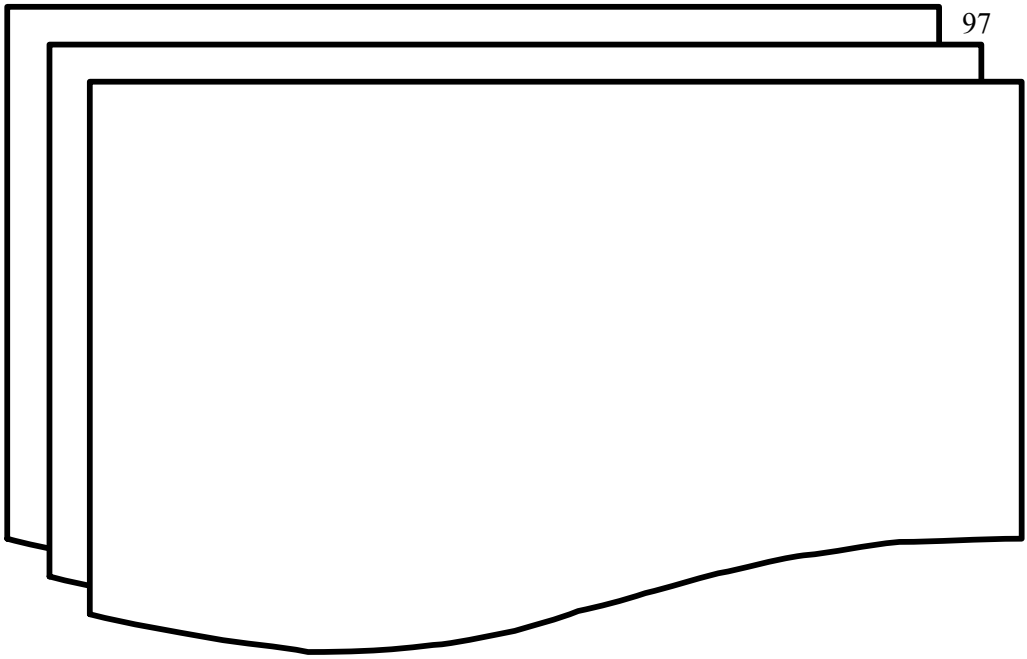
[1] To quote again the historian of philosophy, Solomon, 'it is… a description of experience and a philosophy that is without presuppositions, and experience of experience as such, an opportunity to see clearly and without doubts the essential structures of not only one's own consciousness but of every possible consciousness' (1988, p.138).



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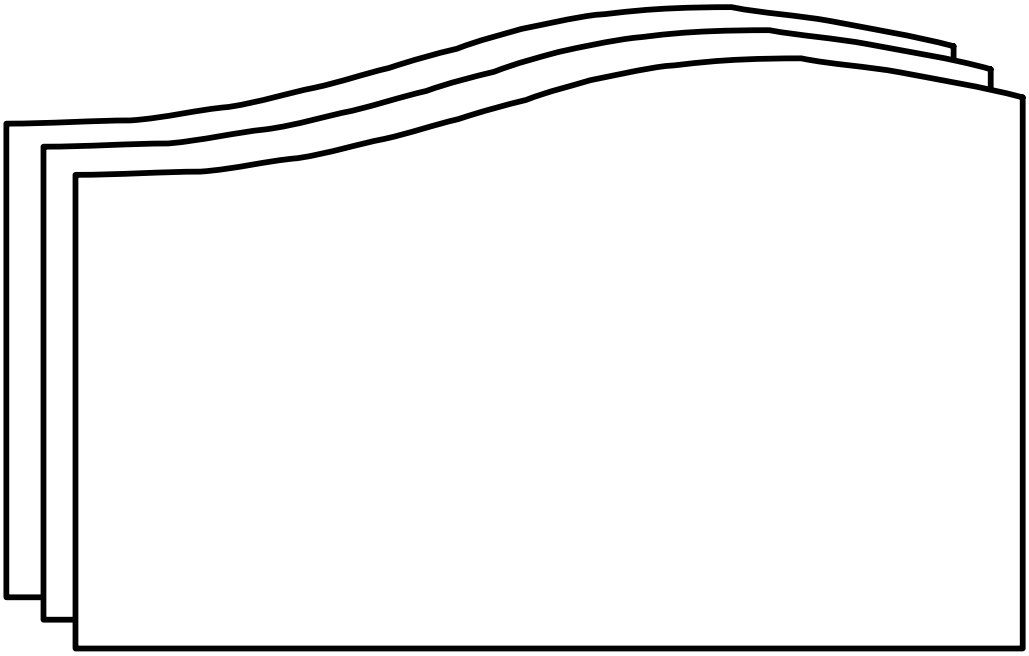

THE MEANING

THE ORIGIN OF THE PHYSICAL WORLD

THE EXISTING VIEWS

Religious - the origin of the world in most religious texts is described in essentially teleological terms, which means that this subject is intertwined with the issue of meaning or purpose, and usually implies the involvement of an agency. Such views are possibly based on genuine spiritual insights, but they are interpreted within historically and culturally specific constructs. So, it is not surprising that religious explanations often appear to be in conflict with facts and reasoning. To bring just one example, in *Genesis,* it is claimed that the Sun was created after the planet Earth, contrary to the accepted fact that stars must have appeared before planets. Nor does the image of an anthropomorphosised creator and his actions seems to be helpful. Of course, these descriptions can be taken as merely metaphorical expressions, but it is not clear what these metaphors stand for, beyond acknowledging the necessity of an agency.

Philosophical - philosophy seems at a loss regarding the question of the beginning. Aristotle and other Greek philosophers believed that the universe is infinite and therefore does not have a beginning, it has existed and it will exist forever, but this standpoint has been heavily criticised from both rational and empirical perspectives[1]. Philosopher Kant called the question of origin an antinome because apparently both possibilities, that the universe has the beginning and that it does not, seem to contradict reason (this is true, however, only under certain assumptions, such as that time continues back for ever in each case).

Materialistic - science has avoided the incongruences present in religious interpretations, but some fundamental questions, such as how and why the universe came into existence and why it has certain properties, may not been within the reach of its method. Starting from an *a priori* assumption that the whole of reality can be reduced to its physical aspect (which is required in order to fit the materialistic framework) may lead to an impossible situation. It is comparable to a chick inside an egg that tries to find out how the egg was created, ignoring the possibility that anything outside the egg may exist.

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[1] Not all these criticisms have been justified, though. For instance, philosopher Heinrich Olbers' objection that an infinite static universe would have so many stars that the sky should be bright at night as if it was daylight, does not hold water: the light of far stars would be in the invisible infra-red spectrum. This example is worth mentioning because it highlights the need for philosophy to pay attention to science.

The commonly accepted interpretation in scientific circles at the moment, that everything came from nothing, in no time and for no reason, and yet in a very orderly and precise manner, seems as absurd as the claim that an all powerful anthropomorphic being created the universe in six equal time periods[1]. The Big Bang and quantum singularity (a single point of infinite compression from which the Big Bang started) do not dispose of the questions of how and why the universe was born - only of science as it is, because the laws of physics break down near a singularity. And, closing the case just because of methodological limitations cannot be justified. Some scientists try to get away with the answer that nothing could have existed before and caused the Big Bang because time itself started with it. Even if time, as presently conceptualised, had not existed (the idea first expressed by theologian St. Augustine) this 'solution' is not satisfactory. Imagine that you dream two people discussing how the dream came to existence. One may claim that because the 'dream-time' started with the dream, nothing could exist before the dream and therefore cause the dream. But this, of course, would be mistaken. The starting premise only implies that dream-time is different from awake time. By the same token, it can be postulated, for example, that the universe is contained in reality with a different time (e.g. non-entropic one) or more radically, that in reality without matter, movement may not be bound to the concept of time at all. In other words, movement may exist without time - recognised as such in relation to other events, rather than to an abstract notion of time. There is also another problem. It is probably true that if one starts from a mathematical description of the universe as it is and goes backwards, everything *can* lead to a point from which the process began. However, that the universe can be traced in such a manner does not necessarily mean that the events unravelled forward in the same way. For instance, a glass can be mathematically traced back to the chemical components of the material and the way they combine, without taking into account that, in order to produce a glass from these components, a glass maker is necessary.

Neither of the above viewpoints seem to offer a fully satisfactory interpretation. This is probably the case because they stick to ideological frameworks that are inherently limited. Before considering an alternative though, certain features of the physical world need to be examined first.

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[1] The advocates of both views can claim that they seem absurd only to outsiders because they lack a full understanding. This would mean though, that one has to accept a certain framework first, to become a believer (in materialism or a monotheistic religion). But, why would anybody wish to do so, if these frameworks do not look credible in the first place?

SOME CHARACTERISTICS OF THE PHYSICAL WORLD

The issue of the origin of the physical world is important, because it can cast the light on the question of whether it is purposeful. A purposefulness would imply that sentience is not only necessary to investigate reality, but is also its essential ingredient. On the other hand, if the universe is the result of random meaningless events, sentience may be only an accidental by-product. Examining some characteristics of the physical world can help in determining the likelihood of the above possibilities.

One striking feature of the universe relevant to this question is its orderliness, conformity to formula and rational laws perfectly suited for life. It is often (somewhat inaccurately) referred to as the *Anthropic principle*. The universe could have been chaotic, but it is not – it is very orderly. The Big Bang theory does not predict that all its properties have to be so finely tuned. There are infinite possibilities of bad balance that were far more likely to emerge if it was only down to chance. Any of them could have produced a universe that was incapable of generating stable stars, planets and life. Some examples will be highlighted to bring home how remarkable this is.

The Big Bang

To have a universe that will sustain galaxies, stars, planets and life, the conditions at the beginning must be right within very narrow ranges. The universe had to start with the right density, amount of inhomogeneity of radiation, and the initial rate of expansion.

Apparently, there was a slight excess of matter over antimatter (baryons over anti-baryons, electrons over positrons, etc.) at the initial stages of the universe. If this excess had been smaller, there would have not been enough matter for galaxies and stars to be formed. If it had been greater, there would have been too much radiation for planets to emerge.

The initial inhomogeneity ('lumpiness') in the distribution of radiation was also necessary for the appearance of stars and galaxies. However, too much inhomogeneity would have led to black holes being created before stars.

If the original velocity of expansion had been one millionth greater, the heavier elements and stars would never have come into existence; if it had been one million millionth smaller, the universe would have collapsed before it was cool enough for the elements to form.

The present theories do not imply that this set of conditions had to exist. There are many other possible combinations that would not support stars, planets and life.

Subatomic particles

Each particle has a few defining properties which determine its behaviour. These properties are always and everywhere the same. For example, all electrons have a charge of –1 and a spin of ½; all positrons have identical properties to electrons, but a charge of +1; all protons have also the same charge and spin, but a much greater mass. There are a countless number of particles with these characteristics, but no known particles with intermediate features between the two kinds. Moreover, their features seem to be *mutually* tuned. For example, despite their huge difference in mass, for a reason unknown to science, the electrical charges of electrons and protons match precisely. If they did not, all material configurations would be unstable and the universe would consist of nothing more than radiation and a relatively uniform mixture of gases. This can hardly be just an accident. The celebrated scientist Hawking writes:

> The remarkable fact is that the values of these numbers seem to have been very finely adjusted to make possible the development of life. For example, if the electric charge of the electron had been only slightly different, stars either would have been unable to burn hydrogen and helium, or else they would not have exploded… One can take this either as evidence of a divine purpose in Creation and the choice of the laws of science or as support for the strong anthropic principle[1]. (1988, p.138-139)

Four forces

Present day science claims that the four forces (gravity, electromagnetism, strong and weak nuclear forces) govern all events in the physical universe. These too are, for inexplicable reasons, finely tuned. If any of them was slightly different, the universe (and, therefore, life) could not exist.

If gravity was just a little bit weaker, galaxies would fly apart and stars would burn out prematurely. There would not be enough gravity to pull the debris from dead stars into new interstellar dust clouds. The formation of new suns and planets would be impossible. On the other hand, if gravity had started out even a fraction stronger, then the rate of collisions between stars would have been so great that any typical solar system, such as this one, would not have survived long enough to produce stable planets and life.

If the exertion of electromagnetic force altered in any way, chemistry would not exist, which again means no stars and planets, and no physical life.

The same applies to the strong force that holds the core of atoms together. If it was slightly weaker, the particles would not be able to form the nucleus

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[1] The strong anthropic principle implies in this case the multiple universes hypothesis, which will be discussed later on.

of an atom. If it was a little stronger, protons would coalesce without the necessity of neutrons being around. The single proton that forms the nucleus of hydrogen, would be unstable. So, hydrogen, one of the basic building blocks of the universe, would not exist. Moreover, in the first case the stars would not be able to shine, and in the second they would inflate and explode before there was any chance to form planets and life on them.

If the weak nuclear force (responsible for various forms of radioactive decay) had slightly different properties the stars could not burn and the elements necessary for life, such as carbon, oxygen and nitrogen, could not be formed inside them.

This is not all. If these four forces were not *mutually* aligned in the way they are, the universe also could not exist. Any change in the relationship between these forces would result in the complete impossibility of material reality.

Stellar objects

Supernovae, or stellar explosions, are important for life. All the necessary elements (carbon, nitrogen, oxygen, iron, etc.) are manufactured in the interior of the stars. If these elements are to accumulate in planets such as the Earth, they must be released from the stellar interiors and disperse throughout the cosmos. This is one of the results of supernova explosions (moreover, the shock waves that they generate are probably important in initiating the condensation of interstellar gas and dust into planetary systems). However, supernovae are also highly destructive. If they were too close to a planetary system, their radiation would obliterate any life. So, supernovae must occur at a very precise rate, and the average distance between them and between all stars must be within a relatively narrow range. The distance between stars in this galaxy is about 30 million miles. If this distance was smaller, planetary orbits would be destabilised. If it was greater, the debris thrown out by a supernova would be so diffusely distributed that planetary systems (like this one) would never be formed. Interestingly, as a great number of stellar objects have been created, the universe appears to be speeding up (the present science cannot explain why), which minimises the destructive effects of supernovae.

The same precision is also apparent with regard to the ratio of longevity between galaxies and stars. Galaxies last several times longer than the lifetime of an average star, which allows the atoms scattered by an earlier generation of supernovae within a galaxy to be gathered into second-generation solar systems.

Complex structures

Not only are the properties of the universe precisely ordered to allow the formation of stellar bodies, but they are also synchronised to allow the formation of complex structures, such as molecules (which, of course, must come later). If this was not the case, the creation of the chemical compounds instrumental for life and planetary systems capable of sustaining life would be impossible. Here are some examples:

Chemistry is the process of building up different molecular structures that need to be relatively stable to interact and to form new structures. This could not have happened if some nuclear constants such as the fine structure constant (α) and the electron-to-proton mass ratio (β) were slightly different. If these constants had a higher value, the long chains of molecules such as DNA, could not be formed; if they had a lower value, atoms would not be stable.

Other constants are also crucial: the fact that protons and neutrons have almost, but not quite the same mass, also turns out to be essential. If this value was much different, protons would decay before they could form stable nuclei. A neutron is heavier than a proton by 0.14%, but this small difference is important because it exceeds the total mass of an electron. If it had not, electrons would combine with protons to form neutrons, leaving no hydrogen. Moreover, if the neutron did not outweigh the proton in the nucleus, the active lifetime of the sun and similar stars would be reduced to a few hundred years, not enough for the formation of planets and life. Similarly, that electrons weigh so much less than protons or neutrons is crucial for the existence of chemicals essential for life. Otherwise, molecules like DNA could not maintain their precise and distinctive structures (the electron mass determines the overall size of atoms, and the spacing between the atoms in a molecule).

If the nuclear constant force increased by only 0.3%, it would bind two neutrons; an increase of 3.4% would bind two protons, in which case all the hydrogen would have burned to helium in the early stages of the Big Bang, and so no hydrogen compounds or stable stars could have been formed. On the other hand, a decrease of 9% would unbind protons and neutrons, which would prevent the formation of elements heavier than hydrogen. The consequence of either variation would be that larger elements, including carbon (the basis for organic life), could not exist. A small increase in electromagnetic force would have the same effect.

There is exactly the right amount of heavy subatomic particles (baryons) in the universe to allow the formation of planets. If this amount was marginally greater, the higher density of stars would substantially increase the probability of interstellar encounters that would affect the stability of planetary orbits and by doing so destroy any possible life.

The creation of complex atoms and molecules was also only possible because the properties of the basic elements were well synchronised, and there is no known reason why it should be so. The first nuclei to be formed were those of hydrogen and subsequently helium, but they are too inert to create more complex atomic structures. Carbon served as a catalyst enabling the formation of heavier elements. This required large amounts of carbon in the first place. If two helium nuclei react, they can produce a nucleus of beryllium, a highly unstable isotope that almost immediately disintegrates into helium. To produce carbon, beryllium needs to enter into reaction with helium, which is only possible because the combined energy of the beryllium and helium nuclei is slightly smaller than the energy of carbon - the product of that reaction. However, if so produced carbon reacted with helium, it would be reduced to oxygen. This does not happen because their combined energy is slightly higher then that of oxygen, so it is not a 'resonance reaction'. Here again is a most improbable fine-tuning of energy levels for four entirely different elements, but without it, more complex structures (including planets, and life forms) could not emerge.

Symmetries

The very existence of consistent and rational physical laws (that follow certain mathematical rules) is not something that should be taken for granted and begs a question. But this is not all. Precision and regularity does not apply only to physical laws. Physicist Murray Gell-Mann discovered that when the properties of sub-atomic particles like protons and neutrons are plotted on graphs, they take the form of hexagons and triangles, with the known particles sitting at various points within them. Gell-Mann predicted other sub-atomic particles that science had yet to discover, on the basis of gaps in these patterns. He also predicted that particles in fact consist of 'sub-sub-atomic' particles (now known as quarks). All his predictions proved correct. Similar patterns, generally know as 'symmetries', have since turned up often in successive theories of physics.

POSSIBLE EXPLANATIONS FOR THE 'ANTHROPIC PRINCIPLE'

The above examples show that the universe has some striking properties, discovered but not fully explained by science. At present, some scientists are hoping that GUT (Grand Unified Theory) may provide an answer to the above consistencies, but this is not likely. Even if found, the cosmological constant makes it doubtful that GUT will yield an explanation for the precision and elegance of all these laws and features. Moreover, as the systems theorist and writer Ervin Laszlo points out, '…the problem with GUTs is that they cannot satisfactorily explain the progressive structuration of matter in space and time' (1993, p.66).

There are several speculative attempts to account for at least some of these regularities, for example, various inflationary models (that propose rapid expansion of the universe in its initial stages). These models do not always fit well with some observable facts though, and also, as Hawking points out, 'the inflationary model does not tell us why the initial configuration was not such as to produce something very different from what we observe' (1988, p.148). Hawking proposed his own theory that disposes of singularities and boundaries and involves imaginary time, so the universe 'would neither be created nor destroyed. It would just BE' (*ibid.,* p.151)[1]. He concludes: 'So long as the universe had a beginning, we could suppose it had a creator. But if the universe is really completely self-contained, having no boundary or edge, it would have neither beginning nor end: it would simply be. What place, then, for a creator?' (*ibid.,* p.157). It is interesting that not only does such a universe in imaginary time make mathematical sense, but is also remarkably similar to descriptions of 'the other world' found in various spiritual traditions from Buddhism to Christianity (stripped, of course, from their anthropomorphised embellishments). The problem is, however, that the universe familiar to human beings and that operates within real time, still exists. Hawking admits: 'When one goes back to the real time in which we live, however, there will still appear to be singularities…' (*ibid.* p.154). The question is then, what is the factor that brings about the transition from the 'time-less' universe to the familiar one? In other words, why did the universe with singularities, the Big Bang, and the time that goes only in one direction come to existence? If the above view is correct, it seems that there still might be a place for a 'creator'.

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[1] Some theologicians seized upon this hypothesis to conclude that the creator is also the sustainer. If the beginning has no special status, the creator creates/sustains the universe at all times. But this is unnecessary. The creator would need to sustain the universe only up to the point when time separates from space and starts behaving 'normally' (which is until the size of the universe reaches 10^{-33}cm).

Another attempt to explain the above regularities is the 'evolving universe' proposed by cosmologist Lee Smolin. It claims that new universes are created on the other side of black holes. Our universe has black holes and life, and therefore black holes are supposed to be able to produce new universes with the right properties. 'Bad' universes will not be able to form a black hole and therefore not 'reproduce' – similar to natural selection processes. However, this concept has some fatal flaws. There is not any indication that these universes exist. They may be in different dimensions, but there is no reason why they should be, if created by black holes in this universe. Secondly, it seems that the energy trapped in a black hole does not go anywhere, but in fact eventually gives birth to galaxies in *this* universe. And finally, the concept in fact does not provide an answer, only moves the question further down the line. The issue remains where the first ancestor universe came from to start this reproductive cycle.

There are, however, two other interpretations of the 'anthropic principle' that are both rationally consistent, although one operates within the materialistic framework, while the other does not.

The multiple universes theory (advocated, for example, by David Deutsch) can account for the precision and regularity of physical phenomena, and is consistent with materialism. The idea is that universes are constantly formed independently from each other. It is possible that a practically infinite number of universes come into existence. Most of them instantly collapse, but a few survive. If there is an infinite number of universes in becoming, some of them are bound to have the right properties however unlikely they are. The additional advantage of this interpretation is that it can explain some seemingly illogical experimental data in quantum physics. Although a speculation (multiple universes can never be empirically proven), this interpretation is a valid rational candidate to explain why this universe has the features that it has[1].

The teleological interpretation - considering all the above mentioned regularities, the other possibility, that the physical universe is intentional, needs to be take into account. This is called the teleological (not to be confused with theological) interpretation which implies purposefulness. The universe is as it is in order to enable the development of phenomena such as

[1] This is not to say that this hypothesis is without controversy. For its criticism see, for example, Davis, 1992, p.215-221, and more recently *ibid.*, 2007, 295-304, where the author evaluate the above two and some other possibilities. Those that Davis himself favours are not included here because of their bizarre and paradox prone requirements (e.g. backwards causation or causal loops).

life and consciousness. Materialism has not yet come up with a convincing argument about why chemistry emerged from physics, why biology emerged from chemistry, and why the brain and the mind emerged from biology. A teleological view is that a particular type of physics emerged in order to enable the development of chemistry, a particular type of chemistry emerged in order to enable the development of biology, a particular type of biology emerged in order to enable the development of the brain, a particular type of the brain emerged in order to enable the development of the mind. Teleological interpretation (although as speculative as the 'multiple universe' one) is not irrational, so it should not be discarded outright. The materialistic perspective rejects this possibility for ideological reasons, not because it conflicts with reason or evidence. The statements below show that some contemporary theologians, philosophers and physicists have come to remarkably similar conclusions. The theologian Swinburne writes:

> That there should be material bodies is strange enough; but that they should all have such similar powers which they inevitably exercise, seems passing strange. It is strange enough that physical objects should have powers at all – why should they not just be, without being able to make a difference to the world? But that they should all, throughout infinite time and space, have some general powers identical to those of all other objects (and they all be made of components of very few fundamental kinds, each component of a given kind being identical in all characteristics with each other such component) and yet there be no cause of this at all seems incredible. (1991, p.145)

This statement comes from philosophers Polanyi and Prosch:

> …our modern science cannot properly be understood to tell us that the world is meaningless and pointless, that it is absurd. The supposition that it is absurd is a modern myth, created imaginatively from the clues produced by a profound misunderstanding of what science and knowledge are and what they require, a misunderstanding spawned by positivistic leftovers in our thinking and by allegiance to the false ideal of objectivity from which we have been unable to shake ourselves quite free. These are the stoppages in our ears that we must pull out if we are ever once more to experience the full range of meanings possible to man. (1975, p.181)

The physicist Paul Davies makes a comparable point:

> …certain crucial structures, such as solar-type stars, depend for their characteristic features on wildly improbable numerical accidents that combine together fundamental constants from distinct branches of physics. And when one goes on to study cosmology – the overall structure and evolution of the universe – incredulity mounts. Recent discoveries about the primeval cosmos oblige us to accept that the expanding universe has been set up in its motion with a cooperation of astonishing precision. (1982, foreword)

THE SYNTHESIS PERSPECTIVE

One implication of both possibilities, the purposefully created universe and multi-universes, is that there is 'supra-reality' containing the physical world (and possibly other worlds). Thus, it is proposed that physical reality is only one level, a sub-system of a larger framework (multiple universes must be created in some other reality that contains all of them[1]).

This view is supported by universal (in the sense that they appear in practically all cultures) spiritual experiences of a greater whole within which the material world is embedded. Although its glimpses may be fleeting and difficult to interpret, they seem to be in the root of all religions, even non-theistic ones. It is true that religion sometimes serves a purpose to alleviate fears and increase sense of control, but these factors cannot be a full explanation for the ubiquitous nature of this belief. A human need to reach beyond immediate sensory experience (that often finds its expression in fantasies, art or mythology, but is also related to genuine transpersonal insights) cannot be easily dismissed as a sort of psychological defence mechanism. There are other (even more conducive) ways to produce similar results, and yet they have not rendered beliefs in supra-reality redundant. By claiming that there is nothing beyond, that humans live in a meaningless self-sufficient bubble, materialism closes the window for satisfying this need. There is no reason to deny the possibility that at least some of these experiences are genuine and correspond to something real. This, of course, does not mean that their various interpretations are valid, but the core of these interpretations should not be undermined.

Some scientists have also come to the conclusion that reducing everything to the world of matter is inadequate, that reality stretches beyond the physical. It is implied for example, in Bohm's theory of 'implicate order' and earlier, in De Broglie's model. The latter proposed that reality is built in levels of size and organisation, each level containing its own causal and statistical laws. As already mentioned, some implications of Hawking's theory also hint in this direction.

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[1] Nothingness is non-referential and cannot be an option (vacuum is not nothingness, it only lacks matter). Empty space, if such a thing exists, is also not an alternative because, as science teaches us, space was created in the Big Bang, so it could not have existed before. It is possible that cosmological constants and some laws of nature vary within physical world, thus creating may universes. However, in this case they would all still depend on the specific mathematical and theoretical model, so the problem would not be resolved, just moved on a different level. If this theory is to be taken as a serious candidate, it must be assumed that multi-universes are created in reality that does not depended on the rules that operate within them.

So-called realistic sceptics, of course, might not be satisfied, because it is not possible to provide material evidence for this aspect of reality, which can only be extrapolated or experienced (in terms of transpersonal experiences). However, those who demand such evidence neglect the fact that solipsistic and historical sceptics can use the same argument against the existence of physical reality. Ultimately the existence of the material world cannot be proven either. It cannot be proven (to a solipsistic sceptic) that the world is not just a figment of one's imagination as a dream is, or (to a historical sceptic) that it existed a moment ago, and yet these are accepted as facts. Thus, material proof is here not considered decisive. However, there is indirect support for this notion. For instance, some findings in quantum physics suggests that 'the world of matter-energy appears to float, rather as a thin precipitate, on a deep sea of almost infinite energies' (Laszlo, 1993, p.87). This is not the same kind of energy that forms matter. The energies in question, also known as zero-point energies, although not 'real' undoubtedly exist and cannot be ignored. The following may be a case in point. Electromagnetic fields propagate in a vacuum, but there is not an obvious source for this field (the electron cannot be a field source). Nevertheless, the field in which the electron appears stores a large amount of energy. That energy must be, as it were, non-material (meaning without a mass) because otherwise it would have created a gravitational potential that would have collapsed all matter in the universe to a singularity shortly after the Big Bang. And yet, the universe is still expanding. In fact, the very existence of matter can be questioned. What appears as matter are in effect highly condensed (and relatively unstable) energy fields. Popper writes:

> Matter turns out to be highly packed energy, transformable into other forms of energy; and therefore something of the nature of a *process*, since it can be converted into other processes such as light and, of course, motion and heat… The universe now appears to be not a collection of things, but an interacting set of events or processes… [atoms have] a structure that can hardly be described as 'material', and certainly not as 'substantial': with the programme of explaining the structure of matter, physics had to transcend materialism. (Popper and Eccles, 1977, p.7)

This all indicates that if the methodological and ideological limitations of scientific and spiritual approaches are overcome, there is no insurmountable conflict between them. They both point at the possibility that reality is made of at least two levels or planes. The familiar one, consisting of a huge amount of very dense and relatively slow energy that appears as matter. It can be defined as an aspect of reality determined by the physical laws. In other words, physical reality and the laws that govern it can be considered a special case, a subset of a larger reality (as Newtonian physics is assumed to be a special case of Einsteinian physics, and valid within a limited range). The boundaries of physical reality are twofold: on one hand, singularities,

allegedly in the centre of black holes where the laws of physics break down, so they can be taken as 'out of this word'; and on the other, the speed of light - anything faster than the speed of light would violate the General Theory of Relativity and therefore be again 'out of this world'. Considering that the material reality includes entities of maximum density and minimal movement (black holes) it is likely to be the lowest possible level. It is proposed that the other reality consists of faster, less dense but more refined energy, not bound by all the laws of physics applicable in the material world. Although this may be difficult to imagine, all the evidence suggests that energy is best conceived as the process itself, pure movement (without necessarily something that moves). In this case it is possible that there are movements with speed beyond that of light. A science and spiritual writer, David Ash, who advocates this view, writes:

> Modern physics may have established that particles cannot move faster than the speed of light, but this does not mean that movement is constrained to this speed. The speed of light is the upper limit of velocity if it is assumed that movement can only exist as the property of particles. However, this classical assumption of the atomic hypothesis is merely a reflection of outmoded materialism. (1995, p.139)

The implication is that such energy does not operate within the space-time continuum (which is relative to the speed of light) and it can consist only of forms that do not have mass, so it can be called non-material reality[1]. Such reality has no stable ground state, no equilibrium condition, no space-time framework; hence, there is no beginning and there can be no end[2].

This is not to say that this realm can be interpreted in such a way to allow the breaking of the laws that operate *within* the physical world (as the Theory of Relativity would not have been valid if it had contradicted Newtonian physics within its range). Even fields and waves, as long as they are linked to physical objects and their interactions, have to be interpreted in compliance with the laws of physics. Nevertheless, on the level of sub-atomic particles (that can be conceived as waves too) some strange behaviour can already be detected: for example, if two photons that have been 'entangled' (meaning essentially that they spin in the same direction)

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[1] Even in the material universe not everything has to have mass; fields do not have mass as well as light and other waves, and they may play an essential role in linking the two realms. However, electro-magnetic or gravitational fields are vector fields (having both, magnitude and direction) rather than standing scalar fields, so they really belong to the world of matter.

[2] Note that if the beginning is not required, the problem that the Big Bang theory faces in relation to the material world, namely what was before, is not an issue anymore.

are separated, and one of them changes the direction of the spin, the other will also change direction irrespective of their distance – and instantaneously, indicating that they are still somehow connected and that the space-time framework is already losing its grip.[1]

It is likely that these two realties are in constant interaction. After all, subatomic particles seem to appear from 'nowhere' and disappear all the time, but this interaction can be ignored in most of cases (except perhaps in the sub-atomic sphere and in complex wave generating systems such as the brain). Human beings normally perceive only the material world. Phenomenologically, the relation between reality as a whole and the material one can be compared to the relation between an awake state and a dream – regarding inclusiveness and non-presence. A dream state is situated within a larger framework of the awake state, but while in a dream, the dreamer is usually not aware of it (except in so-called lucid dreams). Of course, this parallel has its limits. A dream is typically subjective – meaning that dream events depend on the dreamer, while the material world is objective - other agents and objects exist independently from the observer. Nevertheless, it may not be completely off the mark to say that in this world all sentient beings share a collective dream.

The question may be asked why one should be concerned with reality beyond our immediate reality. In most situations, indeed, it does not need to be taken into account (as, for all practical purposes, Newtonian physics suffices and Relativity can be ignored). However, if non-material reality is in a causal relationship to the physical world - in other words, if the physical world is rooted in it, non-material reality is necessary for the existence of material one. Therefore, only a larger perspective that includes the notion of such reality can offer some hope of finding a rational explanation to some fundamental questions relevant to this world.

The real issue, however, is not the existence of this supra-reality. What separates the materialist perspective from the non-materialist one is that the former denies the role of an agency and purpose, while the latter accepts this possibility. Thus, what needs to be considered is whether the necessity of sentience makes sense and can be justified.

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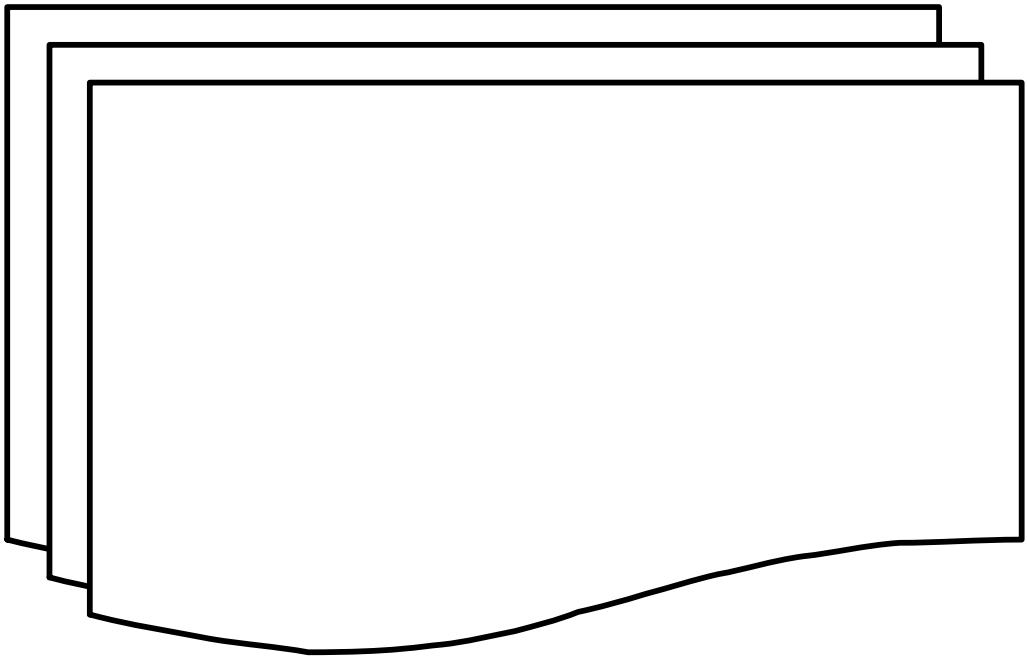
[1] This *does not* violate the General Theory of Relativity that claims that nothing can travel faster than the speed of light, because it is not an informational exchange – there is no cause and effect.



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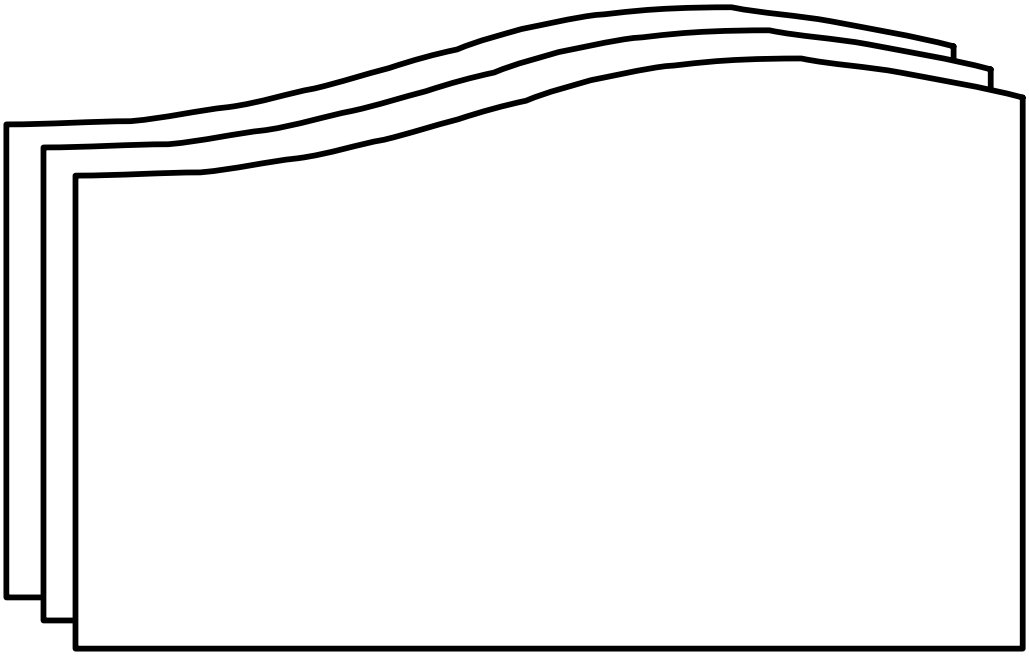


THE BEING

THE 'MIND–BODY PROBLEM'

The previous part hints that life may have a non-material aspect to it, but the criterion of coherence demands more direct support for such an assertion. Although it may apply to other life forms, the most conducive way to approach this issue is by focusing on human beings. This has the advantages of being able to refer to one's personal experience and to utilise the ability of language. So, examining the so-called 'mind-body problem' (how mental processes are related to bodily states or processes) seems the best starting point. An additional benefit is that this 'problem' is also democratic. Unlike the mysteries of the universe or subatomic particles that require equipment available only to a few specialists, everybody has access to shis own mind.

Before the various options are considered though, a modern myth related to this subject must be addressed. It consists of the claim that science has already solved or is close to solving the riddle of consciousness and its relation to the brain. The myth is perpetuated by some scientist (e.g. professor Semir Zeki) but more often by non-scientists (such as philosopher Daniel Dennett) or the media. It is true that science has made a great contribution in recent years to understanding the structure and functioning of the brain, but this is a different matter. In fact, science is no closer to solving this problem than it was fifty or more years ago, when the interest in the subject re-surfaced. The consensus of the speakers at the 1995 conference in London, *Consciousness – its place in contemporary science*, was that 'science really did not understand *anything* about consciousness – what it is, how it evolved, how it is generated by the brain, or even what it is for' (Sutherland, 1994, p.285). The issue is not that science is not there yet, and that only more study and more sophisticated instruments are needed. More fundamentally, with the current methodology, science is unlikely ever to address this problem fully and adequately. The commonly accepted criteria for data in a scientific analysis are that they are objective, public, and replicable (leading to predictability). However, consciousness has some unique characteristics that render these criteria inadequate:

The first person perspective - the present scientific methodology favours observation, but the mind is not open to external observation. The mental is private, non-accessible to the outside, objective, public sphere, unlike physical objects or phenomena. It is intimately and directly accessible to its 'owner', but not to others (a report is already second hand data). Güzeldere, a professor of Psychological and Brain Sciences, writes (1995b, p.116):

> …from the outside, the first-hand exploration of the consciousness of others

> just seems to be out of the reach of ordinary scientific methods, others' experience being neither directly observable nor non-inferentially verifiable.

Non-spatiality - the other problem is that the materials of consciousness are non-spatial. They are not located in any specific place nor do they take up a particular volume of space; they are not made of spatially distributed parts nor have they spatial dimensionality; they are not solid and some of them don't even have a shape (e.g. the ideas of love or freedom). Since they are non-spatial, they are in principle unobservable. The view of some scientists that the appearance of non-spatiality is a kind of illusion seems so far to be baseless. It was discovered a while ago that certain sets of neurons process lines, angles or simple geometrical forms, but this is a far cry from even the simplest mental images. Nobody has yet managed to find in the brain anything that even remotely looks like a house or the grandma that one can imagine or remember. It has been proposed that the brain, in theory, can produce something similar to holograms, but this has never been detected, so its spatiality cannot be taken for granted even if the premise is correct. Thus, it is reasonable to accept that mental events as such are unobservable from the third person perspective, and for all practical purposes, non-spatial until shown otherwise.

Qualia (qualities that experiences such as feeling pain, seeing the colour green, or smelling a flower consist of). There is clearly a difference between the particular behaviour of nerve cells associated with pain for example, and the actual experience of pain. Even materialists such as Koch, admit that 'there seems to be a huge jump between the materialistic level, of explaining molecules and neurons, and the subjective level' (1992, p.96). To paraphrase philosopher Chalmers, however much knowledge neuroscience gains about the brain, there will still be an 'explanatory gap' between the physical and subjective realms. Experimental work on perception, for instance, only relates to the *contents* of consciousness, not to the experience itself. Neuroscience can explain, to some extent, how sensations can be 'translated' into electro-magnetic impulses, but it does not say anything about how these impulses are translated into images, thoughts, feelings (not to mention that humans are able to create them too). Put simply, science has not found mental events in the brain. The best it can do is to provide a detailed map of the physical processes that correlate with specific subjective states. No neurological theory explains *why* brain functions are accompanied by them.

The contribution of science should not be underestimated, but the inevitable conclusion is that science, on its own, cannot truly solve the mind-body problem. Bearing this in mind, various possibilities of the relation between the brain and mind can be examined.

MATTER EXISTS, MENTAL DOES NOT

This view is known as reductive materialism or materialistic monism. It is based on the belief that the mind can either be identified or reduced to the brain (or body) activity. For a true materialist the 'mind' is nothing more than a way of describing certain electrical impulses and chemical processes in the brain and the rest of the body. Thoughts or emotions are just a mere folk terminology for them. Consequently, the laws of nature govern these processes, and freedom of choice is merely an illusion.

Arguments for materialism do not amount to much. Some of its proponents admit that they are motivated by such considerations as Occam's razor (see p.40) and a general belief that everything is reducible to one kind of entity. The reason why this perspective seems plausible to many is that brain injuries or chemicals can alter mind states. However, although this proves that the brain affects the mind, it is not evidence that the mind *is* the brain. To make a comparison, if a car breaks down or runs out of petrol, the driver is forced to stop shis journey. This is not a proof, though, that the driver does not exist, or that s/he is identical to or a product of mechanical processes in the car's engine. Yet, materialistic interpretations make comparable claims in an attempt to explain the mind solely by brain processes. One thing is, however, clear. There is no scientific evidence that the mind is only a product of brain activity:

> …connection is not enough. To say that rain is connected with a fall of the barometer is very different from saying that rain *is* a fall of the barometer; and the same is true of sensations and brain-processes - even assuming that they could be correlated in the same sort of way. To go from correlation to identification requires a further step. Is this further step also a matter of science? (Hanfling, 1980, p.52)

Materialism looks attractive because it offers an easy solution to the problem that bedevils dualism: how states of the mind (expectations, volitions, feelings) can initiate physical movements. If the mind is identified with the brain this issue becomes trivial: the one part of essentially the same system affects another in a way that a car engine affects the wheels (dualists would comment that it is not the car-engine, but ultimately a driver who initiates the movement, and s/he is not a part of the system). The materialist solution, however, creates even bigger problems and requires sacrificing much of what it tries to explain. The mental must be completely eliminated because if it is acknowledged, it must be material, and therefore spatial and accessible from the third person perspective. Yet, this does not seem to be the case. So, there are several attempts to sidetrack this essential aspect of human experience (the irony is that there is so much bickering about the best way to do so, that materialists appear to be the best critics of each other).

Behaviourism

The eagerness of psychologists to present themselves as objective and show that the third person perspective can be employed to study the mind too, resulted in the theory of behaviourism that reigned for fifty years (roughly between 1915 and 1965). A radical form of materialism, it reduces all mental states to phenomena that can be observed and measured (i.e. behaviour). A particularly influential form was the 'logical behaviourism' espoused by philosopher Ryle in his book *The Concept of Mind*. He also coined a disparaging phrase for dualism - 'the dogma of the ghost in the machine'. Once the mental is identified with behaviour, it is easy to discard the mind altogether. Ryle, for example, argues that one cannot expect to find a mind over and above all the various parts of the body and its actions, for the mind is just a convenient label for certain physical actions. He uses the metaphor of a university that does not exist out and above the buildings and people that make a university. So, as university, the mind does not really exist, it is only a different level of description. There are many objections to this perspective:

- Ryle may be right to compare the mind with the concept of 'university' in so far as the mind does not exist independent from its constituents (it is just a name for a sum of mental processes). However, identifying these processes (thoughts, images, feelings, desires etc.) with the description of behaviour leads to some absurd consequences. For example, from this perspective, no distinction can be made between the person who is really in pain and the person who acts convincingly that s/he is in pain. Also, what about those who do not show any external expressions of mental events (e.g. a person who is paralysed or meditating)? Although public evidence for one's thoughts or feelings must indeed come from shis observable behaviour, it is a real leap of faith to assume that they can be reduced to it.
- By identifying mental events with behavioural tendencies this doctrine leaves qualia out of the equation. The experience of being in pain cannot be simply reduced to a disposition to scream, wince or say 'I am in pain'. *Feeling* the pain is too important to be ignored. Philosopher Kripke argues that the behaviourist account of the mental fails because the subjective character of an experience (or 'its immediate phenomenological quality', as he calls it) is the essential property left out by such analyses.
- Behaviourism naturally does not allow the possibility that behaviour can be caused by mental events such as beliefs for example. According to this view, such events do not exist independently of behaviour, they are just dispositions to behave in a certain way. For example, one does not take an umbrella because s/he believes that it is going to rain, but because s/he has a disposition to take an umbrella. This, however, blatantly contradicts common experience and common sense.

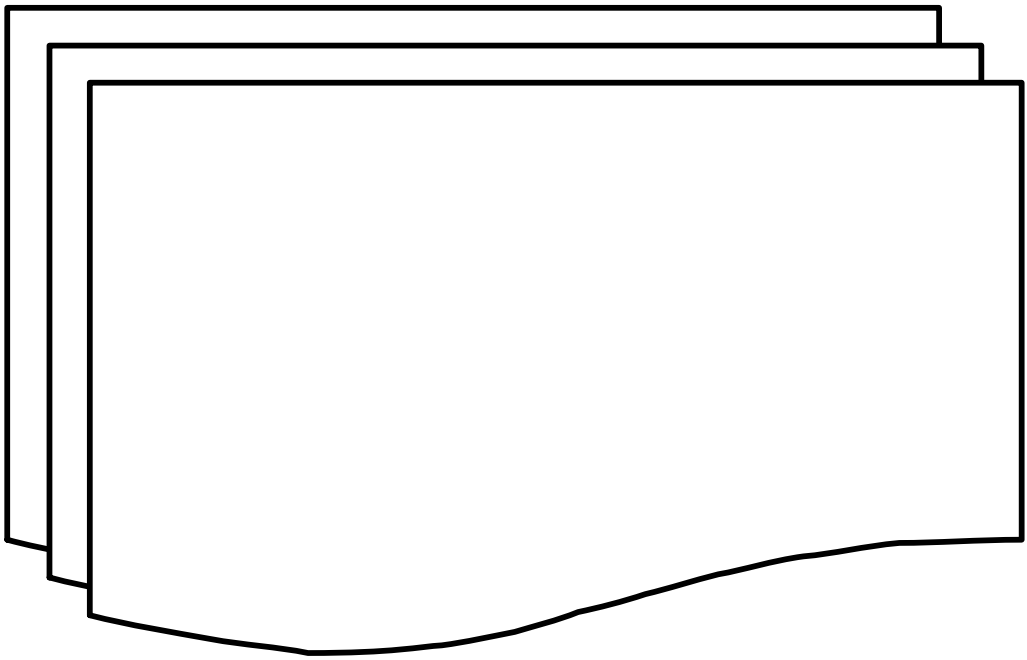
- Behaviourists' claim that an individual learns about shis own beliefs by monitoring shis behaviour and by listening to what s/he says, also seems absurd. It would mean that we cannot have any beliefs that we have not first acted upon or verbally expressed.
- A logical consequence of such a position is that the mind is fully determined by its environment ('nurture'), but this does not leave any room for choice, creativity and other common phenomena (and if they did not exist on the first place, they could not even be invented, since invention involves creativity).

Not surprisingly, behaviourism was eventually rejected even by those who subscribe to materialism, so other ways have been sought to dispose of the mental.

Eliminativism

Eliminativism is an extreme materialist doctrine that attempts to solve the 'mind-body problem' by completely eliminating the mind. It simply denies the existence of the phenomena that cannot be explained from a materialistic perspective. Eliminativists maintain that mentality is nothing more than folklore, and advocate the replacement of everyday psychological concepts (such as feelings, desires, beliefs, intentions etc.) in favour of neuro-scientific ones. This position was championed by Patricia and Paul Churchland and Daniel Dennett. The latter, in his rather over-confidently entitled book *Consciousness Explained,* asserts that consciousness – and our sense that we have a self – is an illusion. This, however, cannot be justified for several reasons:

- A claim that common mental phenomena are illusions - similar to optical illusions, is not only unsubstantiated, but also misleading. Unlike perception, which is mediated by the senses that can play tricks on us, phenomenological experience is direct and cannot be an illusion. Only its interpretations can be, because they require a correspondence to events or objects outside one's mind. However, being aware, intending or the sense of self are not interpretations (we do not project them onto or seek correspondence with something 'out there'). They are prime examples of unmediated experiences. So, we may be wrong believing that they are in the brain (or not in the brain), but they cannot be dismissed as an illusion. For instance, if a person says that s/he feels pain, s/he may be wrong about many things (e.g. where that pain is coming from) but not that s/he is experiencing, is *aware* of pain. Saying 'No, you are mistaken, you are not aware of any pain' simply does not make sense (unless it is suspected that the person is deliberately lying, but this is beside the point).



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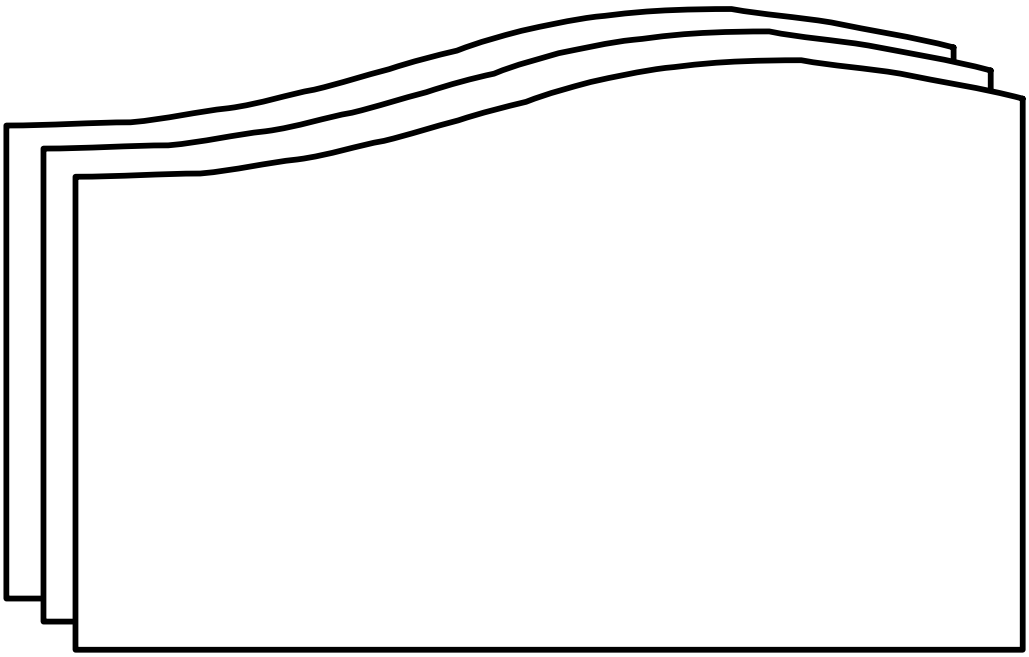


THE SYNTHESIS PERSPECTIVE: TWO GIVE RISE TO ONE

It does not seem that the above possibilities provide an adequate explanation for the relationship between the brain and the mind. Although many of the theories have some elements that ring true, none of them are fully satisfactory. To summarise the main problems, materialism does not adequately explain experience and agency, while dualism cannot explain the interaction between mind and matter. A fresh look at the issue is required. As philosopher McGinn puts it, 'consciousness is an anomaly in our present world-view and, like all anomalies, it calls for some more or less drastic rectification in that relative to which it is anomalous.' (1995, p.226)

The model described below is based on the following postulates:

- The mind heavily depends on the nervous system (including the brain) and its development. This is not controversial, so it does not need further discussion.
- As the above criticism of the materialist perspective shows, the mind, however, cannot be identified with the brain. Even Aristotle argued that the mind must be immaterial on the bases that a material organ could not have the range and flexibility that are required for human thought. Similarly, in modern times, mathematician Gödel, for example, believed that his famous theorem showed that there are demonstrably rational forms of mathematical thought that humans are capable of, which could not be exhibited by a mechanical or formal system of the sort that mind would have to be if only physical. Brentano's notion of the irreducible flexibility of intellect, points in the same direction.
- Rather than being a discrete entity (as a brain is), the mind is considered a convenient name for the sum of mental *events* belonging to one person. These mental events must be interactive processes, otherwise the mind would be an epiphenomenon. And, if this interaction is only between the environment and the body/brain (behaviourism), the mind would be again just a passive observer in the best case. The mind cannot be reduced to the interaction between the various parts of the brain either, because it has certain features that the brain in all its complexity does not have[1]. A direct interaction between the brain and the mind (dualism) is also implausible, because it would make the mind too independent from the brain. To make a parallel, if the brain is a car, a road the environment, the journey itself can be called the mind. The journey does not interact with the car - it is the result of an interaction between the car and the road, and also between the car and the driver.

[1] Some of them have already been mentioned and will be further discussed below.

To follow up the above analogy, in order to account for qualia and agency, an equivalent of the driver is indeed necessary. Something that is not an integral part of the car, but interacts with the car and by doing so, affects the journey. Its existence is not only supported by common sense and transpersonal experiences, but also (contrary to popular belief), by findings from contemporary experimental research. For example, the already mentioned *temporal discrepancy* between neural events and conscious experiences indicates that something else is involved:

> The cortical activities evoked by some sharp stimulus to the hand in conscious human subjects took as long as half a second to build up to the level for giving consciousness; yet the subject antedated it in his experience to a time which was the time of arrival of the message from the periphery onto the cerebral cortex, which may be almost half a second earlier. This is an extraordinary happening, and there is no way in which this can be explained by the operations of the neural machinery. (Popper and Eccles, 1977, p.476)

Considering all the above, it is not surprising that such an entity is not and cannot be found in the brain (the point of agreement between materialists and dualists). In fact, non-physical properties of consciousness (e.g. non-spatiality) strongly suggests that a non-material component is involved, which may even, as McGinn puts forward, pre-date the matter:

> …the origin of consciousness somehow draws upon those properties of the universe that antedate and explain the occurrence of the big bang. If we need a pre-spatial level of reality to account for the big bang, then it may be this very level that is exploited in the generation of consciousness. That is, assuming that remnants of the pre-big bang universe have persisted, it may be that these features of the universe are somehow involved in engineering the non-spatial phenomenon of consciousness. (1995, p.224)

Of course, there cannot be material evidence for this non-material aspect, its existence can only be extrapolated through its consequences (as with gravitation and the other forces). However, including it can provide a more complete and coherent interpretation than reductive approaches. The Synthesis model is, therefore, tripartite: the mental (or the mind) is considered *the result* of an interaction between the two qualitatively different aspects of a living being: one material and one non-material, but it cannot be identified with either of them[1]. This model differs from materialism because it acknowledges the existence of a non-material element and differs from dualism because it does not equate the mind with this element. In other

[1] It is worth noting that these three constitutes have been recognised in a number of spiritual traditions. For example, this was a dominant view in Christianity (using the term spirit instead of mind) until the year 869, when the Church reduced them to body and soul. Vedanta also recognises three ‘bodies’.

words, the view is that materialists are mistaken to identify the mind with the body, and dualists are mistaken to identify the mind with the soul.

The medium through which this interaction can occur needs to be discussed. As already mentioned, Descartes failed to provide a plausible explanation in this respect, which is not surprising considering that at that time certain phenomena such as waves and fields were unknown. A better grounded account is possible if these concepts are utilised.

The starting premise is that the medium of interaction must be something that has a dual nature. The phenomenon that fits this requirement is the wave. Waves sometimes behave like particles, but not always (for example, they can propagate through a vacuum – no particles are involved). That waves transcend matter is transparent even in its mathematical expression. $\sqrt{-1}$ that is necessary to describe a wave does not correspond to anything material. Heisenberg, one of the founders of quantum physics, wrote that if particles are *not* seen as material bodies, then they show 'a distinct formal similarity to the $\sqrt{-1}$ in mathematics' (1952, p.62). Much earlier, philosopher Leibniz would say that 'the imaginary number is a fine and wonderful recourse to define spirit, almost an amphibian between being and non-being'. Waves too can be seen as an amphibian between two realities[1]. The waves travelling at the speed of light can be considered the top limit of the material world and the bottom limit of the non-material one. They connect these two worlds and at the same time separate, set the boundaries, to them. The renowned psychologist, Carl Gustav Jung writes:

> the psyche… robs bodies of their reality when the psychic intensity transcends the speed of light. Our brain might be the place of transformation, where the relatively infinite tensions or intensities of the psyche are tuned down to perceptible frequencies and extensions. But in itself the psyche would have no dimension in space and time at all. (in Laszlo, 1993, p.191)

The importance of the wave patterns in brain activity is well recognised:

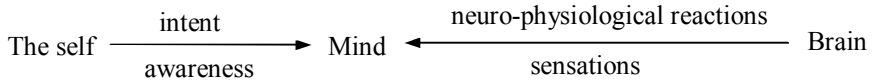
> Just how the neurotransmitters affect the mind itself is unknown. But everything indicates that they affect the *rhythms* of the brain and the rest of the body. Molecules of dopamine and other neurotransmitters in the brain do only one thing: they excite or inhibit nerve cells, and thus they control the 'firing pattern' of nervous tissue. There are thousands of different patterns of such firings within the brain and elsewhere. Everywhere there are patterns and rhythms of activity… More obviously, the firing patterns within the brain can be driven by sensations coming from the 'outside'. Flashes of light or

[1] It is tempting to think that imaginary numbers and the wave function are just a mathematical convenience, but this is not he case. As Nunn puts it, 'the wave function is nearly as real as anything else that passes for reality. And the implications of complex numbers have to be taken seriously' (1996, p.46).

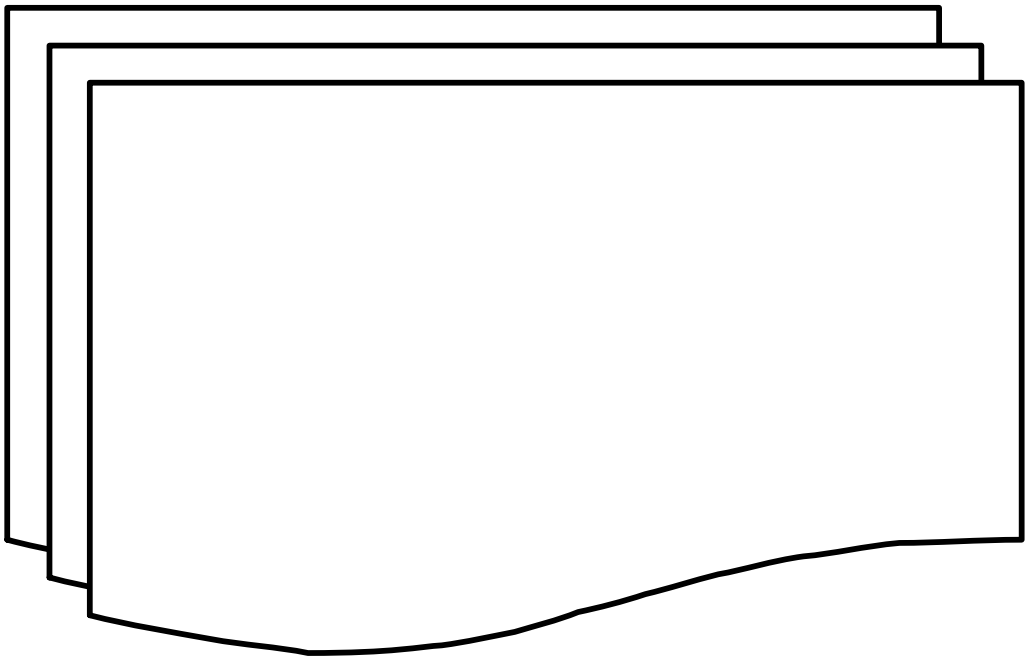
> pulses of sound, touch, odours, or taste are well known for their ability to capture and 'drive', or 'entrain', rhythmic neural activity. For instance, repetitive drumming, known as 'trance drumming' - performed in great variety in every corner of the world - is ritually used to implant new rhythms, by subduing and 'taking over' personal rhythms. It does not take long in listening to classical Indian music to realise that such music - through intricate and interlocking beats, tones, and rhythms - actually operates on our neural codes and thereby works on our emotions. Literally hundreds of different vocal practices of chanting, singing, and recitation have been discovered to affect different regions of the body and to musically excite or calm the mind through harmonic manipulations and resonances. (Podvoll, 1990, p.184)

Any image, thought, or word can be expressed as a wave function. The Gabor-transforms that limit the infinite Fourier-transforms (the ways of converting complex patterns into component waves) enable a precise match between any brain activity or cerebral network and the corresponding waveform. Waves, therefore, could indeed be the medium through which the brain interacts with a non-material aspect (and *vice versa*). Cortical regions responsible for visual perception, for example, can decode incoming light signals into waveforms of specific frequency and amplitude. So, rather than assuming that the brain constructs information from the input of a sensory nerve it is more accurate to suppose that the centres of the nervous system resonate to this input (see Gibson, 1980). Of course, only waves of a particular frequency serve as the medium of communication between the two aspects. Relatively recent research indicates that the synchronisation of neuronal activity at about 40Hz can be linked to consciousness (Crick and Koch, 1990; Llinas and Ribary, 1993).

Phenomena that can be associated with the non-material part are obviously those that cannot be explained in terms of brain processes (those that do not have neuro-correlates). There are three candidates: the self, awareness and intent (they cannot be illusions because they are the essence of our phenomenological experiences). Not surprisingly, considering the overall purpose, they coincide with the properties of the One (see p.66). The following model is a simplified representation of this interaction:



What these properties are and their characteristics will be discussed later, for the time being only the support for their existence and non-material nature will be presented.



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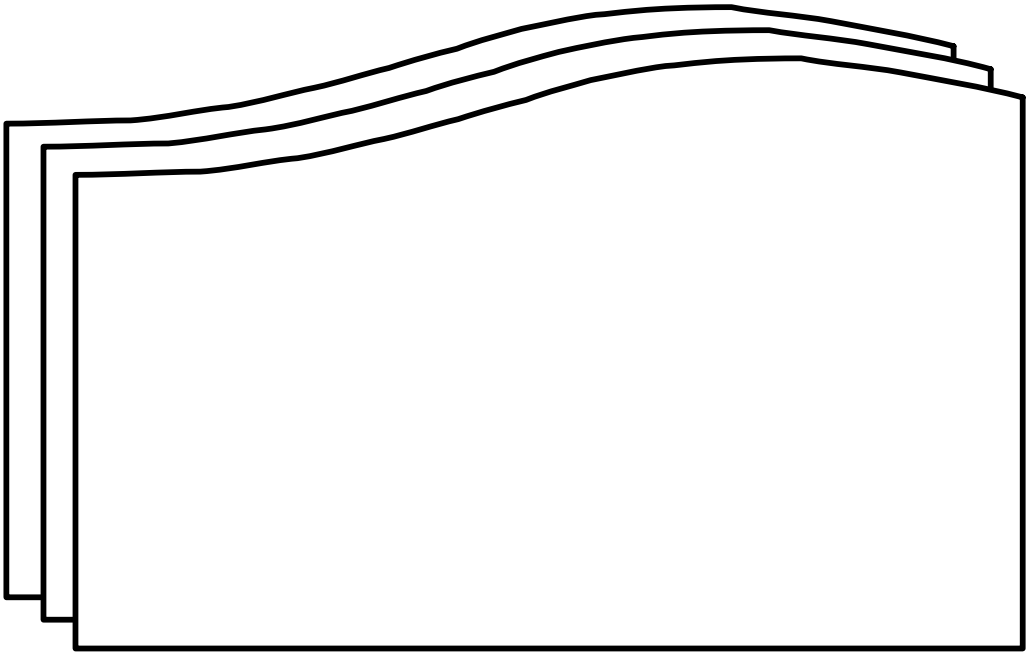

THE NATURE OF LIFE

The materialistic interpretation

Materialistic doctrine is based on the belief that the functioning of living organisms can be reduced entirely to physical and chemical processes[1]. Some of the propagators of materialism, zealous to associate life with inanimate matter, even use machine-like terminology. For example, biologist Richard Dawkins describes living organisms in terms of mechanisms, replicators and robots. Ironically, this, in fact, contradicts materialism:

> It has for some time been generally supposed that organisms are mechanisms and that, since mechanisms work in accordance with physical and chemical laws, organisms must also do so… Unfortunately this assumption has been misconceived to mean that organisms must be wholly explicable as the resultants of physical and chemical laws because mechanisms are. Actually it means exactly the opposite. For mechanisms are *not* wholly explicable as the resultants of the operation of physical and chemical laws. (Polanyi and Prosch, 1975, p.168)

Machines are purposely built and they can be fully understood only in that context. So, if life forms are machines, the same should apply[2].

Leaving this philosophical point aside, explaining life in terms of the physical and chemical properties of its components is not straightforward. Although science has identified most of the necessary chemicals and can describe fairly well many processes in a cell, why a living cell functions at all remains a mystery. It says nothing, for example, on why cells replicate (especially when the process goes from a simple to a more complex structure). The replication mechanism may be encoded in the DNA, but this does not explain why and how it is encoded in the first place:

> Whatever the origin of a DNA configuration may have been, it can function as a code only if its order is not due to the forces of potential energy. Just as the arrangement of a printed page is and must be extraneous to the chemistry of the printed page, so the base sequence in a DNA molecule is and must be extraneous to the chemical forces at work in the DNA molecule. (*ibid*. p.172)

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[1] Consequently as biologist Morowitz puts it 'the study of life at all levels, from social to molecular behaviour, has in modern times relied on reductionism as the chief explanatory concept' (1981, p.34-35).

[2] Polanyi concludes: 'Biologists will tell you that they are explaining living beings by the laws of inanimate nature, but what they actually do, and do triumphantly well, is to explain certain aspects of life by machine-like principles. This postulates a level of reality that operates on the boundaries left open by the laws of physics and chemistry' (1969, p.154).

Thus, the boundary conditions that determine the structure and organisation, 'must consist of principles other than those of the material they bound' (*ibid.*, p.177). This, of course, does not apply only to replication, but also metabolism, growth, cell cooperation, etc.

There are a number of other issues worth mentioning. While alive, an organism maintains a highly ordered, low-entropy state. Silver writes:

> The fact that the contents of the cell include very large (highly improbable) molecules, and that the cell is a highly ordered (highly improbable) structure, implies that living matter is in a state of comparatively *low entropy* as compared with the disorganized mess of small molecules into which it disintegrates when it dies. (1998, p.323)

This is contrary to the second law of thermodynamics. Although it does not break this law because it is an open system, the question remains why it persistently acts against it[1]. If life is nothing more than chemistry and physics, why does a living cell behave so differently than a cell that has all its components intact, but is not alive?

Explaining ontogeny (the sequence of events involved in the development of an individual organism) is also a problem. Laszlo states that 'the principles of the regulatory circuits involved in embryonic development are not known… almost nothing is known about how the human organism instructs itself to build, for example, a human hand' (1993, 101). The development of the embryo requires the ordered unfolding and coordinated interaction of billions of dividing cells (e.g. some cells become a liver and some a thumb at a precise time and place). If this process were entirely coded by genes, the genetic program would have to be complete and detailed and yet flexible enough to ensure the differentiation and organisation of a large number of dynamic pathways under a potentially wide range of conditions. Yet, the genetic code is the same for every cell in the embryo. Anticipation of embryo development is more than a technical issue:

> Since the chemical compound DNA is assumed to act only chemically, it cannot vary its actions in the way a builder with a mind can. Therefore, there must either be another element in the organism that can function as a builder, merely using the DNA compound as its blueprint, or, as the theory supposes, the DNA must merely be responding chemically to chemical compounds. In the latter case, if it acts differently at different times, there must be different chemical compounds for it to react with at different stages of embryonic development. But these compounds must be called into existence only *at the end* of the embryo's previous stage. Timing is therefore most important. No theory yet exists to explain how this can be done in a strictly chemical way.

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[1] Entropy can also decrease in some inanimate open systems (sometimes called *dissipative structures*) but not with an increase of functionally different dynamic processes and non-uniformed (but not random) complexity at the same time, as in the case of life.

> The development of such a theory is rendered more difficult because, as Driesch first showed in his work with sea-urchin embryos, there seems to be some resilience possible in the development of tissues. Some tissues can sometimes seemingly be "pressed into" undergoing changes they do not normally undergo, because some part of the embryo has been prevented from developing in its usual way. It is almost, in these cases, as if there *were* a builder who has had to use some ingenuity because of shortages of one material or another or because something has previously been built erroneously and he must now build upon and around this. (Polanyi and Prosch, 1975, p.166)

This is reinforced by the findings that some organisms 'possess programs of repair that could not have been naturally selected: the kind of damage which they repair is not likely to have befallen their progenitors in the entire history of a species' (Laszlo, 1993, p.102).

The problems that the materialistic framework faces are not limited to the internal workings of living beings, but extend to some widespread behavioural aspects of complex organisms. One among many examples highlighted by biologist Rupert Sheldrake is the European cuckoo that lays its eggs in the nests of birds of other species. The young never see their real parents. Towards the end of the summer the adult cuckoos migrate. About a month later, the young cuckoos congregate and also migrate to the same region. They instinctively know that they should migrate, when to migrate, in which direction they should fly and what their destination is. Materialists believe that this is all somehow programmed by their genes, but this is far too complex behaviour to make this explanation likely.

The results of a series of experiments meant to test whether learned behaviour patterns are inherited are equally puzzling. Behavioural psychologist William McDougall in the early 1920s trained some rats to perform a simple task. The experiment involved 32 generations of rats and took 15 years. Later generations of rats (separated from the previous generations) consistently learned more rapidly than the previous ones, the last over ten times faster than the first one. More significantly, when separate experiments in other parts of the world replicated the original one, the first generation of rats learned almost as rapidly as McDougall's last generation. A number of them even performed the task correctly immediately, without making a single error.

The above suggests that not all biological functions cannot be comfortably explained within the materialistic paradigm. Life seems to be more than just molecular reactions. Polanyi and Prosch conclude:

> We must admit that we do not yet have the reduction of living processes to physical and chemical laws that modern biologists seem to think we can have. We not only *have not proved* that these adaptive aspects of the DNA's building capacity can be reduced wholly to physical and chemical operations, *but we never can do so.* (1975, p.167)

Religious interpretations

Most religions accept a dualistic nature of life, meaning that it cannot be cut down to the physical or chemical properties of the organism. A non-material component is, in fact, considered essential for life. Almost every spiritual tradition recognises the existence of soul, spirit or atman, which is one of the main differences between them and the materialistic perspective. However, it is unclear how this component interacts with the body and to what extent it can exist independently from the body (before birth or after death). Moreover, it is also uncertain which organisms have this non-material component. Philosopher Descartes, for example, who attempted to provide rational foundations for dualism, reserved it only for human beings, but this seems arbitrary.

The contribution of philosophy

Vitalism is a major contribution of philosophy to the debate about the nature of life (Henri Bergson being its best known exponent). Its main input was to point out the incompleteness of reductionist and mechanistic interpretations. Like the ancient Greek philosophers, including even Aristotle, Vitalism argues that the difference between living organisms and inanimate bodies cannot be explained solely in material or physicochemical terms. Living forms, it is claimed, have an additional, non-material, vital element - a universal life force, which may or may not be capable of existing apart from its hosts. The nature of the life force was debated even earlier by numerous philosophers of which some (e.g. Paracelsus) believed that it is an external property and others that it is an internal, spontaneous, event. Life as an explanatory and evaluative concept appealed to many philosophers in the 19th century as a reaction to scientific materialism, although the success of synthesising an organic compound artificially in the first half of the same century weakened dramatically the Vitalist position. Failed attempts to find *vital élan* in the body which, in fact, would have reduced it (if they were successful) to another type of physical force similar, for example, to the electro-magnetic force, confused the matter further. Vitalism resurfaced in the 20th century in the work of the already mentioned Hans Driesch, when he discovered that despite extreme interference in the early stages of embryological development, some organisms nevertheless develop into perfectly formed adults. He proposed the existence of a soul-like force which guides the development of an embryo (in his later writings, Driesch argued that all life culminates ultimately in a ‘supra-personal whole’). Such conclusions are, of course, only interpretations of data available at that time. However, there are further reasons why prevailingly dismissive attitude at present towards similar ideas may be inadequate. They will be considered below.

THE SYNTHESIS PERSPECTIVE

Life is usually defined as an entity that has the capacity to perform certain functional activities including metabolism, growth, reproduction, responsiveness and adaptation to stimuli such as light, heat and sound. It is further characterised by the presence of complex transformations of organic molecules and by the organisation of such molecules into the successively larger units of protoplasm, cells, organs, and organisms.

Although the above mentioned abilities are obviously a very important part of the life process, it is questionable if they really define life. An organism that does not reproduce (e.g. mules that are born sterile) or has stopped reproducing or growing is still alive, thermometers can respond to heat yet they are not alive. These examples are brought up not to point out that such a definition is imprecise (after all, most definitions have fuzzy boundaries) but that something essential may be missing. What common-sensically seems fundamental to life are the abilities to experience and to be pro-active, and consequently, having a *unique* centre of experience and pro-activity (meaning that my experience cannot be your experience). In other words, awareness, intent and the self. A computer, for example, can perform certain operations that can be paralleled to mental processes. Yet, a computer has nothing that can be paralleled to awareness. A computer can perhaps simulate thinking, but it is not aware, it does not experience. It can beat a human being in chess, but it is not aware that it has won and it cannot feel happy about it.

There is, however, an epistemological problem with the above proposition. An ability to be aware may be a necessary characteristic of life, but due to the inherent limitations of observation, it cannot be easily verified. We phenomenologically know that we are aware. It can be also extrapolated from verbal reports and the behaviour of others that they also experience. Animals react in a similar way to situations that cause pain, pleasure or fear, so it is plausible that they have a similar capacity. But what about plants or bacteria or even individual cells in one's body? Do they experience at all? They may have some rudimentary experiences that are so different (e.g. temporally) that it is impossible to make any conclusions on the basis of observations, including transpersonal ones[1]. The self is also non-observable. However, something that separates an organism from inanimate matter can be observed, and this is self-generated movement. Some believe that this will

[1] The concern here is not with the nature of such experiences (which is the subject of Nagel's classic paper 'What is it like to be a bat?'), but whether they experience anything at all.

also eventually be traced back to physical causes, but nobody has ever managed to come close to proving it. Philosopher Teichman writes: 'A human being is in a way a self-caused cause so far as his actions are concerned, unlike a stone' (1974, p.33). There is no reason why this should not be expanded to other living organisms. That innate activity is an important difference between the animate and inanimate has already been pointed out by Cicero, Thomas Aquinas and many others. While one of the main characteristics of the matter is inertia, agency is one of the main characteristics of life. Inanimate objects can undergo certain processes or be moved under the influence of various forces, but are not active. They are passive, acted upon. A stone does not fall, it is fallen by the combination of gravitational force and other physical factors. On the other hand, life can be proactive, as well as reactive. Many internal processes are the result of an organism's chemistry and some of its activities can be reduced to reflexes, but not all. Similarly, many processes in the car and its movement are the result of the car machinery and its interaction with the environment, but a driver is necessary to start and direct it. This distinction is quite clear in practice. The limbs of dead frogs can be made to twitch by applying an electric current, but nobody in shis right mind would confuse this with life. What is recognised as self-initiated movement is associated with life and only with life. As discussed earlier (and as is also evident from any introspective analysis), intent seems to be its most plausible source. Considering that intent is impossible without the self and awareness, they too can be linked to life. To put it simply, energy is alive if it is focused.

The self, awareness and intent are attributes of the One. If life forms are in the process of becoming the counterpart to the One, they must also have self and at least rudimentary intent and awareness, and consequently a non-material aspect – the soul[1]. So, energy is alive if it has the self and the abilities of awareness and intent (they, of course, do not need to be always active - an unconscious person is not dead, just as a switched off radio is not broken[2]). This is what distinguishes the animate from the inanimate. The soul brings the dynamic principle (inner movement) into that interaction,

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[1] If referring to these elements rather than to the physical body, humans and, in fact, all life forms reflect indeed 'God's image' (in the case of the latter, of course, God merely reflects the human image).

[2] These inactive states are temporary, so the above argument regarding reproduction, for example, does not apply. A permanent cessation of awareness and intent, for all practical purposes, indicates cessation of life (there are border cases though, when a person is artificially kept alive, but if there is no hope that such a person will regain at least some awareness, life support machines are usually turned off). Permanent cessation of reproductive ability, on the other hand, does not indicate cessation of life.

which enables life, development and evolution. This view was commonly held since antiquity. Thomas Aquinas wrote (using the Latin term *anima* for the soul):

> Animate means living and inanimate non-living, so soul means that which first animates or makes alive the living things with which we are familiar. (in Thompson, 1997, p.120)

What does not have the self, awareness and intent does not have its own life. Only humans can conceptualise their intentions and what they are aware of, but it has been observed that even simple organisms possess a certain level of awareness and intent[1]. This implies (contrary to what Descartes thought) that soul can be associated with all living organisms not only humans. Which is not to say that an individual soul always corresponds to an individual biological form. Almost certainly not every fruit-fly or ant has its own soul and self. Considering the highly synchronised nature of their societies it is more likely that most of the related non-material energy of single-cell organisms, some insects and plants is focused collectively, while individual selves constantly appear and disappear depending on the extent of separation from the collective that is happening at any point. Evidence for this is that an insect such as ant, for example, cannot learn from experience, but insect colonies can. Even in higher organisms some energy fibres may still be attached to a collective energy field, which could account for the cumulative learning of species mentioned earlier on (p.142)[2].

Thus, the basic premise here is that life is a result of an interaction between two distinct types of energy (material and non-material) and therefore cannot be reduced only to the physical and chemical properties of the body. Reductionist attempts run into numerous difficulties, and also certain phenomena can be better explained otherwise. So, although the claim that all life forms (including one-cell organisms, plants, animals and humans) have a non-material aspect cannot be materially verified, it is not less rational than the belief that one day everything will be possible to understand in terms of physical and chemical properties. Such reasoning is not foreign to science. Gravitational fields, for example, (not to mention super-strings and other esoteria) cannot be detected directly either, but are postulated from their effects or the requirements for a coherent model of reality. It should be also taken into account that the above inference is supported by common sense (e.g. the notion of self) and cross-cultural transpersonal experiences.

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[1] Polanyi and Prosch maintain that '…even paramecium is an individual that quite apparently strives… to adapt itself to its conditions and to stay alive and to reproduce' (1975, p.170).

[2] Rather than bubbles, souls can be imagined as the crests of waves that are connected underneath.

The connection

It is already suggested that the waves produced in the brain are instrumental for mental processes, but they are not sufficient to maintain the relationship between the material and non-material aspects of a living system (otherwise the connection would be broken in a deep sleep or when unconscious). The body, however, produces other wave patterns. The body can be indeed considered 'a complex network of resonance and frequency' (McTaggart, 2000, p.53). All the organelles (cell's 'organs') are rotating and vibrating. Each of them is involved in this 'musical' activity of creating rhythmic waves of energy. Some of these vibrations are innate to chemical components, but some of them are genetically programmed. It is known that DNA produces a wide range of frequencies, so genes can be understood as 'notes' in a composition that is unique for each person. Of course, functional genes are not the candidates for the connection. However, the wave patterns produced by some of the DNA sequences that present scientists call 'genetic garbage' (because they do not contribute to protein production) may be responsible. One curious characteristic of life is that, unlike machines, life cannot be interrupted. For example, a car can be switched off and turned on again much later. Life cannot. A living organism needs constant activity. In principle, this should not be necessary in order to preserve body functioning, and is ineffective from the energy consumption point of view. It is more likely that the constant working of the body is needed to maintain the vibrations that connect the body to the soul[1].

Non-material energy consists of wave patterns too, so there are reasonable grounds to believe that, at least in some cases, they can resonate with the waves produced by heavy and slow matter (or its constituent parts on the border with non-material reality). The soul and the body can therefore be considered different forms of energy that are linked via waves[2]. Thus, the soul is not in the body or attached to the body, but body and soul resonate with each other. This process goes in both directions, but the material aspect is normally more intense. The likely way that this connection happens is that each body and soul has a specific wave pattern, a unique signature. When a new organism is created, if those signatures are compatible, the waves of the soul harmonise with the waves of the body and in that way the body gets connected to the soul. When the body ceases to function (and produce waves), that connection is broken. This means that the body is a replaceable part of that system.

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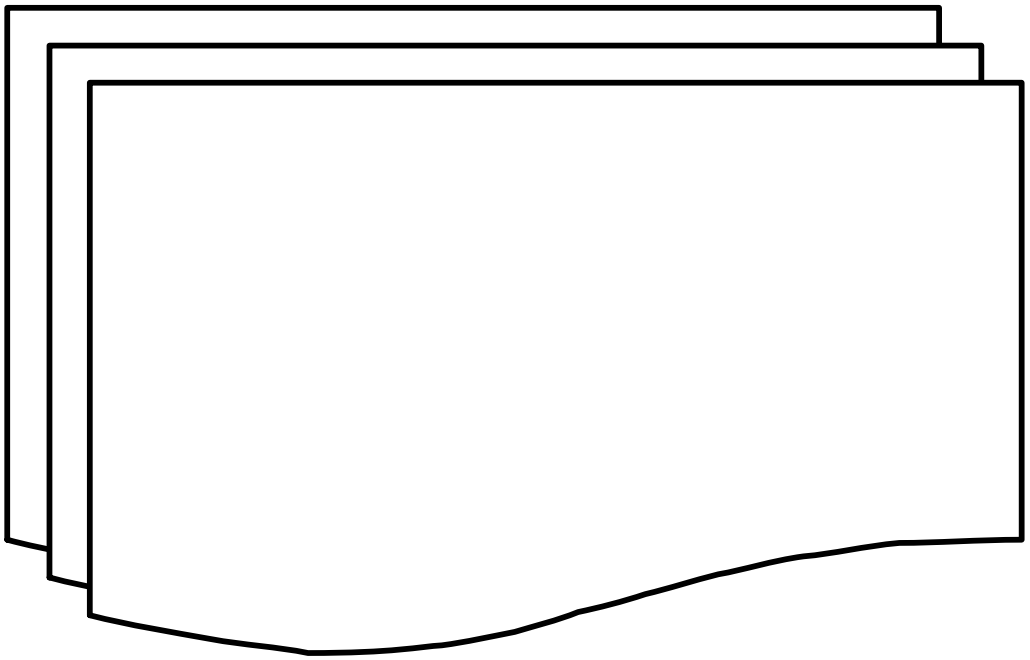
[1] Plant seeds and some simple organisms can be dormant for a long time, which seemingly contradicts the above. However, they can be considered not a life but a potential life, similar to frozen sperm.

[2] It should be pointed out though, that not the whole soul, but only a part of it is associated at any point with physical (or mental) life.

Although the connection between the body and soul may be attributed to the waves produced on the molecular level, the question may be raised whether there is a 'relay station', a crucial part of the body in this respect. Historically, several 'seats of the soul' have been suggested (liver, heart, brain, pineal gland), but the only part of the body that could really be a candidate for this role is the brain stem (the area at the base of the brain that includes the midbrain, the pons, and the medulla). The brain stem contains the ascending reticular activating system, which plays a crucial role in enabling and maintaining alertness. Even small lesions in some parts of the midbrain and the pons cause permanent coma. The brainstem also contains the respiratory centre that is responsible for breathing (so it can be associated with the 'breath of life'). Moreover, all of the motor outputs from the cerebral hemispheres (e.g. those that mediate movement or speech) are routed through the brainstem, as are the efferent fibres of Autonomous Nervous System responsible for the integrated functioning of the organism as a whole. Most sensory inputs also travel through the brainstem. Consequently, if there is no functioning brainstem, there can be no integrated activity of the cerebral hemispheres, no thoughts or sensations, no interaction with the environment.

All this, of course, does not amount to a proof and is no more than suggestive. Because of its anatomical position and other factors brainstem is notoriously difficult to study. Nevertheless, if there is a crucial part of the body responsible for a stable connection with the non-material aspect, brainstem seems the safest bet. This is not to say that the brainstem is an 'organ of connection' (otherwise organisms that did not develop a brainstem would not be really alive). It is the only probable place though, where there could be a necessary and sufficient concentration of wave patterns to maintain the permanent resonance in higher organisms. Possibly all body parts have weak connections, but they most likely cannot be maintained if not linked to this centre[1]. It is interesting that an interference with the wave patterns of an organ can cause disassociation even if it is still attached to the body. For example, when one's arm is exposed to a strong electric current, it is not experienced as one's own, but as a foreign attachment.

[1] 'Most likely' is added because of strange recent claims that patients with transplanted organs can apparently pick up some experiences that belonged to their donors. More research is required for all these issues, but in the present climate, this is something that one can only hope for.



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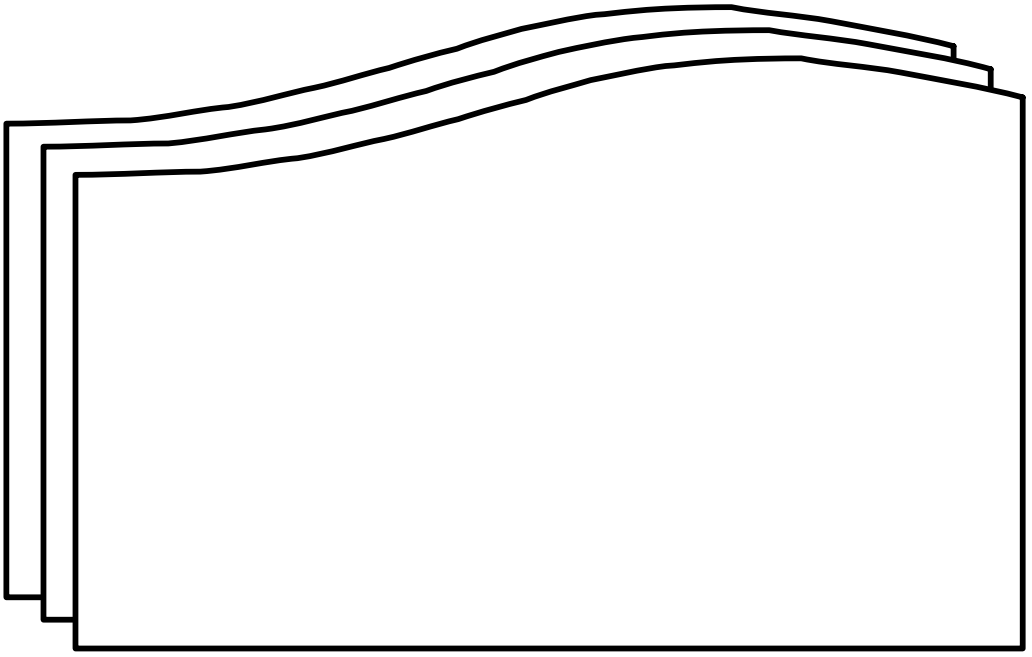

THE MIND

In the study of the mind there is a popular distinction between the 'hard' problem (the mind-body problem, qualia) and 'easy' problems (perception, memory, sensory-motor control etc.). However, even 'easy' problems do not seem to be fully understood with the methodology that psychology and neuroscience use at present. As Barbara Churchland (herself holding strictly materialistic views) puts it:

> It is important to acknowledge that for none of the so-called "easy" problems, do we have an understanding of their solution… It is just false that we have anything approximating a comprehensive theory of sensorimotor control or attention or short-term memory or long-term memory. Consider one example. My signature is recognizably mine whether signed with the dominant or nondominant hand, with the foot, with the mouth, with the pen strapped to my shoulder, or written in half-inch script or in 2-ft. graffiti. How is "my signature" represented in the nervous system? How can completely different muscle sets be invoked to do the task, even when the skill was not acquired using those muscles? We still do not understand the general nature of sensorimotor representation. (1998, p.112)

The above example has been touched upon earlier (p.174), but it may be worthwhile to reconsider some major faculties of the mind in more depth. A dominant approach at the moment, cognitive psychology, has been a huge improvement to its predecessor, behaviourism, but still does not go far enough. Firmly embedded in a materialistic paradigm, cognitive psychology has been enthusiastic about modelling the mind on the principles that govern computers (assuming that the brain is a very complex computer). Serial and parallel processing in such models can account for some brain events, but this does not say much about experience (e.g. of pain or colour), affect, humour, creativity, insights, understanding etc. The philosopher of the mind Ronald Puccetti and neurophysiologist Robert Dykes write:

> …it appears that the more we learn about details of brain function, the greater the difference between these and the known qualities of sensory experience. (1978, p.337)

Furthermore, processes in a computer are of a mechanical nature, so a computer is completely passive. In other words, it is not aware, and does not have the self and agency. Excluding these essential factors from the study of mind can provide at best an impoverished picture, so a broader approach is needed. In this part, several subjects will be discussed: the role of mental constructs; experience, information and meaning; and some sources of experience and information (perception, memory and auto-generating processes such as dreaming).

CONSTRUCTS

We can relate to the world directly or indirectly, through mental constructs. Both ways can affect the soul, but they are different. The direct interaction is more penetrating and fluid, while the indirect one is more concrete and easier to control. Direct perception is difficult to conceptualise but is not that uncommon. For example, it can explain greater speed of reaction in emergencies or in sports than the speed at which information can normally be processed[1]. It may also be involved in implicit awareness and even antedating as documented in experimental settings. In principle, considering that everything is essentially a set of vibrations, a direct receptivity to these energy fluctuations is always possible. However, most of the time we relate to reality indirectly, via our mental constructs, thus special attention will be paid to them. One clarification is, however, needed first. Although it is tempting, for the sake of simplicity, to identify indirect perception with constructs, they are not the same. The constructs are *the result* of perception (direct or indirect). Direct experiences can also be structured, without the help of mental representations (analogous, perhaps, to music). After all, avoiding chaos or harmonisation is one of the main aims. However, there is a difference between structuring the content of the mind and energy. The latter is not governed by the same principles, it is less stable and fixed, and consequently, its deliberate control is harder.

One of the main functions of the mind is to construct reality (which does not mean, of course, that there is no correspondence with what is 'out there'). This process consists of first fragmenting, and then connecting so created elements again, using various principles (e.g. generalisation based on similarities and differences, association etc.). The mind not only creates constructs but also maintains them. Constructs need to be supported all the time, or otherwise they can easily break down, as evident in situations of sensory deprivation and social isolation. They are kept together by exposure to physical sensations and use of language (dialogue and inner monologue). Therefore, we are not only aware of the world indirectly through the 'glasses' of the brain and body, but also through the 'glasses' of various mental systems.

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[1] Libet concludes that these experiences are unconscious (without awareness), but this is not plausible – we do not draw a blank in this situations. However, we may not *know* what we are aware of. This requires at least a rudimentary level or reflection, which may not be present indeed.

THE RINGS

Mental categories do not exist independently, our 'thoughts, beliefs, attitudes, and behaviour tend to organize themselves in meaningful and sensible ways' (Zajonc, 1960, p.261). In other words, the constructs are connected in a system, an 'inner structure' that can be loosely defined as a network of prior knowledge, or a set of memory schemas that support each other. Processing new information means fitting it into this overall structure that is created through interaction between the person and the world. Everybody starts building shis inner structure from the beginning, and continues to do so throughout shis life. Some parts are adopted and some are the result of personal experience. As sociologist Peter Marris points out, 'in part, these mature structures of meaning can be represented as the common knowledge into which the members of a society are inducted by the language they learn, the principles of classification and causality they are taught - its science, cosmology, ideology, and cultural assumptions. But they also interpret the unique experience of each personal history' (1982, p.192). So, the structure is not only physically and socially determined, but also depends on the individual.

There are indications that the inner structure is organised into several layers or rings. Although the content of the rings can be extrapolated through introspection, verbal reports or behavioural clues, perception of the rings is prevented by our own rings[1]. Thus, while the body can be perceived indirectly (through the senses) and some processes in the soul directly, the rings cannot be. Their existence and organisation is postulated here on the basis of two revelatory experiences and deductive inferences. Considering that it is difficult to validate revelatory insights, the rings do not need to be accepted literally. They can be taken as a conceptual device that is conducive to providing a fuller account of mental operations. Such tools have been used in other disciplines. Science, for example, has created several models of the atom, of which some appeared later not to be entirely accurate, but nevertheless have served a purpose at a certain stage of understanding.

It is suggested that human beings can have up to four rings (while animals have only one). Any mental event can, of course, cut across the rings as brain modules cut across several layers of neuro cells. Each ring has two aspects: one forms the self-concept (personality, or 'I'), while the other

[1] If an attempt is made to bracket our own rings, the rings of others get bracketed too, so again we cannot perceive them.

forms the world concept. Every further ring is less conditioned and rigid, and therefore more susceptible to the influence of intent.

The first ring is primarily constructed through images (and other perceptions). The reference point is physical reality. As all the other rings, it has two faces: one consists of the perception of the material world, and the other of the perception of one's own body (as a primary identifier). Virtually everybody agrees that our perception of the physical world is a part of consciousness consisting of constructs that correspond (to some degree) to reality. This applies to our own bodies too. The image of the body is also a construct reinforced by physical sensations from moment to moment. Searle writes:

> Common sense tells us that our pains are located in physical space within our bodies, that for example, a pain in the foot is literally in the physical space of the foot. But we now know that is false. The brain forms a body image, and pains like all bodily sensations, are part of the body image. (1992, p.63)

But the brain constructs a 'wrong' image, very different from our perception of our bodies (e.g. the neck is *not* next to the head). We, however perceive the body correctly. It is proposed that this is due to the first ring. A so created image is, of course, a dynamic structure – as the body changes, the structure changes too (often in a subtle way).

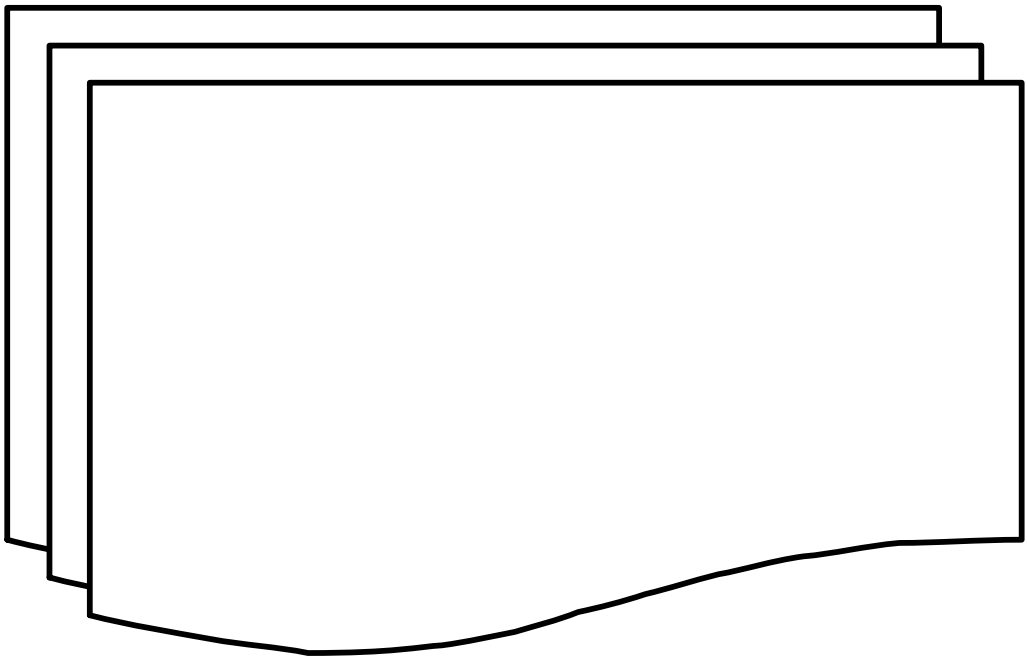
The two sides, the perception of one's body and of the physical world, are closely related and integrated. Their de-fragmentation can have a devastating effect (as it is well documented in psychiatric literature). Although a largely spontaneous process, sustaining the ring requires some effort. As early as the 1920s, neurologist Paul Schilder wrote that 'The body-image is the result of an effort and cannot be completely maintained when the effort ceases' (1935, p.287). This effort consists of the attention to sensations received through the body from physical reality and the body itself, and of intentional control over some parts of one's body (as already mentioned, if one's limb, for example, is paralysed or cannot be controlled, it is almost immediately perceived as alien).

The second ring consists of socially determined constructs and is primarily structured through language. The reference point is social products (e.g. text-books, religious texts, instructions, rituals). These conceptual schemas create a net of information that becomes, beside the body-world image, another frame of the soul. It is more permeable and broader because it has elements that cannot be physically perceived (e.g. abstractions such as 'happiness') and because it has more flexible rules.

This ring also has two complementary sides: the one that relates to oneself (one's name, social identifications, roles and functions, etc.) and another relating to one's social world, the particular ideological framework

within which a society operates - in other words, the cultural embodiment (e.g. one's religion).
The third ring also has two aspects: one relates to personal views, opinions and values about the world and others (e.g. friends). The other incorporates personality constructs (the self-image or ego). The reference point is not the physical or social world but one's own private world, which is why a sense of personal importance is one of its main characteristics. Self-creation is also an imperative. Ego, therefore, is not permanent – it is an evolving projection, a construct, an image that we have about ourselves (which does not need to correspond fully to the real person). It is largely based on impressions that we leave on ourselves, self-assessments. For example, although judgements such as 'I am old, fat, beautiful…' refer largely to the body, they belong to the third, not the first ring. This construct is another embodiment of the soul, another identity besides the body and social roles. As the other rings, self-image has a protective role – we create an ego-shell as a psychological shield to protect us when we go beyond the conventional and start developing individuality. This ring not only enables further separation of the soul from other non-material energy, but also its intentional shaping based on self-reflection (rather than just through instincts and responses to the environment) and a better control over mental processes. It is, therefore, more modifiable and permeable than the previous rings and can accelerate development.

The fourth ring has two sides as well. One consists of global ideas about oneself as a human being (e.g. perceiving oneself as an electro-chemical process, an emergent brain process, or an interaction process). The other consists of the constructs related to wider reality beyond an individual's immediate experience. In other words, a 'cosmology' that defines one's view of reality (which may involve, but does not need to, the non-material aspect). So, the reference point is the universal. All the major ways of acquiring knowledge, at their best, contribute to this ring. For example, the laws or thermodynamics in science, the dialectic principle in philosophy, common sense realism, and the notion of the purpose, meaningfulness of life in spirituality. Not all of them, of course, need to be correct, but it is notoriously difficult to prove or refute them (even the laws of thermodynamics are in fact not laws but theorems). Thus, an element of belief and choice (that is sometimes based on unadulterated intuition) may be involved. This does not mean that they are relative and subjective, only that their validation (or refutation) requires a complex or multidisciplinary process, often difficult to achieve using existing language and linear logic. For this reason, they are frequently expressed in highly symbolic ways (e.g. geometrical and mathematical representations, archetypal images, metaphors etc.). This ring has the most permeable boundaries.



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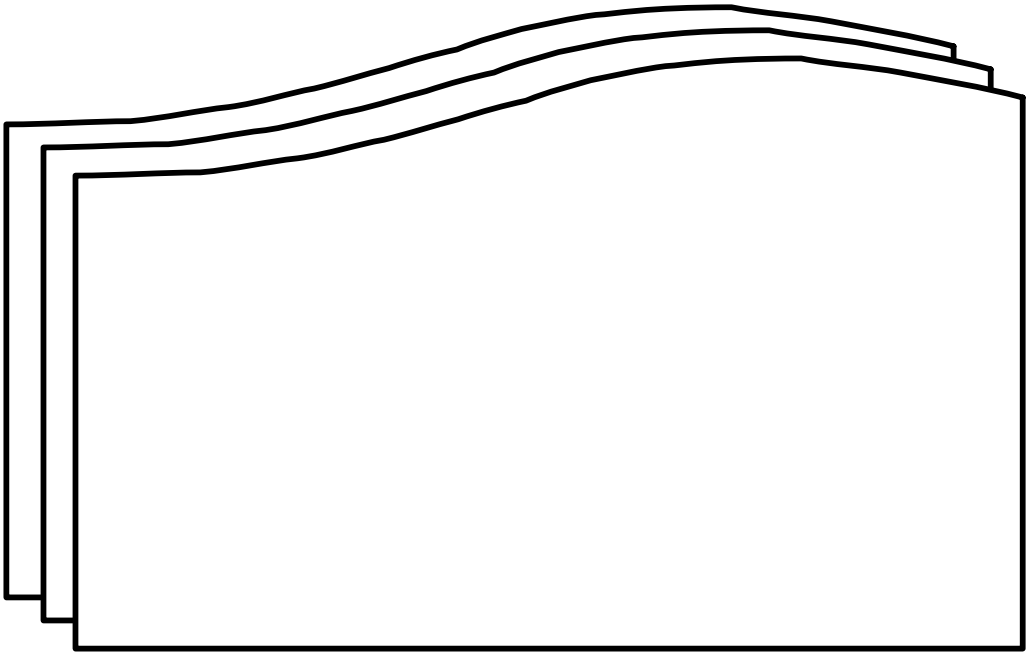


THE SOURCES OF EXPERIENCE AND INFORMATION

The three major sources of experience and information are chosen: perception, memory and learning, and dreams as an example of auto-generating processes. The intention is not to provide a comprehensive overview, but to outline an interpretation from the Synthesis perspective.

PERCEPTION

Some issues related to perception have been already addressed. The focus here will be only on one essential question: how are nerve signals turned into perception of the world? Psychology and other related disciplines have not and are unlikely to provide a satisfactory answer as long as they operate within the presently dominant paradigm. Eccles writes:

> There is a general tendency to overplay the scientific knowledge of the brain, which regretfully, also is done by many brain scientists and scientific writers. We are told that the brain "sees" lines, angles, edges, and simple geometrical forms and that therefore we will soon be able to explain how a whole picture is "seen" as a composite of this elemental "seeing". But this statement is misleading. All that is known to happen in the brain is that neurones of the visual cortex are caused to fire trains of impulses in response to some specific visual input. Neurons responding to various complications of this specific visual input are identified but there is no scientific evidence concerning how these feature-detection neurones can be subjected to the immense synthetic mechanism that leads to a brain process that is "identical" with the perceived picture. (Popper and Eccles, 1977, p.225)

It is known that retinal processing is involved in detecting intensity and wavelength contrast; early cortical areas in the brain are involved in orientation, curvature, spatial frequencies and movement; and high visual areas (in the parietal and temporal lobe) process sensations about the spatial relationships and the identity of visual objects. This, however, is not sufficient. Sherrington's comment from 1938 is still valid:

> A star we perceive. The energy scheme deals with it, describes the passing of radiation thence into the eye, the little light-image of it formed at the bottom of the eye, the ensuing photo-chemical action of the retina, the trains of action potentials travelling along the nerve to the brain, the further electrical disturbance in the brain, the action-potentials streaming thence to the muscles of eye-balls and of the pupil, the contraction of them sharpening under the light-image and placing the seeing part of the retina under it. The 'seeing'? That is where the energy-scheme forsakes us. It tell us nothing of any 'seeing'. Much, but not that. (1940, p. 248)

In order to tackle this problem the terms *sensation* and *perception* need first to be distinguished. Putting it simply, while sensation is about touch, vision and audition, perception is about feeling, seeing and hearing. Perception can be defined as the process of transforming sensations into information or experience. Although the neuronal activity without doubt contributes to perceiving, we are not even aware of such activity - we operate with words, images and feelings, not with neurons.

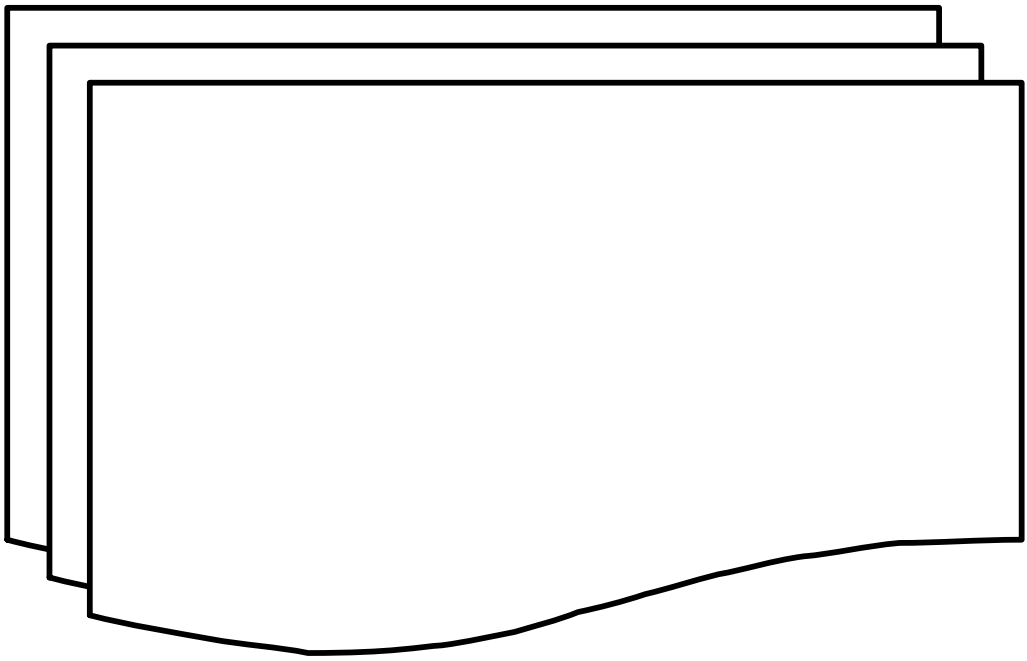
The first point that needs to be made is that perception ensues from the relation between the subject and the object. If this statement sounds obvious, it should not be forgotten that in the last hundred or so years everything possible has been done (without much result) to find an alternative explanation that would exclude the one who experiences and is aware. So, reinstating the subject, as an essential ingredient that transforms sensations into perception, is necessary. Perceiving sensations as meaningful images, for example, involves, besides electro-chemical processes in the brain, also awareness, intent and the self, without which meaning would not be possible. Thus, in accord with the previous posits, it is proposed that the non-material aspect plays an essential role in the transformation of sensations into perceptions and their interpretation.

It is not controversial that when we perceive something the brain is prompted to produce coherent wave patterns, which are otherwise in a chaotic state. In the 1970s neuroscientist Walter Freeman conducted research on the olfactory perception of rabbits. He established that what distinguishes the response to one smell from another does not depend on which neurons fire or what part of the olfactory bulb (the brain region associated with smell) is affected. Rather, it is determined by the relative amplitude of the response in different parts of the bulb. If no smell is introduced, an irregular, chaotic EEG (measurement of the electrical activity of the brain) through all possible frequencies and local amplitudes can be detected. When the rabbits were exposed to a familiar odour, their EEG patterns immediately move from a chaotic to a coherent state. An unknown smell causes a modification in the *collective* amplitude pattern of all neurons in the olfactory bulb. Thus, the production of a coherent wave pattern is what matters, not specific neurons. A comparable principle is likely to govern vision and it is even possible that these patterns can form something similar to holograms.

This is, however, only half of the story. As already argued, the wave oscillations produced in the brain need awareness to be perceived as meaningful images or words (a hologram too needs the interference of two light waves to be created). Moreover, perception is not passive, and therefore cannot be identified with the processes that happen in a camera, TV or computer (although there may be some resemblance on a very basic level). This is an active, creative process, involving several interrelated activities that transform sensations into information and experience:

Participating (attention, interest, curiosity, exploratory drive, seeking sensations and stimuli) is an innate drive. Its importance is highlighted by the experiments with kittens performed by Held and Hein in 1963. They created an apparatus called a 'kitten carousel', which allows two kittens to have exactly the same visual experience, but only one of them can initiate movement. When the kittens were tested, it was found that the 'active' one could see perfectly well, while the 'passive' one behaved as if it was not able to see much, although there was nothing wrong with its eyes or optic nerves. So, the passive kitten could not develop a perceptual ability without active participation.
Selecting - as already discussed, selecting from all possible stimuli is an active process, although over time it becomes mostly automatic.
Organising - the materials of perception are not just received, but they are also combined and structured. Perceptual organisation groups the smaller units into larger ones. The principal organising tendency is to identify part of the world as the target (the figure) and view the rest as the background. Other organising tendencies include 'the law of Prägnanz' (the law of simplicity), good continuation, closure, and the laws of grouping, such as proximity and similarity.
Interpreting - the sensory input is not perceived mechanically, but it is continually interpreted. One piece of evidence for this is *perceptual constancy*, related to size, shape and brightness. It refers to a phenomenon that the perception of invariant object properties remains constant despite changes in proximal stimulation (e.g. we always tend to perceive grass as green, although with decreased brightness it becomes, in fact, brown – which can be easily checked at dusk). Brightness constancy appears to be innate, whereas size and shape constancy are largely influenced by experience. So, the interpretation of reality is mostly achieved over time, and it takes over almost completely from un-constructed perception. This does not mean that what is perceived through our senses is not related to reality. Our perception normally corresponds (in some measure) to something real 'out there'. After all a fly, cat or human being may perceive a table leg in different ways, but they all try to avoid bumping into it. Actually, although our interpretations may be wrong, they often reflect reality better than sensations themselves, as exemplified by *shape constancy*, a subcategory of the above mentioned perceptual constancy: the shape of an object such as a door, for instance, is perceived as constant, even though the retinal image changes with its movement (a rectangular shape becomes trapezoid).

Perception therefore, is not a passive process, the perceived is evaluated, modified to some extent, and interpreted on the basis of previous experience and expectations. This indicates that not only awareness, but also an active involvement (hence intent and the self) are necessary in order to perceive.



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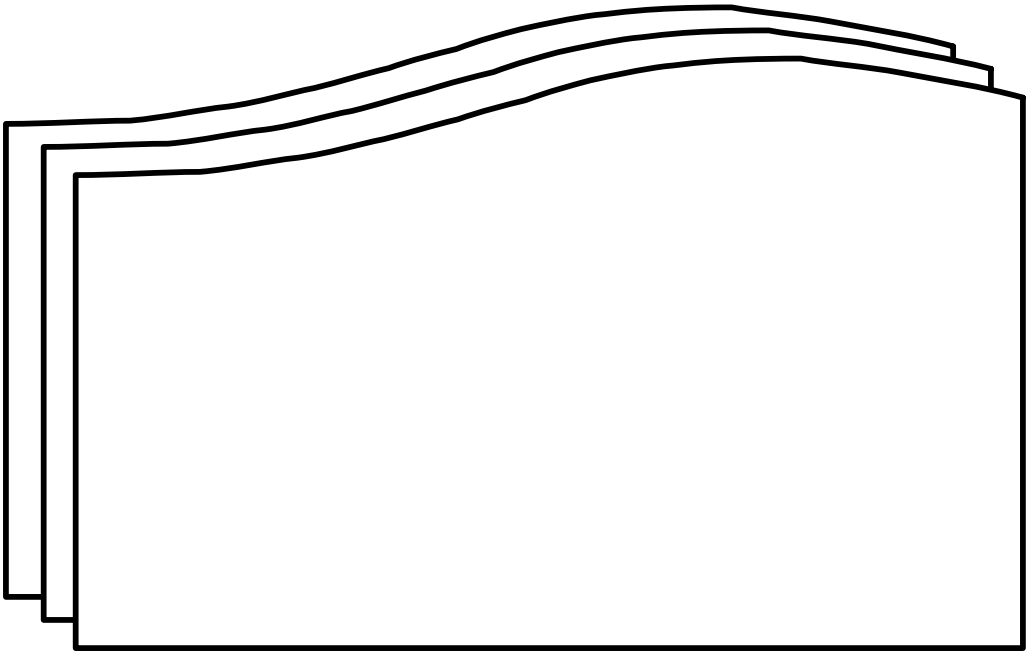

THE PROCESS

EVOLUTION

NEO-DARWINISM

Evolution undoubtedly happens, however, it is far from clear how and why it happens. Neo-Darwinism, the dominant interpretation at present, attempts to operate within a strictly materialistic framework. Evolution is regarded as a gradual process that comes about through the interplay of two factors: *random mutations* (accidental changes of genetic material) and *natural selection* that enables some of these changes to take over on the basis of their adaptive and reproductive advantages. The dynamic of evolution is based on the struggle and competition within and between species for limited resources. Although this process is considered directionless, it is apparently responsible for bringing forth the successive forms of life from single cell organisms to human beings. This interpretation of evolution has its merits, but also has some flaws. It was widely accepted in the 20th century not because it explained everything perfectly, but because it accounted for the facts better than any alternative and because it fitted well with the prevailing ideology of materialism. The purpose of what follows is not an attempt to prove Neo-Darwinism wrong, but to show that it is incomplete, which is why it cannot provide plausible explanations for all the characteristics of evolution (e.g. the increase of complexity) and for all the paleontological and biological facts. Actually, almost every key term associated with this view: chance, natural selection, competition, and gradualism, raise some doubts, especially if taken dogmatically as it is often the case at present[1].

Chance

The materialist view is that all the changes in living organisms from the original single cell to a great variety of species that have existed and exist nowadays are the result of accidental genetic mutations[2]. Sure enough, some

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[1] The phrase 'survival of the fittest', which is also linked to this model is not considered, because, as biologist Waddington already pointed out a long time ago, it is just a tautology: the existing species have survived because they have been the fittest, and they are the fittest because they have survived.

[2] It may be worth mentioning that Darwin is not responsible for this but his followers, who are trying, as any other ideologists or religious people, to be more Darwinian that Darwin himself. He allegedly wrote: 'I cannot, anyhow, be contented to view this wonderful universe, and especially the nature of man, and conclude that everything is the result of brute force. I am inclined to look at everything as resulting

mutations may be accidental, but the claim that all the mutations in all the organisms have been, seems improbable for several reasons.

The effects of random mutations are almost always harmful and incur a loss, not a gain of information and complexity. Only in extremely rare cases may they be harmless. As Denton points out, 'the fact that the vast majority of all mutations which have some detectable influence on the functioning of the organism are deleterious suggests that each functional living system is indeed enormously constrained to adaptive changes along only a tiny fraction of all the possible evolutionary trajectories available to it' (1998, p.341).

Even if an advantageous mutation occurs, the chances of it spreading throughout the population are very small and the chances against are extremely large. Taking into account the number of mutations that should have taken place, it is highly improbable that they would randomly lead from a single cell organism to human beings. The above quoted biologist states that '...evidence for the doctrine of the spontaneity of mutation is hardly ever presented. Its truth is nearly always assumed' (*ibid.*, p.286). Chance mutations acted on by natural selection could scarcely account for variations *within* species (microevolution) let alone for successive variations *among* them (macroevolution). A blind process on an erratic trial-and-error basis is not impossible, but is incredible. Laszlo concludes:

> …A random process could not have produced the kind of order that we meet with in our experience; it could not even have produced the kind of chaos that surrounds us at times. The fact is that pure, unadulterated chance could not have existed in the universe even if it coexisted with strands of order. If a series of chance events had punctuated the developmental process, the things that would have emerged out of that process would have randomly diverged among themselves… Given a process that is subject to pure chance, even previously ordered things would each grow their own way… Evidently, mere chance did not dominate the evolutionary process: there must also have been a significant degree of binding and coordination. (1993, p.18)

A usual response by neo-Darwinists to these challenges to chance as an explanation for the evolutionary process is that given enough time, random mutations would eventually lead to the complex life forms that exist today. However, this does not hold water, especially if long periods of stagnation are taken into account. The rates of mutation necessary are staggering, even within billions of years, considering the cost involved in disposing of the predominant bad mutations. Also, for a good mutation to become fixed in a population, all those individuals which do not have the new trait must die.

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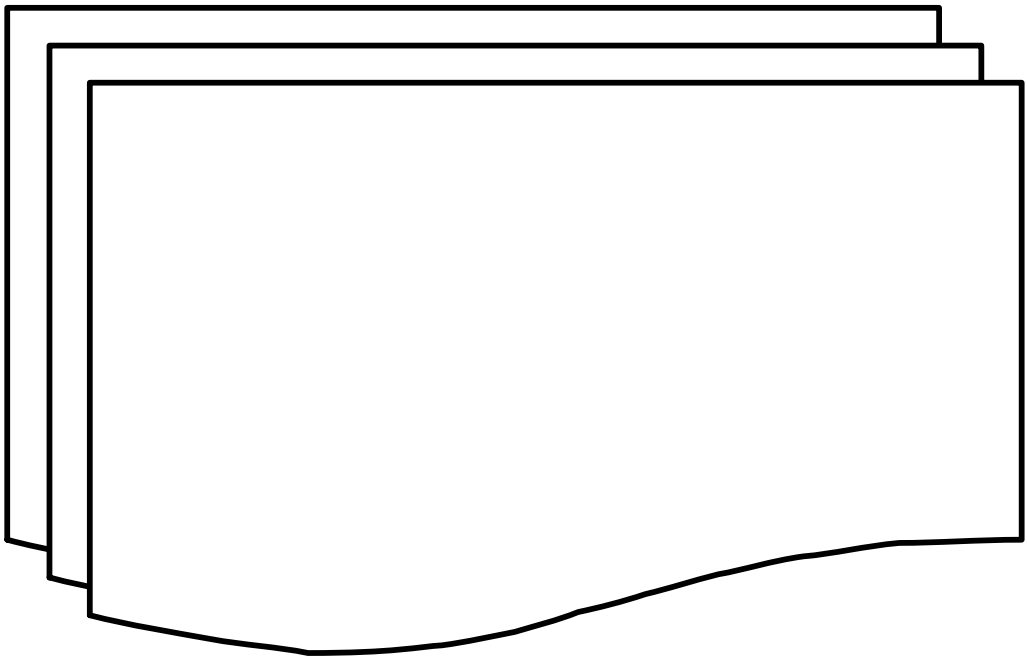
from designed laws, with the details, whether good or bad, left to the working out of what we may call chance' (in Fontana, D. 2003. p.73).

When these considerations are combined with the low rates of reproduction of many animals, there has hardly been enough time for the present species to have evolved. To quote Laszlo again, 'it is highly unlikely that random processes could have constructed an evolutionary sequence of which even a basic element, such as a protein or a gene, is complex beyond human capacities'. (*ibid.*, p.91)

Environmental changes - another reason that makes evolution by chance implausible is adaptation to environmental changes. A suitable habitat may become less suitable in a relatively short time, which may threaten the survival of some species. In order to carry on, they have to adapt to new conditions. But, if species changed only by random and gradual mutations, they could not adapt fast enough. Yet, many somehow have managed to do so, by producing numerous and complex mutations that were just right.

Specific mutations - chance may play a part in mutations, but there are many instances indicating that genetic mutations are not always random and that specific genomic changes can take place under certain conditions. For example, both plants and insects can mutate so as to decontaminate the chemicals that enter their environment and develop a resistance to toxic substances. Some experiments (carried out independently by John Cairns and Barry Hall) also show that bacteria seem to be able to mutate solely their defective genes. Purely random mutations could never be so specific.

Inter-species consistency (*evolutionary convergence*) - despite the staggering variety of organisms brought forth during the Cambrian period (about 500 million years ago), the species that now populate the Earth exhibit striking regularities both within and among themselves. Some highly specific anatomical features show remarkable consistency among species with very different evolutionary histories. For example, the wings of birds and bats have similarly positioned bones as the flippers of seals and the forelimbs of equally unrelated amphibians, reptiles and vertebrates. Diverse species also exhibit common orders with regard to the position of the heart and the nervous system: in endoskeletal species the nervous system is in the back and the heart in the front position, while in exoskeletal species these positions are reversed. Another example is the eye: its basic structure appears to have been invented independently by about forty unrelated species. Organisms faced with the same challenge repeatedly arrive at the same solutions. Even if chance is streamlined through natural selection, the convergence of many highly 'creative' solutions beggars belief.



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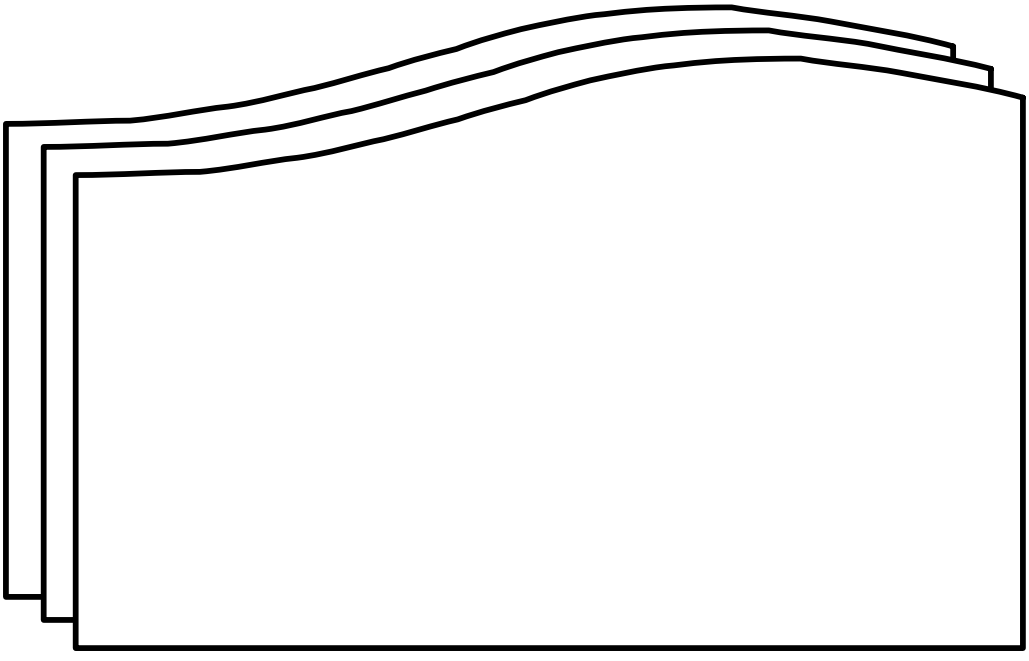

THE SYNTHESIS PERSPECTIVE

The purpose of the above was to outline some problems with the current interpretation of evolution. However, just as the belief in chance being the main driving force is impossible to prove, an attempt to conclusively demonstrate that such a belief is incorrect is equally futile. Anything can happen by chance. Given an infinitely large eco-system and infinite time, everything is possible (although not necessary). But the eco-system of this planet is not infinite, and the time available, although huge, has not been infinite. So, the real challenge is, given these limitations, to provide a framework that is more plausible. It certainly makes sense to consider an interpretation that would give life and the evolutionary process a fair chance, rather than an astronomically small one.

In the mass of arguments and counter-arguments it is easily overlooked that Neo-Darwinism and Creationism have something in common. In both interpretations, life is essentially a passive material, moulded either by the all-powerful external agency or by 'blind' natural forces[1]. The evidence, however, suggests a different picture. Species not only adapt to, but also actively create the environment (the present composition of the Earth's atmosphere, for example, is to a large extent created by the activity of organisms). Life has played a key role in maintaining and modifying its environments, which made possible not only its continuation but also the appearance of new and more complex forms. Thus, the Synthesis perspective considers life an active participant in this process, and suggests two additional factors that influence evolution - the one on the micro level and the other on the macro level. The first is individual choice and the other one can be called evolutionary intent. So, the process of evolution is seen as the result of natural selection and mutations that are not completely random, but influenced by individual choices and an overall accumulative tendency of life to grow and develop. In other words, a creative act is moderated by environmental restrictions. In principle, this is not something that goes against the grain of the theory of evolution. Darwin himself confessed: 'I am convinced that Natural Selection has been the main but not exclusive means of modification' (1859, p.69).

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[1] The Neo-Darwinian orthodoxy that adheres to the Newtonian mechanistic model does not permit any permeability between the internal (e.g. genes) and the external (the environment). In other words, phenotype (behaviour, experience and the other characteristics of an organism) cannot affect genotype (its genetic constitution). So, not only is life completely passive, but the environment has only a selective function. According to this view, 'blind' chance and 'blind' nature work in parallel (or in sequence) but they do not interact.

Choice

That agency plays a role in the evolutionary process should not come as a surprise if accepted that it is one of the fundamental properties of life (see p.68 and p.91). It seems that even very primitive organisms exhibit agency. Choice can be recognised in the way organisms react to stimuli - and they react (in subtle ways) differently, sometimes even contrary to their urges or to what is expected. The influence of choice has been already recognised by a number of evolutionists (see, for example, Hameroff, 1998). This does not need to be seen as a form of Lamarckism[1]. Choice does not need to trigger genetic mutations or other chemical alterations. By making certain choices, an organism changes and affects its environment and its own subsequent preferences, which can *indirectly* tip the balance in favour of some genes rather than others. Popper (who named this 'Organic evolution'), writes:

> Thus the activity, the preferences, the skill, and the idiosyncrasies of the individual animal may indirectly influence the selection pressures to which it is exposed, and with it, the outcome of natural selection. (1977, p.12)

This is compatible with Darwinism and is not acknowledged only because those who would like to see life in mechanical terms are not at ease with giving any credence to a factor that is so non-machine-like. As for Lamarckism, it has received a fresh breath of life recently. A new field of epigenetics (that studies what regulates genes, what turns them on and off) provides some support to the notion that choices we make can affect which genes will be activated in subsequent generations. A number of scientists are working on accumulating the evidence but the verdict is still open. Even if minimally proven right, the reliance on chance would be reduced further, but these ideas would have to overcome scientific inertia before being accepted. What is important, for the time being, is to recognise that choice does play a role in one way or another.

Nevertheless, although choice may explain some adaptations within species better than pure chance, it is not enough. To explain the more global aspects of the evolutionary process (e.g. an overall increase in complexity) another factor needs to be introduced.

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[1] An interpretation of evolution that was very popular before Darwin, asserting that the striving of organisms is the major cause of changes. So (to use a typical example), giraffes have long necks because they were stretching their necks to reach leaves that were high up, which was gradually transmitted to subsequent generations. This description is worth including because it seems so common-sensical that even nowadays many people erroneously interpret Neo-Darwinism in a similar way (Neo-Darwinism does not allow any acquired characteristics to be directly transmitted to subsequent generations).

Evolutionary intent

Reductive materialism has its own reasons to reject the possibility that something else may be involved on the macro level besides pure chance. Polanyi observed that

> the action of the ordering principle underlying such a persistent creative trend is necessarily overlooked or denied by the theory of natural selection, since it cannot be accounted for in terms of accidental mutation plus natural selection. Its recognition would, indeed, reduce mutation and selection to their proper status of merely *releasing and sustaining the action of evolutionary principles* by which all major evolutionary achievements are defined. (1958, p.385)

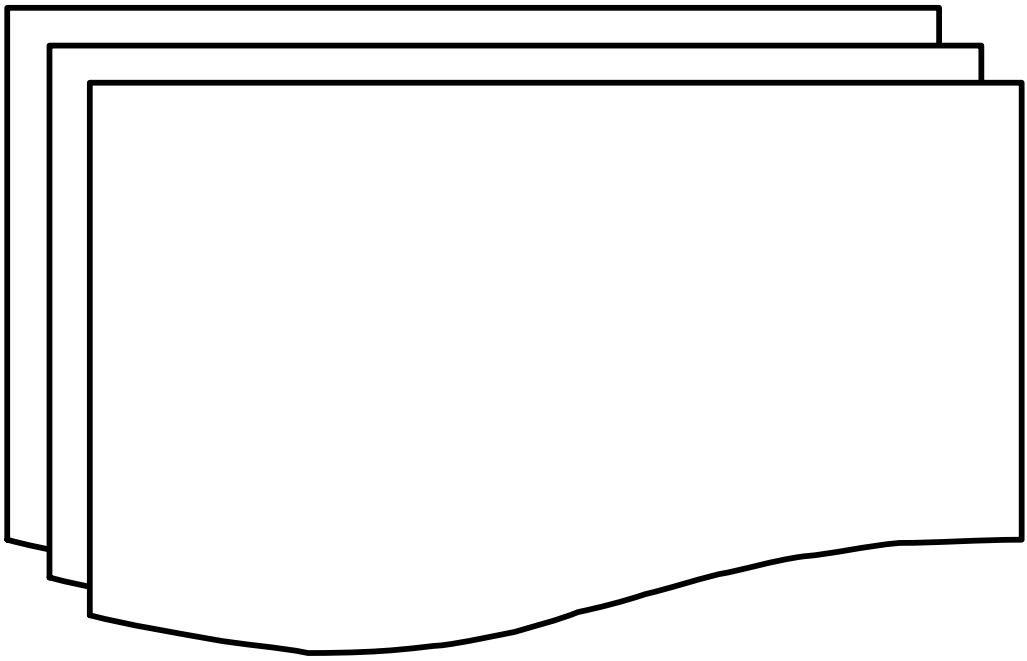
However, too much selection, synchronisation, and amplification of the mutation rate take place to make credible the view that random mutations are the only source of the ever increasing complexity. A number of scholars who do not associate themselves with the creationist account or any religious credo take this view too. Laszlo, for instance, writes:

> One would need an almost blind faith in Darwinian theory to believe that chance alone could have produced in the line of birds all the modifications needed to make them high performing flying machines… it is hardly credible… that small random mutations and natural selection could have produced a dinosaur from an amoeba. (1993, p.98-99)

Evolution generally goes in the direction of more complex forms. Matter, on the other hand, is normally entropic, predisposed towards simplification, so it is unlikely that complex organisms would have developed if only physical and chemical processes were involved. This is not the only reason to reach a conclusion that evolution is not just a series of accidents. The uniformity of mutation rates may be another example:

> The curious equality of mutation rates and evolutionary substitution rates and the just as curious uniformity of protein evolution which have caused endless discussion over the past twenty years have not proved easy to reconcile with Darwinian explanations. And although in no sense can either of these two phenomena be claimed as evidence for design, they are suggestive of something more in the evolutionary process than purely random mutation. (Denton, 1998, p.383)

A further indication is also that evolution does not happen gradually as one would expect if Darwinism was completely right, but in leaps (rapid transformations) followed by long periods of relative equilibrium. This feature may point at something even more important. Namely, that the concerted intent of species, rather than the Intent, is responsible for evolutionary dynamics. If the Intent were directly involved, one would again



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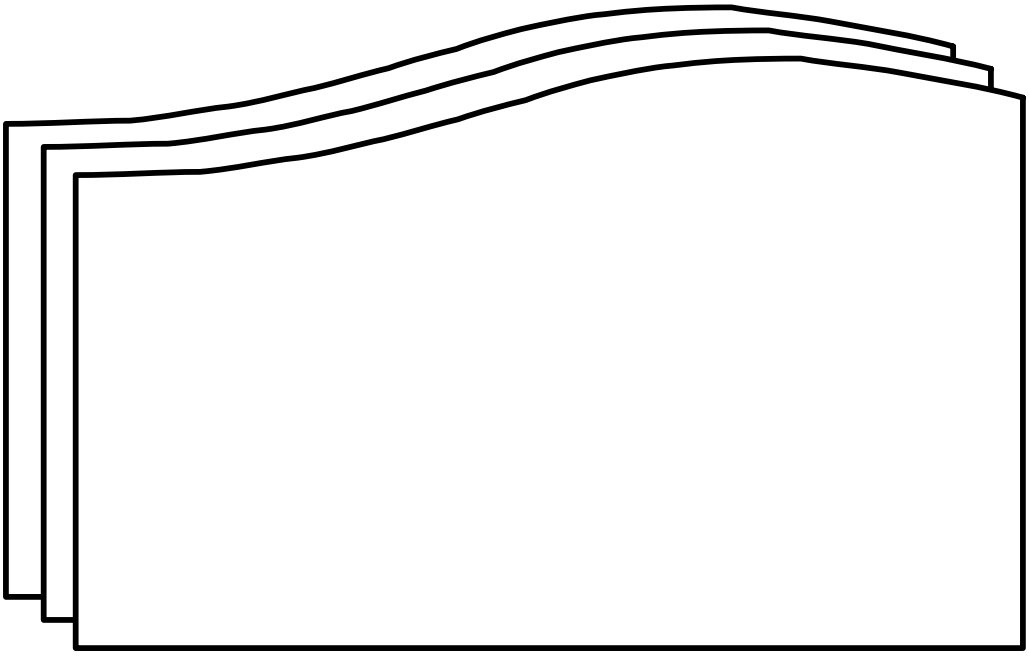

INDIVIDUAL DEVELOPMENT

It is suggested that four factors influence individual development: nature (genes and the physical environment), nurture (the social environment), choice (exercising one's agency), and the 'shape' of the soul[1]. The first two factors have been examined thoroughly in psychology, while the other two have been largely ignored. However, the studies on identical twins, who have also shared the same environment, show that their traits correlate only to about 50%. Evidently, nature and nurture are insufficient. Out of those four factors nature and the 'shape' of the soul are the givens responsible for the character. A new born is not a blank slate - certain potentials can be already recognised in infancy. Innate character though, can acquire different forms and be modified throughout life, which makes one's personality. This is where the other two factors, nurture and personal choice, play a role. Turning to development itself, it is possible to distinguish two types: the quantitative and the qualitative.

QUANTITATIVE DEVELOPMENT

Quantitative development refers to developing capacities such as cognition, volition, affect, skills, etc. It is indicated by an increase in certain characteristics (some of which roughly correspond to the characteristics of biological evolution). The list of such characteristics is proposed below. This list may not be exhaustive and does not imply that all of them are necessary:

- Dynamism (e.g. interest, curiosity, a desire to learn)
- Complexity and differentiation (e.g. being able to recognise the composite elements of a whole; a capacity to grasp different viewpoints)
- Organisation and integration (e.g. an ability to connect and keep together various elements of a concept or operational segments of an activity)
- Perspective (e.g. considering long term plans, other people, global issues)
- Refinement (e.g. sensitivity to nuances, details or subtle points)
- Diversity and versatility (e.g. a variety of interests, knowledge or skills)
- Flexibility (e.g. an ability to incorporate or adapt to a change)
- Creativity (e.g. capacity to generate something new)
- Internal control (e.g. an ability to delay immediate gratification, self-discipline)
- Productivity (efficiency in utilising one's potentials and energy)

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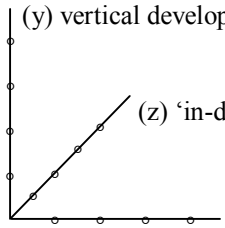
[1] This last one deserves special attention and will be discussed in the following chapter.

QUALITATIVE DEVELOPMENT

This type of development refers to progressive changes throughout the lifespan and involves the concept of developmental stages. Despite individual differences, it seems that some commonalities can be discerned in this respect. It was earlier proposed that the soul grows due to information, experience and intent (p 176). Thus, the three corresponding dimensions of development are suggested. They also correlate with the three dimensions of meaning (see p. 178). This is not surprising, since development is progressive and, therefore, intrinsically meaningful.



Each dimension has four points, representing the four stages: physical, conventional, personal and transcendent[1]. This is, of course, an idealised schema - each stage has sub-stages and there are huge variations within them. Also, they are not inevitable, the rate of change and the final stage reached differ widely from person to person.

It needs to be pointed out that the subsequent stages do not replace the previous ones, although they may modify them. Quantitative development (developing various capacities) within each stage can continue throughout one's life. This implies that a person on a further stage of development is not necessarily better or superior (as a third year student is not necessarily better than a second year student). Any aspect of a person can be well or poorly developed at any stage. In addition, although further stages may bring more freedom, there are also more chances to abuse it, so they require greater responsibility. Life is not easier at further stages. People face different challenges, that is all.

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[1] These stages can be generally related to the domains distinguished in existentialism: *Umwelt, Mitwet, Eigenwelt* and *Überwelt* (Binswanger, 1946, Boss, 1963, Deurzen-Smith, 1984) and also to Wade's notetic model (1996): Reactive (1); Naïve and Egocentric (the transition between 1 and 2); Conformist (2); Achievement and Affiliative (between 2 and 3); Authentic (3); Transcendent and Unity (4).

Development of the rings

Horizontal development is concerned with information and knowledge that enable the formation of the rings (see page 162)[1].

The first ring starts taking shape possibly even before birth and consists of the two processes: synthesising the body image and the world image, and separating these two. The latter one derives from a discrepancy between the perceived continuity of one's body and discontinuity of external reality (e.g. people 'disappear' when they walk away) and a discrepancy between what can be directly controlled and what cannot. So, the infant starts perceiving the world as a whole, and at the same time, shimself separated from the world (which often causes anxiety). This differentiation happens gradually. At the beginning, the external is internalised, a child is in a unity with the world, but not fully conscious. As animals, infants do not know that the external world, as something outside their experiences, exists. Dreaming and reality are the same (in other words, everything is like a dream). This is why a newborn feels omnipotent; s/he is like a god in shis own world. Before the formation of the other rings there is only the present, the abilities of temporal (the past and the future) and non-temporal (abstract) thinking are not yet developed. The practical (kinaesthetic) learning mode, in conjunction with the environmental feedback, is dominant. Language is limited to simple signifiers representing single objects ('mama', 'doggy'). Usually, the first ring is formed around age two, but it can continue to change and grow throughout the life-span (in terms of quantitative development).

The second ring - the most important factor for its formation is the language acquisition. This ring is not based only on precepts but also concepts, which leads to further separation, expansion and greater freedom. Animals do not have this ring, so they cannot manipulate cognitive elements available to them. Conceptual thinking is a huge step in organising mental constructs (it allows, for instance, generalisation: the word 'chair' can refer to any imagined or perceived chair). The theoretical learning mode, in conjunction with social feedback, dominates. The term 'theoretical' is used in a broad sense that may include, for example, stories or myths since they do not have a direct practical value. This mode is mental and indirect (because it mainly comes through others). The second ring is normally formed by puberty although, as in the previous case, it can carry on developing even later.

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[1] Although there are some differences, the first three stages of this development can be compared with Piaget's stages of cognitive development (preoperational thinking; concrete-operational thinking; formal-operational thinking), and also, all four, with Fowler's stages of faith: intuitive-projective (1); mythic-literal (between 1 and 2); synthetic-conventional (2); individuative-reflective (3); universalising (4).

The third ring typically starts forming around puberty or early adolescence. Usually at that time young people begin to seek the answer to the question 'Who am I?'. This is not to say that self-identity does not exist before adolescence. However, the various concepts of 'I' that have existed up until this point begin to coalesce into the kind of person one is and will become (Lloyed *at al,* 1990, p.723). The fluid personality of the child gives way to the firmer, more stable personality - ego. When ego is fully formed, one can 'separate the self cognitively from embeddedness in the social system' (Wade, 1996, p.135), which leads to greater independence. The methods that contribute to the formation of this ring are *reflection and self-reflection*: examining and often reorganising beliefs about the world and oneself. They are the result of an ability to separate, distance oneself from the world and the I (a past, present, future or imagined I). All the rings are formed through relations (in the case of the first ring to the physical world, and in case of the second to the social world or culture). A relation, however, also requires a distance (there can be no relation without some distance) - in this case from oneself. So, self-reflection derives, as it were, from the interaction between the person and shis 'I' that serves as a kind of mirror. Reflection and self-reflection enable not only objectifying and observing the elements of the mind, but also their deliberate restructuring, which increases choice. So, these processes contribute to the formation of the third ring by transforming the materials from the first two rings as well as by producing new ones. This is not to say that the third ring disposes of the previous ones, even if some of their elements may be abandoned. For example, the person at this stage may not believe in Santa Claus any more, but the idea of Santa Claus is still comprehensible to shim.

The fourth ring can start forming in late adolescence, which explains the tendency of that age group to discuss 'deep' issues. However, this process is in most cases quickly abandoned as impractical (usually reduced to conversations after a few glasses of wine and rarely considered seriously next morning). Such an attitude is to be expected, taking into account that, parallel to reflection at the third stage, the fourth ring relies on the intuitive learning mode and resonance recognition, so it lacks the relative solidity of the previous rings. It is mostly concerned with abstractions, processes and relations, and consists of general ideas, universal principles, or issues related to meaning. Everyday language is not always adequate to fully express and anchor these ideas. Moreover, this ring usually transcends divisions between various approaches and disciplines (i.e. science, philosophy and spirituality) and moves beyond ideological constrains. Not surprisingly, a person who operates from such a position is often seen as impractical or subversive of the existing structures. This may bring about a degree of social isolation, which is why it is difficult to sustain it.

Development of experience

The 'in depth' dimension involves the modes of experience[1].

The physical mode is a result of the interaction between the body and the physical environment. In other words, it is bound to the physical-ness of human existence. This mode starts possibly even in the pre-natal period and dominates early life. It can be associated with the range of physiological sensations, such as physical pain, hunger, thirst, sexual arousal, and those related to physical activity (vigour, tiredness etc.). The feeling of physical security (or its lack) can be included in this mode too.

The conventional mode derives mainly from a sense of belonging, being a part of a group or culture, and goes beyond physical experiences. It is especially prominent in ritualised situations such as religious ceremonies, weddings, or even sport events. However, this mode can also involve less situation-specific feelings, for instance fear and hatred (of those who are perceived to be different) or, on the other side of the spectrum, empathy, sympathy or care, especially for the members of one's group (e.g. one's family, culture, nationality or religion). Shame is also in this category - unlike guilt, shame is learned, socially induced.

The personal mode can be associated with personal depth (that may be triggered by external stimuli such as a book or music). It is possible to claim that every experience is personal. However, the distinctive characteristic of this mode is the element of absorption. For example, one may be in a crowd at a concert, and yet sink inside oneself – relating to the music, but excluding the crowd. Another example is a meaningful sexual experience. It involves a personal, unique relationship with the other, but it also excludes (at least momentarily) the rest of the world. 'Flow' (absorption in a usually solitary activity) can also be representative of such an experience. On the other side, so-called 'existential anxiety' (the consequence of recognising uncertainty as a life condition) is another typical feeling of this mode.

The transcendent mode transcends not only the physical boundaries but also the socially induced and ego boundaries, which is why an element of infinity may be present. One clarification is needed though. The transcendent mode is different from transpersonal experiences that can happen at any stage and

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[1] This dimension has been largely neglected in psychology possibly because it is more fuzzy than the other ones. The closest parallel to its four modes are Maslow's motivational levels: physiological needs and safety (1); belongingness and love (2); esteem (the transition between 2 and 3); self-actualisation (3); and transcendence (only included in his model later) (4).

are usually interpreted within the framework of that stage (e.g. the experience of a unity with the nature[1]). Such experiences can be induced, for example, by psychotropic drugs, while the transcendent mode cannot. They happen sporadically, often accidentally, are short lived, and 'cannot be counted as a part of the modal repertoire' (Donaldson, 1992 p.235). The transcendent mode is more stable, and transpersonal experiences in this mode merge with other ones. To use Maslow's terminology, it is closer to a 'plateau experience' than 'peak experiences'. It may involve, for instance, transcending petty concerns, non-attachment, the sense of a larger perspective, and also the sense of connectedness, non-possessive love, or recognising beauty beyond personal inclinations, and it does not necessarily need to have a spiritual source[2]. So-called 'existential joy' that transcends existential anxiety (a characteristic of the previous mode) also belongs to this category (see Popovic, 2003). Its most important quality though, is starting to experience reality in terms of processes rather than discrete objects. Reality is perceived in a less segmented way: 'Spatial boundaries no longer appear stable but open and plastic, suggesting the permeability of permanent objects' (Wade, 1996, p.181). It is only natural that such a mode of experiencing leads to greater fluidity, decreased attachment to objects and, at the same time, the perception of an interrelatedness between them.

It should be emphasised that the above categories refer to the different modes of experiencing rather than the specific types of experience. The further modes are, in fact, inclusive in terms of the sources (or types) of experience. In other words, any event that can be experienced in early modes can also be experienced (albeit differently) in further ones, but certain experiences may be exclusive only to further modes. Eating may be an example. Food consumption can be a purely physical experience, when the focus is on the nutritional value, satisfying the need to eat; for the second mode a cultural embodiment is also important (e.g. a particular setting or type of food, the use of a knife and fork or chopsticks); the third would emphasise personal taste, and the fourth can perhaps best be described as mindful eating (after a form of meditation known in the West as 'mindfulness'). On the other hand, it is hard, for example, to derive any meaningful experience from reading Joyce's 'Ulysses' if in the first or second mode.

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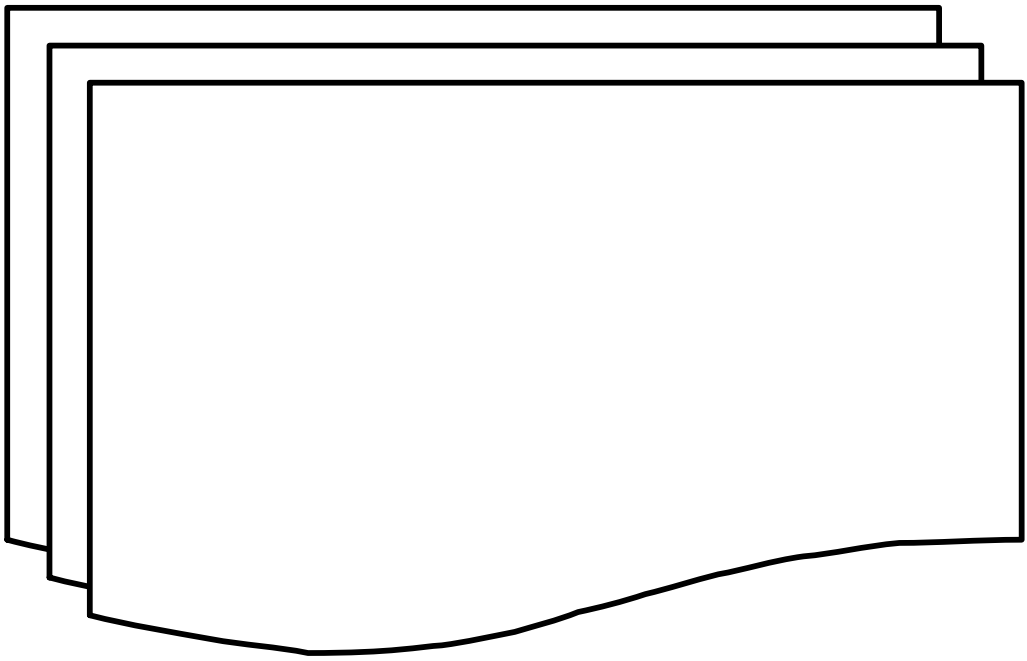
[1] Such a perceived unity is likely to be the result of a *temporary* expansion beyond the rings.

[2] Peak experiences too do not need to be linked to the spiritual. 'Transcendent ecstasy' can be triggered, for example, by intellectual activity, such as solving a mathematical problem (see Donaldson, 1992, p.305).



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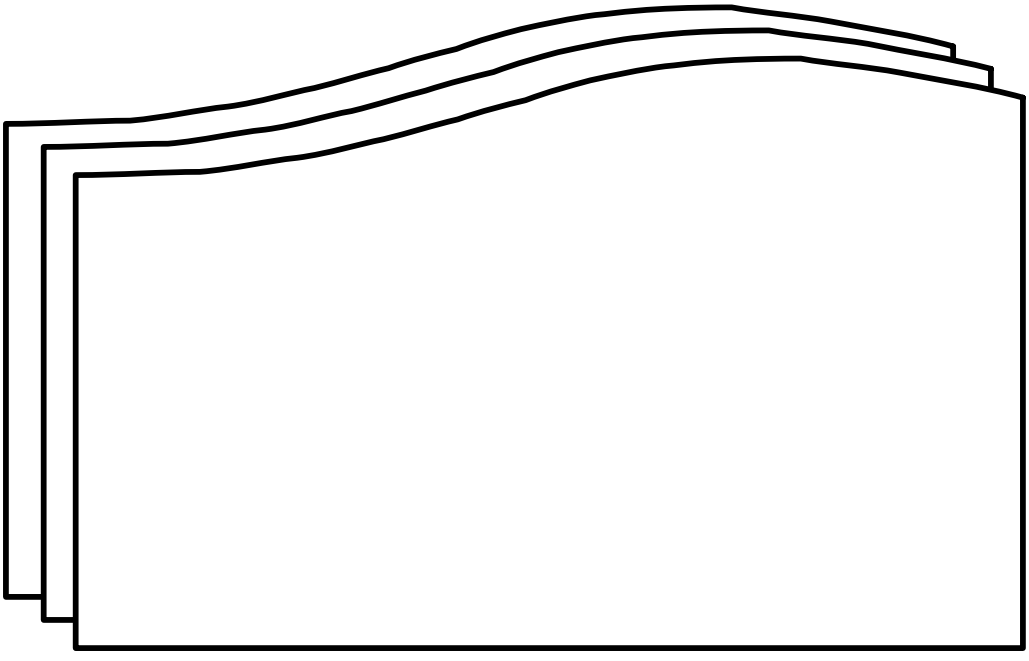

AFTER DEATH

The Method

All four methods described in chapter five (phenomenological, inductive-deductive, transpersonal and reasoning) can contribute to this subject, but each of them is understandably somewhat limited, so combining them is essential in this case:

- Relevant materials from various traditions (the *Tibetan Book of Death* arguably still being the most authoritative one). Phenomenological method can help in separating the essence from its cultural embodiments. Discerning commonalities from different backgrounds may also be facilitative, although they could stem from cross-cultural fertilisation, rather than genuine similarities in experience[1].
- Research on Near Death Experiences (NDE). This source, however, can account only for the first stages of life after death and relies on untrained subjects (although some aspects of their reports can be verified).
- Transpersonal insights are essential, but they can be easily misinterpreted (e.g. they may relate to something else, rather than life after death).
- Reasoning is limited in its generating role, although some deductive inferences can be drawn to make an account complete. This method can also exclude elements that are inconsistent, incongruent with the available facts, and superfluous.

Death

Death has several purposes. It enables evolution, the emergence of more complex physical forms - without death the planet would soon be populated by primitive organisms and new ones would have no chance to appear. It is also an act of mercy on the biological level. The suffering of trapped, old, sick or injured animals would be indefinitely prolonged if there was no death. Death may also contribute to the individual development. Errors and mistakes of body and mind may accumulate during a life time to such an extent that is difficult to reverse them. Reincarnation (that will be discussed below) could offer a fresh start and still enable continuity, but reincarnation is impossible without death. Social development benefits from death too. If generations did not change, the societies would be far more conservative, solidified in their beliefs and practices.

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[1] For instance, in Ancient Greece, Empedocles and Plato adopted the idea of reincarnation from the Pythagoreans, and Pythagoras himself had probably learned of it from his contacts with India.

Death is better considered a process rather than a point, and can be defined as the irreversible cessation of body functioning. However, this does not mean necessarily the end of life. Being an attribute of focused energy, life cannot cease to exist (as long as it remains focused), it can only be transformed. From this perspective, it is plausible that the soul continues its existence after death. Empirical support for the claim that an aspect of the human being remains alive after the body stops functioning is provided by research on NDEs (e.g. the work of professor Peter Fenwick in the UK). Because it is very difficult to locate the precise time of their occurrence, it is sometimes claimed that such experiences, in fact, happen before or after the period of brain inactivity, and therefore are a product of the brain. However, in several cases it was confirmed that they took place while the brain was not showing any activity. There are a number of other attempts to explain these experiences from the materialistic perspective, but none of them seem fully satisfactory[1].

A more contentious issue is what remains after death. Generally, there is a consensus that the body must return to its natural entropic state[2]. However, a dualistic perspective, that identifies the soul with the mind, entertains the possibility that the mind can be preserved in its entirety (including all the memories, for example). There are several objections to this view: firstly it is unlikely that the mind can be fully preserved, considering the extent to which it depends on the brain. Secondly, many materials of the mind are domain-specific so it would be pointless to preserve them when the environment changes (e.g. what would be the purpose of knowing traffic signs in non-material reality?). The Synthesis perspective takes a view that the mind gradually disintegrates, but the non-material component of an organism (the soul) remains. When the body ceases to produce oscillations that resonate with the soul, the soul separates from it. The aura also slowly breaks down. If the resonance is what connects the soul and the body, full separation may not occur even when the brain stops functioning, which is why people can 'return' after having an NDE.

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[1] For their more detailed analyses see for example Blackmore, 2005b, and Wade, 1996, chapter 12.

[2] It is occasionally believed that even the body can be maintained in non-material reality but this is out of question. A body consists of atoms that are kept together by nuclear and electro-magnetic forces. If these forces do not apply, anything physical would be highly unstable - atoms would break up into energy, which would be the equivalent of a nuclear explosion. On the other hand, if that realm allows these forces, it could not be much different from material reality and should be susceptible to the effects of entropy (further deterioration). This point is brought up only to eliminate some unrealistic NDE claims.

The Intermediate Stage

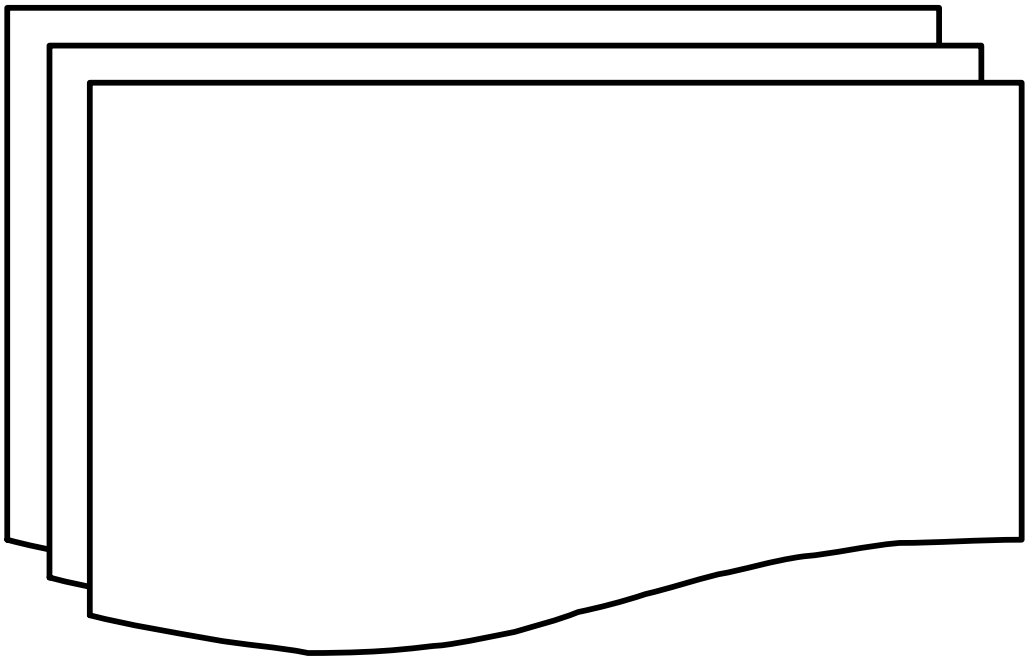
NDEs can shed some light on that twilight zone between physical and non-physical life. There are several common elements of such experiences (largely independent of culture, age, education, or religious affiliation) that are worth considering.

• An OBE is, as a rule, a prelude to a NDE. Subjects report that they perceived the situation from a different point of view than where their bodies were, and were able to describe resuscitation procedures in detail (although they appeared unconscious and their eyes were shut). However, considering that an OBE can happen in other circumstances, these experiences do not say much about life after death, except adding to the argument that the body and mind cannot be identified.

• Going through a tunnel or other passage with a bright light at the end is also commonly reported. Researchers do not provide an explanation of what this 'tunnel' may be and whether it relates to something real (except misguided ones, such as that it is the memory of passing through the birth canal). One possibility is that the awareness shifts towards the other opening of the soul (towards non-material reality), but that would mean leaving the rings behind, which does not seem to fit well with the description of such experiences. Individuals sometimes tend to meet relatives and religious figures, which indicates a projection. Therefore, the rings must be involved, we do not lose our constructs immediately after death. A more plausible explanation could be that the soul goes through a tunnel that the rings themselves create. The purpose of it is to be able to maintain the rings in non-material reality. In other words, to minimise confusion and preserve one's own identity without the support of physical reality, dividing the two worlds is required. Such a separation is constructed as going through a tunnel or a corridor, and just as frequently, as crossing a river or a bridge.

• Subjects often report that their lives passed in front of their eyes. The freeing of the soul from the body may cause energy shifts, so suppressed experiences can resurface. They can trigger such a swift succession of images that they cannot be distorted (as they are in dreams) and, therefore, resemble real memories. It is sometimes claimed that the whole life is repeated, but this is likely to be a result of later interpretations.

• Acceptance of death and the sense of calm and purpose that can remain well after an experience and profoundly change the outlook on life of those who had them. These are non-interpretative phenomenological experiences that can be taken seriously. They make a difference between NDEs and pathological states that are sometimes invoked to explain NDEs. It is worth mentioning though, that even after an accident or serious illness that does not involve NDE people can have an enhanced sense of well-being and contentment. However, it is usually short lived and not accompanied by calm and acceptance or death as in the previous case.



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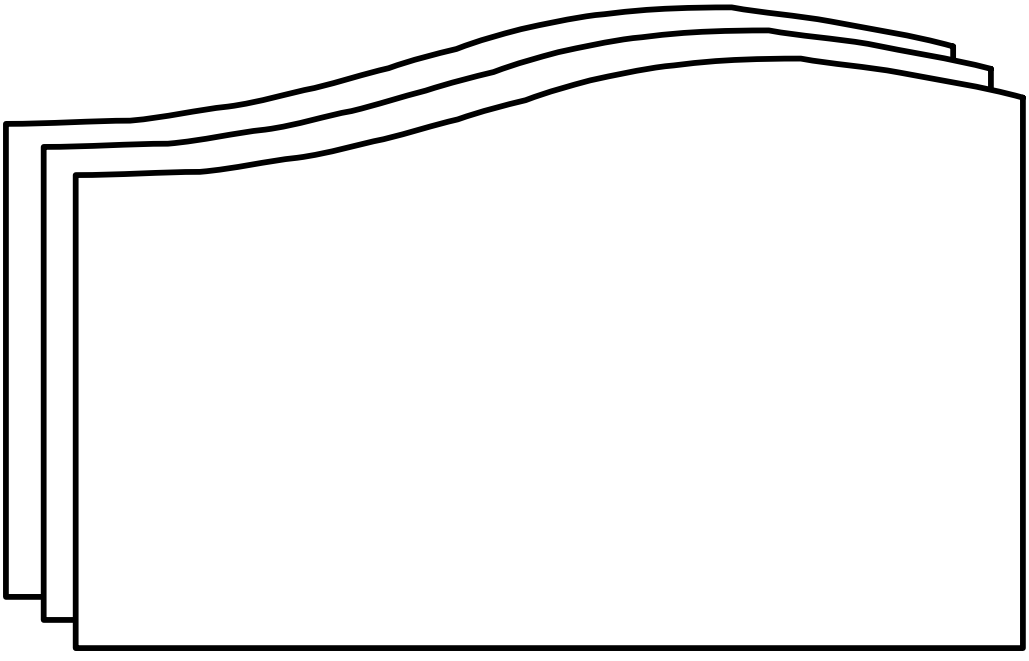

THE INTERACTION WITH OTHERS

Besides the individual function, the mind also has a social function: it enables separation between souls, but also re-connection through an exchange of structured energy (no mind exists in isolation, but interacts with other minds). So, the others matter in every domain of material life, for both existence and agency:

1. In the *physical domain* others are important to maintain and perpetuate physical existence (cooperation, reproduction). Clearly, agency is dominant here, although others, of course, have a role regarding existence too (e.g. protection and help).
2. In the *public domain* others are important to create, maintain and confirm the image of the world and our own image through the process of socialisation. This is not to say that perception of reality is the product of a consensus. It does relate to something real, and cultural differences are not completely arbitrary variations. Shared reality is based on a similar range of sensory inputs and experiences, common language, etc. Existence dominates here, although agency also plays a role (e.g. creative expressions within the established paradigms through art, mythology, religion, literature etc.).
3. In the *personal domain* others are important to stimulate, to initiate energy shifts. A direct exchange of energy hardly ever occurs. Normally, energy first passes through the heavier filters, the body and mind. The rings act as shields, so others are rarely the cause of a shift, but they can be a trigger for the restructuring of existing energy (through our reactions). So, to what extent and what shift will happen, mainly depends on the person shimself, not on others (e.g. they do not upset us, upsetness is our chosen reaction that has become habituated). Obviously, agency dominates here again, although others may also serve as a mirror, to confirm one's existence.
4. Regarding the *transcendent domain* there is now mounting evidence supporting the commonly accepted wisdom that individuals and even whole groups can resonate, producing measurable effects at the time of heightened attention (see, for example, McTaggart, 2001, p.197-214)[1]. Expressions, such as 'being on the same wave-length' or 'feeling in tune' may be more than just metaphors. All this can have harmonising effects, linking the interaction in this domain to existence. However, in what way and to what extent agency can be affected is unclear. If there is any effect, it must be subtle so that freedom of choice can still be preserved.

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[1] This should not be confused with a collective consciousness. That individual wave patterns may converge does not means that they create a new consciousness.

LOVE

There is one type of interaction that deserves special attention. The meaning of life cannot be just a theoretical concept, there must be an empirical equivalent at any level, including the level of human life. Otherwise, the suggested meaning is unlikely to be more than just a construct. It seems that such an equivalent does indeed exist. Love has an intrinsic sense of meaningfulness and infinity, which is why it is experienced as special.

Love is a very broad term regarding its typology and what it refers to (e.g. passionate love v. compassionate love; eros, philia, agape; caring love for children and elderly; not to mention some banal use of the term in everyday language, such as love for a particular type of food or activity). It would not be possible and necessary to address all these meanings here. The term is used in a much narrower sense, signifying a freely chosen intimate relationship between equal partners. It excludes infatuation (eros, passionate love), and agape (universal love or love of God) and is closest to philia or compassionate love (that should not be identified with friendship, to which it is sometimes inaccurately reduced).

If love is a reflection of the meaning of life, it is not surprising that the intimate relationships (which do not need to be restricted to only two people) is arguably the most complex phenomenon regarding human interactions. A good intimate relationship consists of an interplay between a tendency towards unity (which is also, on a larger scale, a prerequisite to the formation of the Other) and a tendency towards preserving separateness (enacting the separateness between the One and the Other). Although these two are intertwined, the former is what is prominent throughout the process of an intimate relationship (as well as through the process of achieving the final goal), while the latter acts as a corrective mechanism. So, the uniting will be taken as the dominant part, while the separateness can be considered (for the sake of simplicity) its 'shadow'.

Love has the same function in every domain: the bonding of the bodies in the physical domain; the socially constructed bonding (a ritualised unity such as marriage) in the public domain; the bonding of the egos (and the ensuing personal attachment) in the personal domain; and finally the bonding of the souls in the transcendent domain[1]. The last one goes beyond the body and mind, so it can indeed transcend illness (mental or physical), old age or death. Therefore, so-called eternal love is indeed possible (providing that those involved can survive in the after-death environment).

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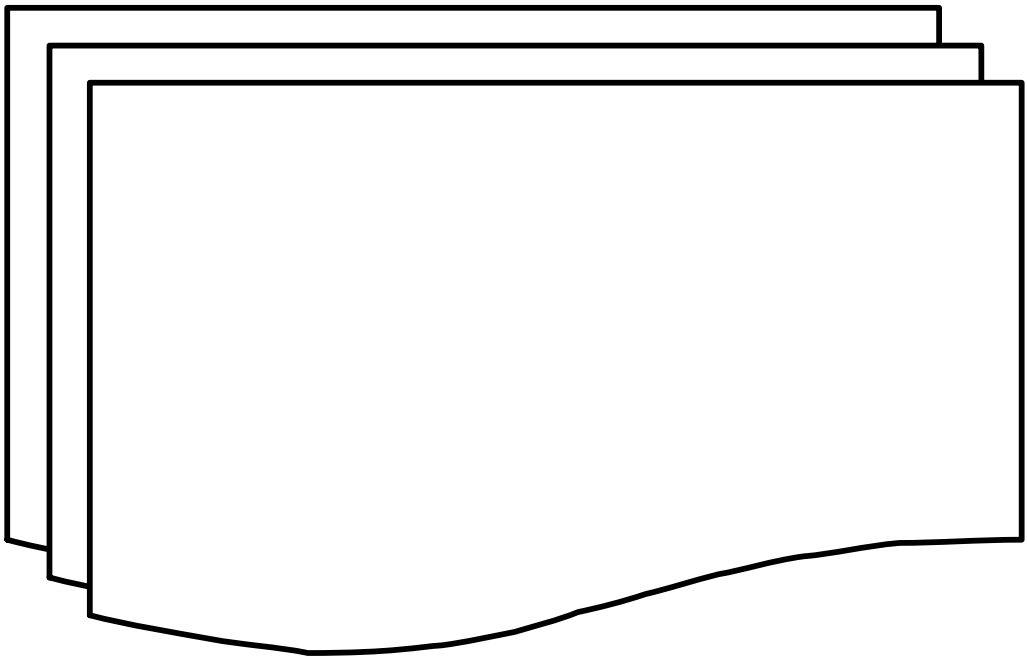
[1] The other side, separateness, is also present in every domain: unbridgeable separateness of the bodies in the physical domain, divisions of social roles in the public domain, preserving autonomy in the personal domain, and independent selves in the transcendent domain.



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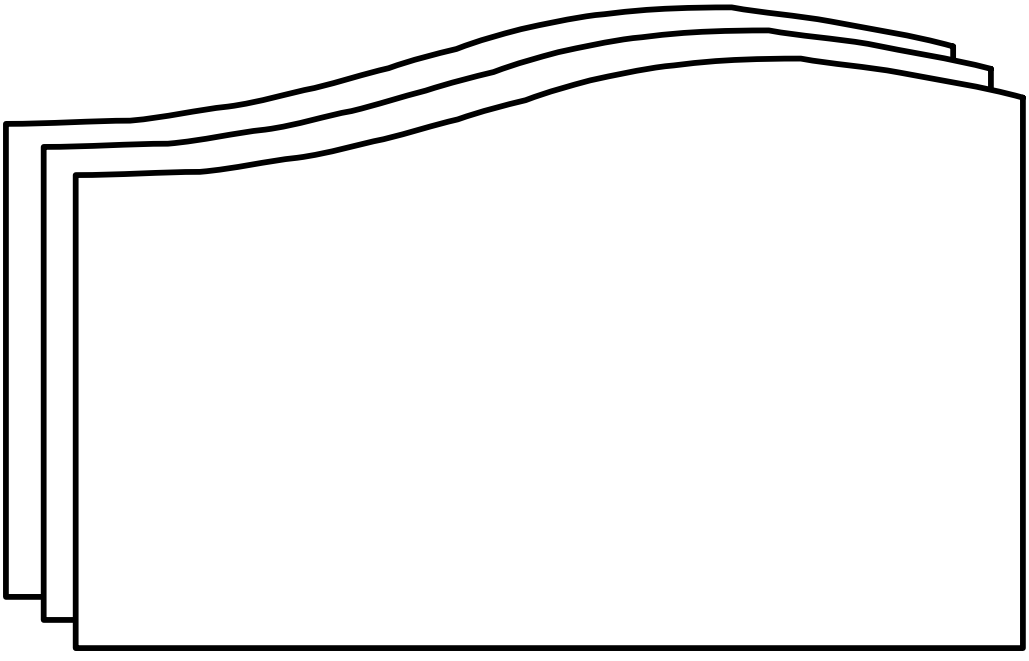

SOCIAL DEVELOPMENT

Reducing social development to utilitarian purposes (e.g. maximising the chances of self-preservation or the transmission of genes) cannot account for the ubiquity of practices such as art, spirituality, philosophy and theoretical science (in its pre-application form). They play an important part in human life and yet largely do not contribute to, or at least are not primarily motivated by these ends. Human beings have an intrinsic urge to develop, and that urge is reflected in the development of human societies too.

The very term social development though, is abandoned nowadays in favour of social change because the former is associated with progress and there is a widespread opinion (in line with the dominant views at present, such as Neo-Darwinism) that there is no such thing as progress. The reasons for this, however, are not only ideological. There is a real difficulty to determine the criteria of progress (e.g. science taking over religion is progress for some, but not for others). What indicates progress from this perspective is a greater opportunity to increase overall awareness and freedom. Yet, even if this is accepted, there are other grounds to doubt progress: the destruction of fellow human beings and of the environment happened on an unprecedented scale during the 20th century. Fascism, Stalinism and the Khmer Rouge, the butcheries in Vietnam, the Balkans, or Rwanda, the damage to the ozone layer and the greenhouse effect are only some prominent examples. These distortions though, should not undermine a general positive trend. It was new freedom (accompanied with recklessness, arrogance and, to use Fromm's term, the *fear of freedom*) that arguably led to them. To make an analogy, although many engage in destructive and self-destructive activities in the period of adolescence, it is still recognised as a step of individual development. Indeed, the signs of maturation seem to be present in every aspect of life. Technology and science are self-evident. Developments in other areas of life may be less so, but they are still present; granted, not in every part of the world, but further than ever in some. Their indicators (relative to previous periods) are a greater egalitarianism, equality of genders and the protection of children; more widespread education and a decrease in superstition; greater freedom of speech and artistic expression; increased sophistication in spiritual awareness and philosophy (it is unlikely that Plato would pass a PhD exam these days with his writings). These achievements should not be undermined. They have been possible because knowledge, experience and constructive actions tend to accumulate. Of course, there are still many problems and serious mistakes are made, but they do not invalidate the whole idea of development. When society

becomes more complex, it is expected to have more problems. Integral thinker Ken Wilber points out that, 'as society adds levels of depth, there are more things that can go wrong at every stage' (in Horgan, 2003, p.63). It is undeniable that regressive and destructive actions are far from being eradicated. However, in the past, some of them, including ownership of other human beings, killing for entertainment, torture of 'heretics', pillage and rape in wars, or subjugation of women were *institutionalised* throughout the world. Legitimised slavery, gladiator games, or the Inquisition are unthinkable nowadays more or less anywhere[1].

QUANTITATIVE DEVELOPMENT

Quantitative development may be a result of internal processes but also competition, cooperation or integration with other societies. An increase of the same characteristics that typify individual development in this sense can indicate social development too, although of course, different examples apply: dynamism (mobility, cultural exchange, internal social processes); complexity and differentiation (of knowledge and skills); organisation and integration (of various segments within society); the width of perspective (e.g. taking into account the effects on other societies or the environment); refinement (in art, philosophy, science or spirituality); diversity and versatility (e.g. multicultural coexistence and cooperation); flexibility (e.g. an ability to incorporate or adapt to changes); creativity (e.g. technological and other innovations); internal control (e.g. autonomy, self-governance); productivity (efficiency in utilising resources).

The demise of the native Americans can be an example of how these characteristics can affect the very survival of a society. One such characteristic is increased mobility. When the Europeans arrived in America, the indigenous societies were almost wiped out. Disease was a major factor. The Europeans did not die (at least not in such great numbers) because they were more mobile, so their immune system was more exposed and better adapted to various diseases. Another feature is integration. Upon their arrival, the Spanish were by far outnumbered, were not familiar with the terrain and could not rely on regular supplies. Yet, they managed to conquer the natives, largely because of infighting and disunity. One more characteristic is an increase in complexity (knowledge). In the above example, what also assisted the Spanish was superior war technology. This is not by any means a justification for the conquest and atrocities committed by

[1] Some telling examples related to this point can be found in the chapter 'The moral *Zeitgeist*' (Dawkins, 2006, p.262-272).

the Europeans. It is rather an attempt to understand why it could happen on the first place.

QUALITATIVE DEVELOPMENT

It is proposed that societies develop through stages akin to those of individual development[1]. After all, any society consists of individuals (although, of course, it cannot be reduced to them). This view was popular in the past, but has been abandoned at present not so much because of empirical data (that are open to various interpretations), but mainly because of two concerns: determinism and inequality.

Determinism - until the 20th century the determinism of social development was a popular notion among both, idealists (e.g. Hegel) and materialists (e.g. Marx). In the 20th century, however, the idea that there is a particular trajectory was abandoned. The idealist concept was not acceptable for its teleological overtone (this issue has already been addressed, so it will not be discussed here). The other concern was that such a determinism is incompatible with human freedom. If global social processes were fully determined, this could mean that historical events and consequently individuals themselves are also determined, which does not leave much room for something that can be called free will. However, recognising that there is a particular trajectory of social development (at least up to a point, which will be clarified below) does not imply inevitability of any social event and can be compatible with self-determination. It only means that a society and humankind as a whole sooner or later, in one way or another, can reach a certain point or plateau (that is, if that society or humankind does not perish before). To make an analogy, the fact that every person (who lives long enough) goes through the stage of adolescence does not diminish shis freedom. So, as in quantum physics, a global pattern can be discerned but no single event can be claimed to be pre-determined. The Intent operates in accord with the principle of minimal interference. It only sets the boundaries to the process and is not concerned with immediate outcomes, so in a way, it is even beyond ‘good and evil’ as commonly understood. Siding with the good would be unproductive to developing agency - people would choose to be good because it pays off, which would reduce the whole process to conditioning. Improbable outcomes may occasionally occur, but only if something threatens the boundaries, and this is rare indeed. Therefore, events and individuals are not determined, but social processes and relations between them may be favourable to some events and individuals. In other

[1] This, of course, does not mean that individual and social development can be identified (tables have legs and animals have legs, but this is not to say that they are the same).

words, they allow some potentials to be realised although, of course, in some cases circumstances may also play a role. For example, Napoleon (and Kutuzov, the general who defeated Napoleon in Russia) became prominent not because they were creating history, but because the flow of history at that particular moment allowed them to surface. If they were not there (say, they died before the crucial events) somebody else would take their roles, which could affect particular happenings and their quality, but not the global dynamics. Individuals are important for history, they may speed up or slow down the process, and even change its direction on a local scale, but they are not irreplaceable. This also applies to societies. If one does not take a particular step, another will.

Inequality - there is a reasonable worry (if judging by the past) that the concept of stages could be used to legitimise the claim that some societies are superior. Such a claim is, however, groundless. To make again a parallel with students, a second year student is not a superior human being to a first year student. S/he may even be less intelligent or a worse scholar than the latter (which is not to say that using the term superior could be justified if s/he was not - there is more to being human than intelligence or studentship). The same applies to societies. A stage of development does not make them superior or inferior. In fact, more advanced societies are potentially more destructive, so a further stage only implies a greater responsibility. By the same token, being at an early stage of development does not imply being primitive. There are primitive individuals and groups at every stage, including the stage of transcendence (they can exhibit elitism, rigidity, dogmatism, exertion, lack of humour). Moreover, humankind may be better grounded if there are cultures at all stages (so attempting to force or coerce societies into change is a mistake). Those that have remained at one stage for a long time are likely to have acquired some wisdom that other societies lack. For example, the founder of multiple intelligences theory, Gardner, added spatial intelligence to the list after being impressed with the spatial orientation of some indigenous people.

The above concerns highlight possible dangers if the notion of stages is not correctly understood, but there is no need to 'throw the baby out with the bath water'. These issues are not intrinsically related to this concept, but are rather the consequence of its misinterpretation. To minimise this, a few further clarifications need to be made.

Although the stage a society is at and the average stage of the individuals in that society may coincide, these two cannot be equated. What matters is the dominant social pattern at that moment. Thus, the stage at which a particular group is can, perhaps, say something about the majority or else a powerful or influential minority, but nothing about an individual from that

group, who can be at any stage. In fact, it is likely that within any reasonably large society there are individuals at all stages.
The stages of social development also cannot be associated with stable features, inherent to the group. Evidence clearly shows that such a link does not exist. Using biological (genetic) or geographical factors to determine a stage of development is nothing more than a crude attempt at reductionism. Those who try to connect race or nationality, for example, to development are most likely motivated by a need to simplify and generalise, which only reveals their own limited degree of development. Most people have a brain of sufficient capacity and other potentials to achieve any stage. If there are some minor chemical and structural differences between groups they may, arguably, affect the path of development, but not its stage. The stage depends on individuals and the society as a whole. Any group can progress, stagnate, and regress, even if the physical characteristics associated with a group do not. Of course, some circumstances and living conditions may not be favourable (e.g. not allowing any spare time for self-development), but this is a separate issue.

Stages may provide a platform, an opportunity for progress (that may happen or not), but progress should not, however, be identified with them. It seems that accumulative quantitative development plays a greater role in this respect. For example, while human sacrifices were common in the past throughout the world, nowadays they are extinct in all societies, at any stage.

The stages of social development are described below from a historical perspective (which is not to say that all societies nowadays are at the same stage). Each stage has its cross-cultural characteristics in every area of social life (religion, social and economic organisation, art, the interpretation of time, personality constructs etc.). The emphasis in the text will be on religion though, since it has less exceptions and is clearer in this respect than other areas (possibly because religion usually has a strong grip on society and affects other areas). It should be pointed out, however, that religions do not form, but provide a framework for the stages. They are taken as an example of social organisation that structures dominant processes. In any case, what follows is no more than an outline. Its only purpose is to illustrate a broad tendency, and is by no means an attempt to provide even a remotely comprehensive account of historical processes. It would be easy to find many aberrations and exceptions, but they should not cloud the view of an overall trend emerging from history.

The physical stage

This stage could also be called 'pre-historical' because there are no written records, and it was by far the longest period of human history (archaeologists are saying that the first modern humans appeared about 160 000 years ago). It consisted of 'hunter-gatherer' communities, usually organised in relatively small groups (tribes) with a low level of hierarchical differentiation. Such a society was in a relative unity with the environment, but instinctively rather than consciously (this state 'before the fall' was encapsulated in the story of Eden and other similar myths). The separation between the subject and the object only gradually occurred. Personality was not valued – a common use of masks indicates that an individual only represented something. Physical determinants (including the physical environment) and the first ring were dominant. The writer J. N. Sansonese notes that 'the more ancient the myth, the more often do parts of the human body play an explicit role in the myth' (1994, p.7).

In religion, elements of the physical world were worshiped: celestial objects (the Sun, Moon), the natural forces, as well as animals and plants that often had supernatural powers. In other words, nature was subjectivised. Deities were immanent (they became transcendent only later on). Rituals were based on the physical and instinctual (e.g. trance induced by rhythmic and repetitive sound and movement, or by the use of psychotropic drugs). The after-death life was inextricably fused with physical reality. Magic was a dominant way to control and learn about the world (through sorcerers or directly).

An abstract notion of time did not exist, significant events were used as a reference point instead. It is likely that art had a practical (magical) function. As any other stage, this one also had its dark side (e.g. body mutilation). However, its value should be recognised and respected. A lack of further rings can be facilitative to intuitive insights. Although there are no written records, the notions of the One, the Intent, reincarnation and the soul (atman) seem to be rooted, in a rudimentary form, in this period. Some societies have remained at this stage, either because their physical survival has been too demanding, or they have been isolated, or did not want to go further (e.g. because they have been well integrated with their environment). Nevertheless, they have contributed to many areas of modern life: education, medicine, art (music, painting), alternative life style (hippy communes), psychology (e.g. the effects of psychotropic plants), spirituality, anthropological understanding. This is not to say that this stage should be idealised. Even at present, there is a huge diversity between the groups within it (as a renowned anthropologist Margaret Mead made clear), of which some may be primitive and some may not.

The transition period between the physical and conventional stages[1]

Social development had already greatly escalated in this period. Its outset can be linked to the appearance of horticultural farming. Horticulture started as simple gardening, supplementary to hunting and gathering. It used relatively crude technology and was less efficient than agriculture. Nevertheless, this way of production had important social implications.

Establishing permanent settlements became possible. The villages were initially small, some no larger than the temporary ones of hunters and gatherers. However, because the soil would quickly get exhausted, new land had to be found, sometimes at the expense of neighbours, which in more populated regions greatly increased the chances of conflict. Large-scale warfare was not usual though, probably because there was no political or other unifying force that would amass a sufficient number of individuals for such endeavours. Horticulturalists had more material goods than most hunter-gatherers due to the greater stability of their settlements, with the implication that divisions, on the basis of wealth, started to emerge. However, this was a less physically demanding way of production than agriculture, so women were still able to work in the fields alongside men, with a consequence of greater equality between genders. Tracing one's ancestors through the mother's lineage has its root in such societies. Cults of goddesses rather than male dominated pantheons were widespread (this trend continued through the worship of Inanna in Sumer, and Ishtar in Assyria and Babylonia).

Nevertheless, in many respects the religion of horticultural people resembled that of the hunter-gatherers. Shamans, rites of passage, human sacrifices, animism (worship of plants or animals believed to be ancestral to clans or lineages) were common. In time, religions became more and more anthropomorphosised though, deities were often represented in a half human, half animal form (this legacy can be found in as diverse civilisations as the Egyptian and Olmec). Among horticultural peoples with chiefdoms, the chief's remote ancestors, the founders of the lineage, became eventually the most important gods. More recent or less significant ancestors received a lesser status. The result was a hierarchy of gods moving religions in the direction of fully-fledged polytheism.

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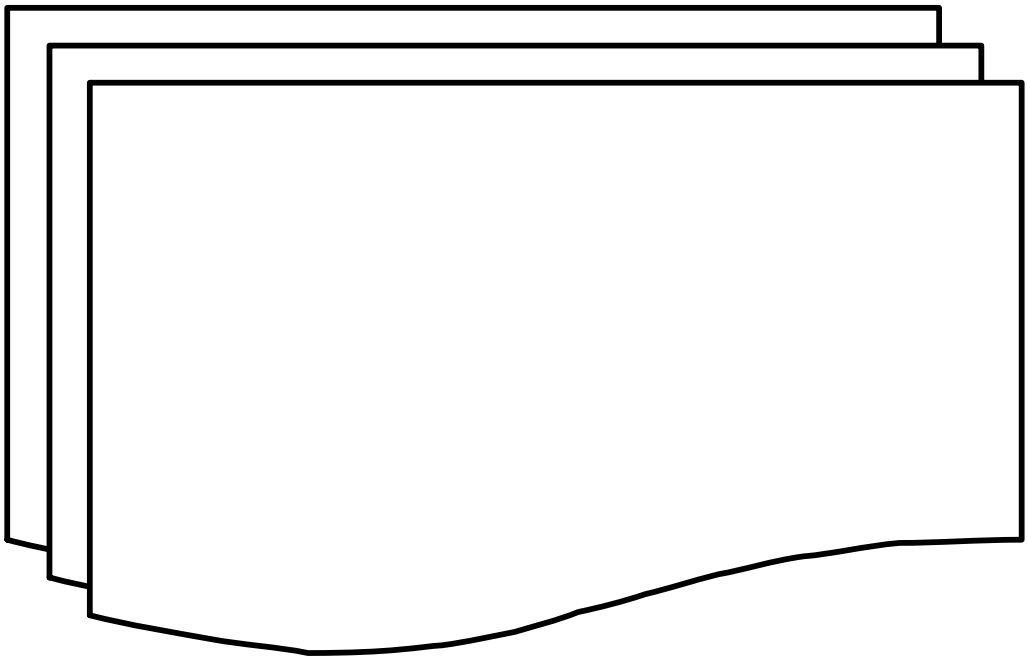
[1] 'Conventional stage' should not be identified with having a society or living in a group. Even animals live in groups and sometimes have a relatively complex social structure, but it does not mean that they are at this stage. Their social life is physically determined and is essentially the same from group to group, while the huge variations of human societies indicate that they are products of more than just adaptation to their environments. They transcend the strictly practical purpose of social organisation.



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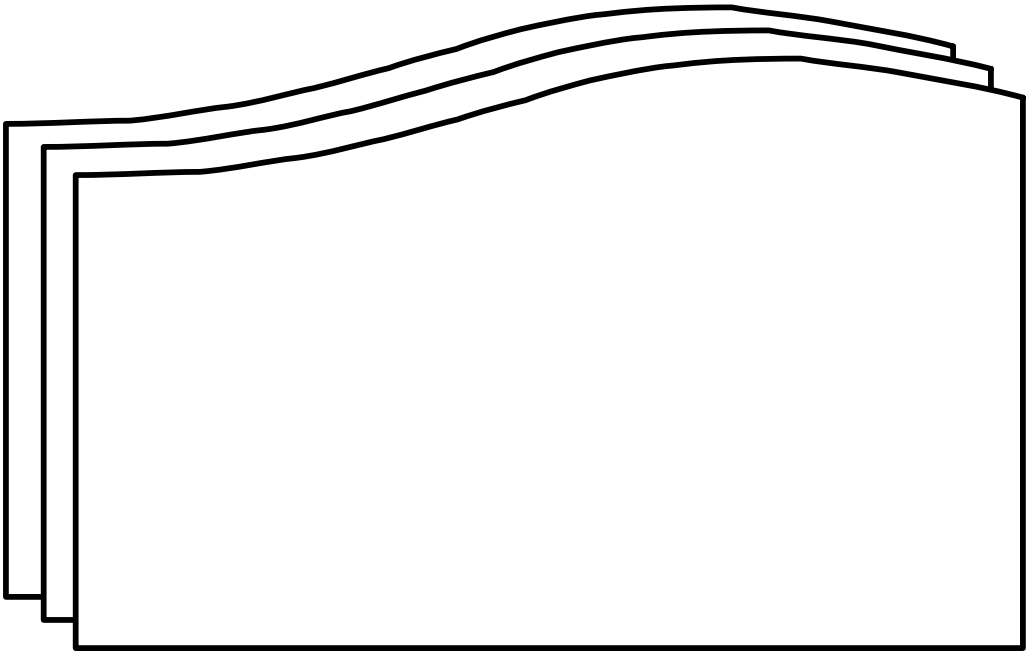

The Futures

One of the purposes of the above brief historical account is to show that human freedom increases throughout this process and consequently does its influence on social development. In the past, physical and social determinants have had a much greater role, therefore the social processes were highly conditioned. However, this trend has been steadily decreasing, to be overtaken by choice. At present we are at the crucial point of the lowest determinism. Human beings are for the first time in a situation where they are able to create their own destiny, which greatly increases responsibility. Although this point was already reached some time ago (roughly around the 1960's) the final choice after which the inertia takes over has not yet been made. This means that the future is truly unpredictable. It is postulated that there are four possible directions[1].

Down: falling back into anachronic social structures, run by a religious or ideological oligarchy. It would be a step backwards that would postpone the real choice for some time, but not indefinitely[2].
Right: moving away from the Intent, which would end in a technocratic autocracy (a nightmarish world, often depicted in futuristic stories and films). This option is likely to eventually lead to destruction, possibly through an environmental disaster or a global war. So, the suffering and efforts of myriad life forms that contributed to our evolution and social development would be in vain. This would be a tragedy of unimaginable proportions, but it is not impossible.
Up: continuing in the same direction would lead to meaningless, apathetic reality, in which entropy would be constantly increasing, ending eventually in chaos and anarchy. This one is unlikely to destroy the world completely, simply because the means of destruction would malfunction too. However, it would result in a slow decline. To reverse this trend, a new conceptual framework (a new start) would be required.
Left: recognising and aligning the individual and social intentions and actions with the universal (discovering, or in the case of humanism, creating a common purpose).

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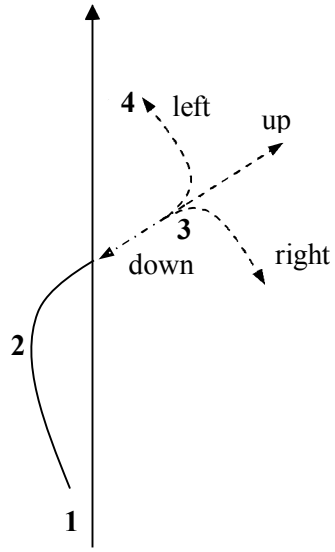
[1] Their names are created as a convenience, and do not have any value or ideological connotation.

[2] Some find returning even further, to a pre-industrial, child-like state, as a way to get rid of consumerist society, attractive. But children are, in fact, easily mesmerised with multi-coloured superstores, junk-food outlets and expensive but worthless toys. Similarly, adults from traditional pre-industrial societies seem to be even more fascinated by flashy cars, golden rings and watches, and other consumer products.

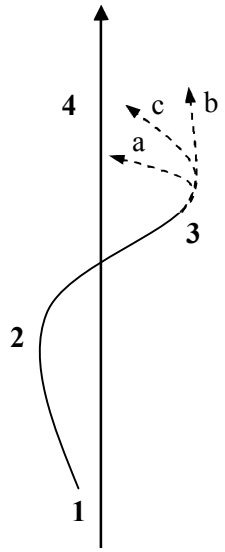
These choices are shown in the following diagram:



It is impossible to predict which of them will prevail. What is certain is that they are all already germinated. The rise of religious fundamentalism, for example, in some parts of the Middle East and the USA indicates the down direction. Extreme materialism that started in the Reagan – Thatcher era, but is now slowly taking roots in newly developed countries, points towards the right; the post-modern secularism (in the liberal parts of the USA, most of continental Europe, Australia etc.) represents the tendency towards the up direction. Some movements, atheistic and theistic, show signs of the shift towards the left. These are a few examples: an increasing number of individuals and organisations (e.g. some NGOs or environmental agencies) dedicated to raise awareness and tackle global issues in politics; the growth of the so-called third sector (charities, 'social enterprises') that are driven by contribution to community rather than profit in the business world; certain aspects of globalisation such as the internet that provides free and decentralised information and a vast knowledge base (regrettably not yet widely available); non-theistic spirituality based on the idea of self-generated systems (popularised, for example, by Laszlo or the Gaia movement); the emergence and fast spreading of grass-root spirituality (not aligned to any specific religious doctrine)[1]. Although this last choice may not prevail, it is the most interesting one, so considering its possibilities may be worthwhile.

[1] For further details, see Forman, 2004

It is proposed that the options on this route may be grouped into three broad categories. This diagram represents the possible trajectories:



a) *Intuitionism* (emphasising experience and often seen as an expression of the feminine principle) is likely to lead to a sharp turn towards the Intent. Its consequence could be approaching the Intent from a somewhat wrong angle, like a boat that tries to enter a river perpendicular to its flow, which would run the risk of being thrown back.
b) *Rationalism* (emphasising reason and usually identified with the masculine principle) is positioned in between the left and up direction and could lead to approaching the Intent very slowly or even moving in parallel to the Intent (because it is likely to be dominated by a non-theistic fourth stage). This direction could solve many practical problems (creating a society akin to a 'Star-trek' type utopia), but the meaning would remain more or less elusive, and the search would continue indefinitely.
c) *The synthesis* of the feminine and masculine principles[1] would facilitate an approach to the Intent from the correct angle and aligning with it. The question may be asked what would happen in such a case. Metaphorically speaking, a bridge will be created, and human beings will not be alone any more.

[1] They are of course not identified with genders. Every person (female or male) has the capacity for both principles, although there may be a preference (or bias) for one of them.

AFTERWARD

This book is based on a method that may provide a more coherent interpretation than the existing ones, but it cannot offer certainty. There are some intrinsic limitations that allow any text to approach the truth only asymptotically. These limitations can be grouped into four categories:
a) The limits of the subject (an author) refer to a finite mental capacity, time and information available to an individual (so some details may be missed or mistaken).
b) The limits of the medium (a language) refer to the fact that no existing language is fully adequate to express the multi-dimensional nature of reality.
c) The limits of the object (facts) refer to the imperfection of the factual knowledge. For example, not taking into account presently accepted facts that may turn out to be mistaken in the future would end up in the current incompleteness, but taking them into account would lead to a future incongruence (when they are corrected).
d) The limits of the background. Any text is created at a particular time, in a particular place and within a particular mentality. Therefore, it is inevitably affected, at least to some extent, by its locality, which may not fully resonate with a different time, space, or mentality.

This does not mean that the epistemological value of the materials can be relativised (in a post-modern fashion). To what extent they approximate the truth should be judged on the basis of to what extent they comply with the criteria described in the first part. It is unlikely that new ways of knowledge acquisition will be discovered, and any reduction to one or some of them cannot be superior to their synthesis (the problem with the existing ideological frameworks, including the materialistic ones, is not so much in what they are saying, but in what they are denying). The above limitations, however, do indicate that no interpretation can be perfect and universal. Moreover, if any interpretation is allowed to solidify and turn into an ideology, it becomes reactionary. Therefore the Synthesis should be taken as a dynamic process that can continue to be refined. There will always be some space for further improvements, the only conditions being that the stated criteria are followed or their change is justified. Therefore, this should not be considered the end, but the beginning.

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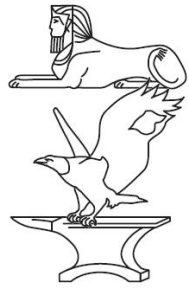

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