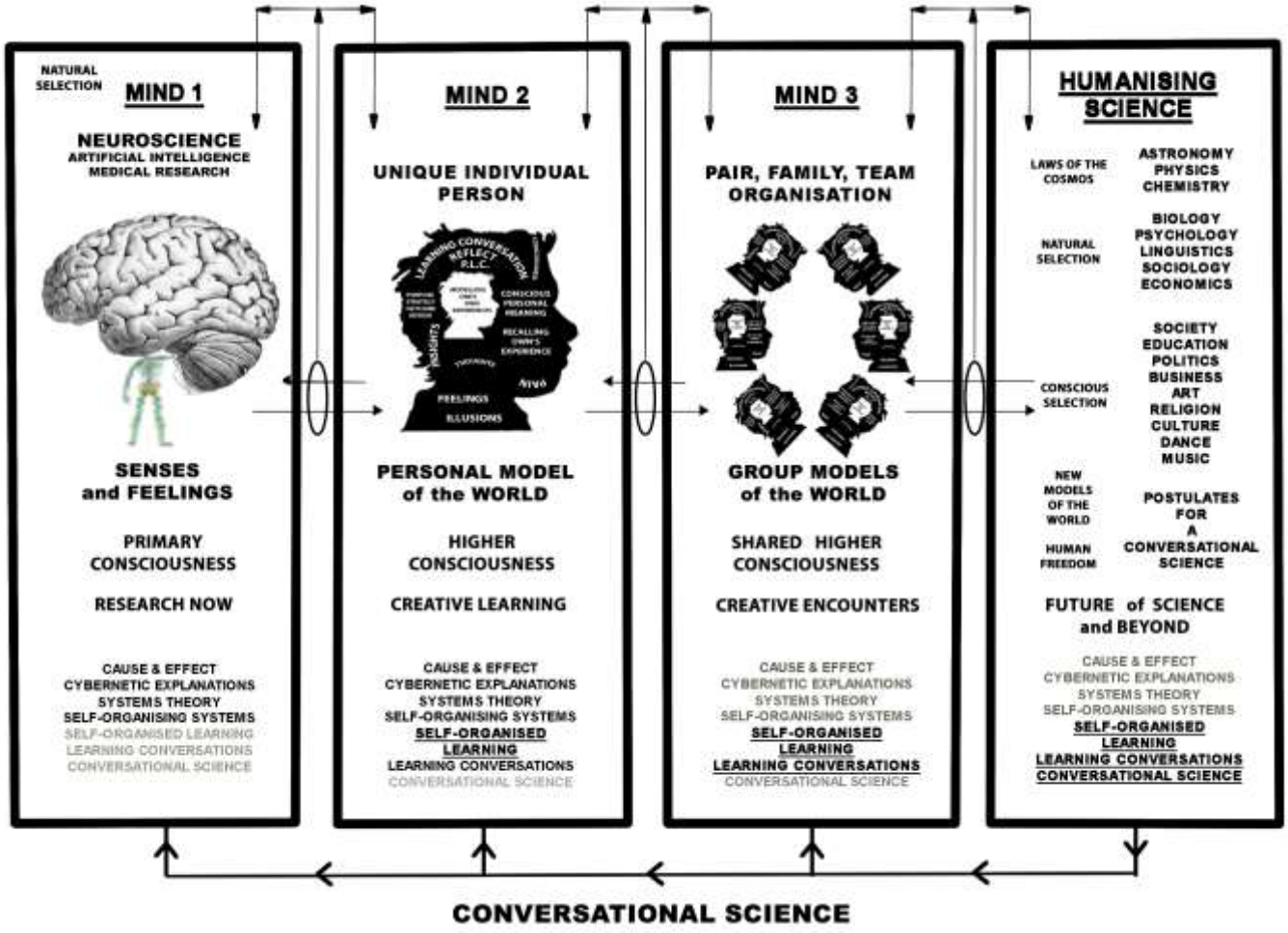
ON BEING:-
IN THREE MINDS:

What the scientific idea of MIND could become, and where that might lead us.

Fig. 1 ON BEING IN THREE MINDS AND ITS CONSEQUENCES



SYNOPSIS

This note explores the three different main uses of the term MIND.

MIND - 1 NEUROSCIENCE: how the term is used when restricted to the brain and the nervous system, including their physiology.

MIND - 2 PSYCHOLOGICAL SCIENCE: how the term is used to study the mental activities and experiences of one whole person.

MIND - 3 SOCIAL SCIENCE: how the term is used to indicate the shared mental activities and products of a group of people working cooperatively together: including the idea of the MIND-POOL.

Each version of MIND is not complete, but is a differently scientific view which potentially can be seen as a partial view of same system. As with all aspects of science, the systems being studied are not complete in themselves. They have two-way communicating

boundaries which are usually only held closed for purposes of investigation. This means that no matter how complete our understanding appears to be, our practical use of scientific knowledge is subject, not only to what surrounds it, but also subject to the degree to which the system becomes more open and self-organising. So the model we have of the "thing being studied", the context we allow for, and the period of time we are concerned with, will all influence the validity of any predictions we make about the consequences of our actions.

The content and the explanations of all types and levels of science not only need to be more effectively linked one with each other, but the uses (and misuses) of "the science" also need to be considered, reviewed and used more conversationally, taking into account the values and the nature of the societies in which they are developed and those in which they are applied. As we learn more in scientific and cultural domains, that which previously seemed unconnected; the understanding, the actions and hence the products of humankind will always, by their very nature, be potentially related and open-ended.

It is open, because we are only humans trying to explain human experience; and because each significant advance in our understanding enables us to become more than we were. However, unfortunately at present, many of the apparent 'advances' turn out to be blind, but often dangerous alleys. The sciences inevitably need to become more conversational; and whilst they are explanatory in their nature, they are always both enabled and restricted by the settings in which they are applied, and by the purposes and nature of the people inventing, constructing, developing and using them.

We suggest a useful sequence of ***seven stages*** in the development of our scientific method. The first four of which are ascribed to science as it is currently practised:-

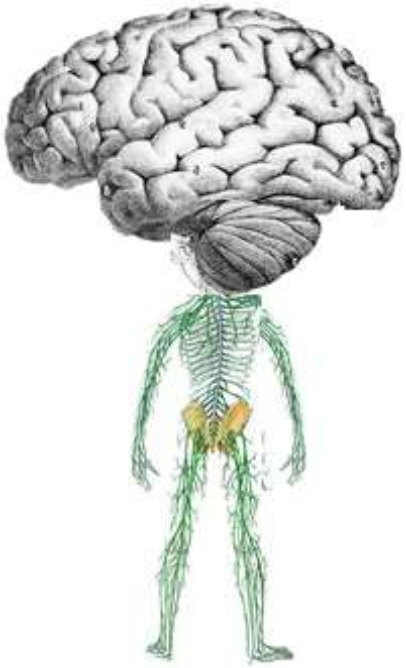
1. **Cause and Effect**
2. **Cybernetic Explanations**
3. **Systems Theory**
4. **Self-Organising Systems**

We then introduce three more, which might help position science more properly within the whole realm of human thought, experience and achievement. These three are:-

5. **Self-Organised Learning**
6. **Learning Conversations**
7. **Conversational Science.**

MIND 1 – NEUROSCIENCE and ARTIFICIAL INTELLIGENCE

The Brain, the Nervous System and their Physiology



Mind-One - It's variously scientific adherents study the brain's structure and functioning, and how this enables it to experience and perform in the wide variety of ways in which human beings know, think, feel and act.

The locations of brain processes can now be studied scientifically by careful use of "cause & effect?" observations that can now be captured electronically and recorded from the outside. These observations when used by MIND-One adherents (e.g. the neuroscientists and the artificial intelligence researchers) attribute the processes of the mind to the co-operation of the parts of the brain one with the other, from the main domains of the brain, down to smaller and smaller sections eventually getting to the structures of individual nerves in their ever changing bio-chemical settings. All of which involves the interaction of myriad cross groupings of possibly billions of nerve cells.

To give meaning to this un-imaginably complex communication system, science has found it useful to move from simple cause and effect explanations to the feed-back and feed-forward descriptive and explanatory processes of cybernetic systems, and the increasingly more complex cybernetic network descriptions and explanations of systems theory (i.e. our first three stages). This has led to the analogy of the brain as a complex computer, with many interesting network demonstrations and explanations. Whilst these throw the light of network theory and computer and robot analogies on some of the brain's activities they often tend to over-simplify the more living processes of the brain which contains blood flow, bio-chemical and more complex physiological processes connecting to the rest of the body. These need the understanding of systems theory and more particularly self-

organising systems theory (i.e. stage 4 in our classification), to appreciate the major differences between living matter and man-made networks.

Consciousness; which is attributed mainly to the frontal lobes/cerebral cortex of the brain, is the term we attribute to the knowing, feeling and experiencing of our own processes. We are also aware that it is through the senses that the brain perceives what is outside of it, both in our body and in our environment. Gerald Edelman has used Qualia to tackle some of these issues.

In particular consciousness gives us the ability to appreciate the mindful consequences of both the nervous network systems and bio-chemical processes which support and sustain it, taking us well beyond the achievements of both physical and wireless networks and all the myriad achievements of electronic design engineers. So it is important to accept that Mind-One is under-estimated when reduced to the circuitry alone no matter how complicated.

MIND 2 - PSYCHOLOGICAL SCIENCE

The Mental Activities and Experience of One Whole Person

Mind-Two - Includes the brain and its consciousness but acknowledges that this is fully and inextricably located in our whole person.
The adherents of Mind-Two (including psychologists, anthropologists and philosophers) have a variety of views about the nature of consciousness. We can each be conscious, not only of our thoughts and feelings, but also using each and all of our senses and hence our complete physicality. But our living experiences, the processes of our learning, and nature of our insights into the structure of our consciousness, will determine that the nature and degree of our consciousness varies from person to person.

Senses, thoughts, feelings, values and purposes combine to form the personal meanings which condition our actions in the world. Potentially this gives us command of our being, our becoming and to how we live and experience our lives. Indeed as our own research has shown, when we attend to ourselves adequately, i.e. when we are enabled to fully use and understand our experiences, we can *self-organise our own learning* and hence become more and more uniquely ourselves. ***We can explore our alternative futures, gradually becoming free of the shackles of our past.***

What we have called "***Learning Conversations***" was for us a hard won radical change in our own methods of scientific investigation. Among our earlier funded research projects (in the 1960's and 70's) were two to investigate what was really going on in learners minds when they are being taught, instructed or trained. One project involved university students and the other involved television assembly line operators as the 'subjects' of our experiments. We started by using a traditional (very well intentioned) scientific methodology which involved us in investigating, and very carefully recording "learners behaviour". We were both dedicated and very "scientific" in developing special equipment for recording exactly what these people were doing when they were learning. Originally we did this so that the 'expert' university staff and the 'expert' TV technical instructors could more accurately teach and instruct our subjects, who were their students or trainees.

Fortunately, having each of us, been the receivers and deliverers of a wide variety of expert instruction ourselves, we very soon became interested, not only in the learners behaviour but also in trying to understand what was going on in our learners heads (minds) whilst they were learning in the ways we had recorded.

We started asking them to describe, step by step, exactly what they were thinking, feeling, understanding and doing as they re-lived through our recordings of their learning activities. To our initial surprise, this had an impact on them which far exceeded our intentions of just collecting psychological evidence.

Their teachers and instructors were also surprised at the results of our experiments. We had, unintentionally, ***stimulated our subjects to investigate their own learning***, and enabled them not only to begin, but also to go on investigating and indeed, improving their own learning, in their own time. Many made startling and enduring improvements in their own performance.

As evidence from our learner-centred research was replicated in many fields of endeavour, we began to explore these findings further. We discovered that, with the appropriate support, almost all of us can learn to understand ourselves much better. Not by being instructed, but by being supported appropriately into an ***ever increasing capacity for self-organised learning***. We began to develop our methodology, which we called ***Learning Conversations***.
This has led us to investigate how this approach can be applied in many fields of human endeavour; Education, Apprenticeships, Engineering and Production, Business, Government and the Armed Forces, Clinical Psychology and Social Work.

It now appears that in pharmaceutical clinical trials the placebo results are not just random, but are encouraging signs that by getting more deeply and appropriately involved some patients are self-organising their own day-to-day health in rather better ways. Not by just doing what the expert tells them, (in this case just taking the pills) although we can often usefully attend to this as one resource, but by listening to, i.e. sensing and coming to understand our own processes; and learning to encourage, enable and regulate these.

This takes Mind-Two into a much wider domain than Mind-One, it includes using one's own experiences to self-organise our own development, including our own ***Self-Organised Learning*** (i.e. our stage 5). It has also led us to develop a variety of reflective tools within a support methodology which we called ***Learning Conversations*** (i.e. stage 6.) , to enhance our capacity for Self-Organised Learning;
This domain has two forms; the first is to do with our individual skills and personal knowing. The second is to fully appreciate, understand and evaluate the knowing and skills of others and their place and value in our shared domain(s). So ***Mind-Two*** is the knowing, feeling and doing parts of the whole person, which not only includes the past experience, feelings, knowledge, creativity and health of that person, but also includes knowing and

understanding how and what they know, how they know it and what it enables them to do. This higher level of consciousness empowers an awareness of the person involved in ***modelling their world and Learning-to-Change.*** They become their own ***personal conversational scientists***, constructing their own theories and testing them and as they act in their world. As with every good scientist they can reflect and revise their theories as these become increasingly significant, relevant and viable. The person becomes a sovereign ***Self-Organised Learner*** capable of constructing their own alternative futures. They have initialised a process of ***Learning Conversations*** with themselves and with others (e.g. stage 6)

So, well-developed Mind-Two individuals can, when they choose, enter into what has been called by Maslow, "Creative Encounters"

This leads us to **Mind-Three**.

To appreciate this progression we have so far considered six stages of scientific method:-

1. **Cause and Effect**
2. **Cybernetic processes (both simply and more complex)**
3. **Systems Thinking and Explanations**
4. **Self-Organising Systems**
5. **Self-Organised Learning Systems**
6. **Learning Conversations**

Now in Mind 3 we can again consider stages 5 & 6 within a social ie, group context.

We shall end with stage 7, offering proposals for a ***Conversational Science***

MIND 3 - SOCIO-SCIENCE

The shared mental activities and products of a group.

Mind-Three - treats the co-operation of two or more individuals as the location of a knowledge and skills 'mind', as in the implication of the term ***"mind pool"*** The more we investigate, explore and attempt to define **Mind-Three**, we discover that it remains open-ended. Be it a scientific group, a jazz band, a football team, an army regiment or the study of a flight of birds: be it the Royal Society, global climate change or the study of a termite mound, new findings constantly emerge.

Each area of group knowing that has proceeded a Mind-Three or will evolve out of them are more properly treated as ongoing and evolving ***reflective Learning Conversations*** among individuals, each participating as **Minds-Two.** **Mind-Three** will enable its members and those associated with them to discuss, argue, disagree, agree and act together with ***awareness and control***. **Mind-Three** can construct a model of their own group activities and evaluate their effectiveness.

The important thing to recognise about a Mind, be it type One, Two or Three, is that its basic activity is Self-Organisation and Self-Organisation always has a **process of conversation** across its boundaries as well as all the interactions between its parts. Indeed each part is itself an ***internal conversation*** which enables and ensures that the conversation across its boundaries preserves its inner-coherence. Most hierarchical organisations can be systematically taken apart into what are usually a set of self-organised systems: right down to the genes. This leads us to need to extend Mind-Two system activities into the Self-Organised System methodology that is required to make sense of group **Self-Organised Learning** and advancing further the methodology of **Learning Conversations** (i.e. **stage 6**).

Mind-Three requires its self-organising system to be sustained into self-organising system explanations which see it's past experience being carefully, but systematically incorporated into the Third-Mind resources, i.e. into Self-Organising a group's experience, including what

and how they choose to learn from each other in their groups. Our **Socio-Nets of shared minds** show areas of agreement and disagreement; and a self-organised learning group can pool their values, thoughts and feelings to achieve a truly creative encounter, achieving a transformation in personal and group insights.

Each **Mind-Three** has no completely well-defined boundaries:

1. As a group of members come and go and the entity expands, stabilises and contracts depending on its activity, its members and its environment.
2. The domain of influence of each and any Mind-Three type group varies (expands and contracts with its membership) depending upon its environment, its activities and the time-span of its existence.
3. Each **Mind-Three** is only usefully and conveniently viewed as totally contained within
    a) A well-defined conversational group.
    b) A well-defined topic domain.
    c) A well-defined periodic re-negotiation of its own existence.
4. Modelling **Mind-Three** processes can lead to truly creative encounters, opening up new horizons of experiences and knowing for each member of the participating group.
5. In our work with **Mind-Three** groups for example with Royal Mail managers, a Zen Training group, TSB Bank manager trainees, the Royal Navy training department for Enemy Intercept Control Officers; Students at the Central School of Art and Design, (Southampton Row, Holborn) and Officers at Scotland Yard, to name a few projects; we have developed a whole system of Learning Conversation techniques which hand the responsibility for self-organised learning back to the learners. For example, we have discovered that if learners de-brief themselves and each other using behaviour recording techniques and meaning eliciting devices within **Personal Learning Contracts**, before attending the expert's evaluation; (i.e. the official debrief) then they learn much more, and attend to the expert view with deeper attention, understanding and much less stress, but still preserving the right to now arrive at their own considered ***personal view*** of their own performance.

THE IMPLICATIONS OF BEING IN THREE MINDS.

The idea of **Mind-One**, **Mind-Two** and **Mind-Three** is useful because:-

It requires a wider range of approaches to scientific investigations if we are to develop a deeper understanding of what, and who we are, as well as an appreciation for what human nature might become. We can learn to better Self-Organise ourselves and empower our capacity to learn as we converse with our world as individuals, as a family, a team, an organisation and as a society as a whole.

Mind-One

Reservations about MIND ONE as currently practiced include:

a) It leads to a misleading relationship between its “artificial intelligence” and its "brain activities" adherents. They often seem to use much the same terms and language structures to describe what are often quite different and often competing scientific ideas about human beings. This happens within Science, Religion and other Forms of Belief about ourselves and the world we all live in.

b) There may be no harm in using the analogies between cybernetic explanations, systems theory and methods to explain and develop more elaborate and effective computers and communication systems: and using cybernetics and systems theory and methods to explore and explain the functions of the brain and the part it plays in understanding the whole living person. There is very clearly a problem in too easily misunderstanding that the underlying ideas depicted by the language used, actually convey different meanings within each type of investigator.

The analogy between brain and computer fails on several counts. The brain is constructed by selection systems that assure diversity. Unlike the computer it has no replicative memory, it is experiential and value driven. It forms categories and constructs meanings by internally generated criteria. Beliefs and concepts are individualised in an open-ended environment. Computational and algorithmic rules are incompatible with the more flexible properties of brains and bodies. Meanings emerge from categorisations based on value, purpose and historical memory. Meanings arise from embodiment as a result of internal referential conversations.

c) In the medical sciences, it appears that the placebo effect is not just a process to be to be disqualified in control trials. It now appears that the placebo process shows up as

changes in brain activity which could be used to guide us towards how best this could be integrated into the science of healing. But, we hear some say that may require some really superhuman persuasion of some of our medical and pharmaceutical scientists. Yes; but perhaps ***self-organised learning*** might enable each of us to continually become more human than we were before.

d) In neuroscience, the sleep patterns and the brain chemicals which affect wakefulness and sleep are better understood when the psychological effects of stress, individual traumas and personal experience are taken into account. In general, observations of patterns of brain activity need to be interpreted by inviting the psychology of the whole person into the experimental methodology.

e) In AI, simulation of brain activities might be better achieved within a systematic conversational understanding of how personal meanings are constructed and personal models of the world revised.

As these misunderstandings feed into **Mind-Two** we need to become much more careful, that a variety of values and poorly constructed meanings do not become unknowingly woven into the fabric our sciences and our research methods.
But with a careful deep and truly conversational approach between the sciences, and more integrated ongoing conversations between science and society; there is great potential for increasingly more productive explanations about ourselves and our nature, to ourselves as we each develop.

Mind-Two

The psychology of the person gains a deeper scientific significance when tools and methods enhance our awareness of the body and brain processes within Mind-One. No longer are we vulnerable to conjecture and the statistical, closed, static models of the person that uncomprehendingly claim that intelligence, personality, perceptual habits, cognitive styles and learning styles are fixed unchangeable endowments. We can now see that even with what will undoubtedly be seen as only the first steps towards ***Self-Organised Learning*** through the support and insights offered by skilled and insightful ***Learning Conversations***; people can progressively empower themselves to learn from their own living experiences. Experiences which they can enhance from the infinite resources that they can seek out and make use of, as and when they need to, develop their skills, competence, creativity and insights.

Psychiatry and Clinical Psychology can gain solid evidence about how to greatly improve the quality of what will become their ***Learning Conversations*** with their patients and so better organise their therapeutic practices.
Educational psychology can transform itself to provide precise support for learners seeking to advance their capacity for self-organised learning, involving ***learning to learn skills*** at the micro-level, ***strategic learning methods*** at the macro-level, and ***life conversations*** at the mega-level.

Psychological tool-making will become a major activity, providing and developing methods for detailed and accurate recording of all types of personal, occupational and professional activities. It will also develop new methods for enabling people to elicit and reflect upon how they can be enabled to consciously perceive how they acquire, develop and assess their beliefs, values and their personal meanings.

Mind-Three

This is the "mind-pool" of each or any group of individuals pursuing shared purposes.

The implications for **Mind-Three**, as this coherently connects to **Mind-One** and **Mind-Two** go well beyond our current understanding of what humankind can achieve in all fields of human endeavour. The quality of ***Creative Encounters*** as Maslow originally conceived them are, as some have occasionally experienced them, very different from what is experienced in many of the commercial events now on offer under this title.

THE SEVENTH STAGE: TOWARDS CONVERSATIONAL SCIENCE.

Quantum theory has shown that observers are not detached from their instruments. Relativity theory has shown that observers measurements of time and space depend on their position and velocity relative to what is being observed. Conscious choice and physical location has to be taken into account.
In our view a quest for a 'theory of everything' addressed in Physics, has to include a ***Theory of Mind*** including the functions of the Observer.

Physics, Chemistry, Biology, Psychology, Neuroscience, AI can only unite and converse as one entity, when science itself becomes ***humanised*** and the role of the human observer is better understood. A ***Conversational Science*** recognises that the conscious models of the world it describes will always be less rich than the emerging possibilities. A ***Conversational Science Paradigm*** requires a Kuhnian revolution within scientific method, so that the stages 1 to 6 we have described become transformed, yielding new and unexpected results. This opens up the boundaries between **MIND-1, MIND-2**, and **MIND-3**, with resultant new feedback loops and re-entry possibilities within a ***truly self-organising learning system***.

It becomes possible to envisage a ONE MIND for science to be of service to mankind. The selection systems of brain/body go beyond **Natural Selection** to **Conscious Selection** opening up new horizons for the future. The purposeful construction and reconstruction of personal meanings based on values, historical experience and self-organised awareness becomes significant, viable and relevant for mankind's alternative futures.

Five postulates for *Conversational Science*

P1. The proper elements of enquiry in science are conversational entities engaged in conversational endeavours. Human beings are but one example of such entities.

P2. Conversation is a process in which meaning is negotiated. Thoughts, feelings and perceptions about the negotiation of meaning cannot be negotiated within the explanatory systems of traditional science. Interactive construction of meaning offers new ways of construing how one conversational entity influences another.

P3. The methods of conversational science express the knowing of it; and the knowing of conversational science is informed by its methods: method and knowledge co-exist in a symbiotic relationship, only some of which is conscious.

P4. Conversational science offers fresh insights into other forms of scientific enquiry. This is because the knowing and the methods of conversational science can enable other sciences (and paradigms) to re-negotiate their meanings with themselves and with one another.

P5. Conversational science offers people the means for self-organising their own change; self-organised change is the most meaningful definition of freedom. Such freedom is the corner stone of a democratic (cooperatively conversational) society and an interconnected world.

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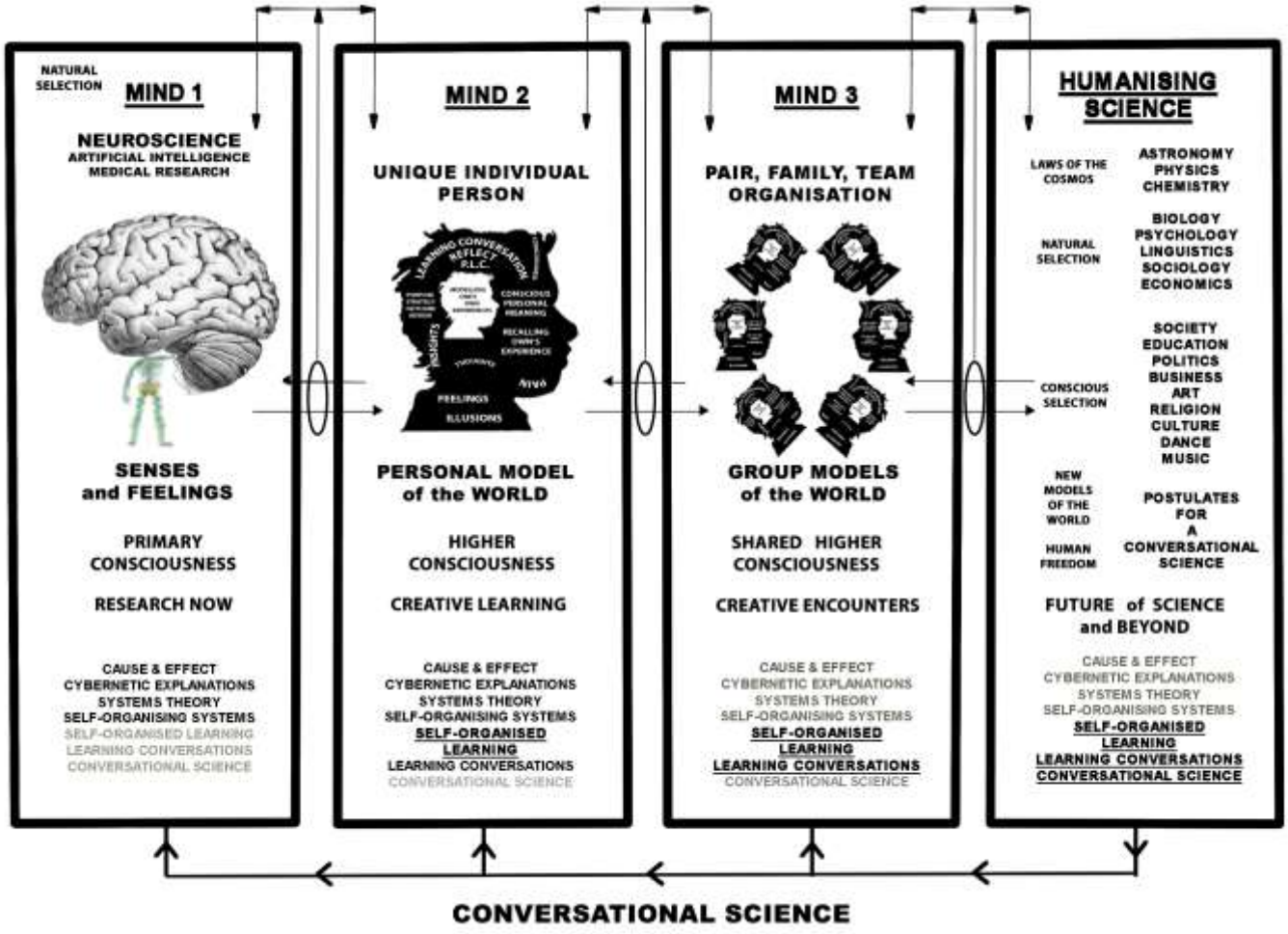

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Published Books of interest:

Self-Organised Learning: Foundations of a Conversational Science for Psychology
Author(s): Laurie F. Thomas
Sheila Harri-Augstein
Publisher: Routledge (*Psychology Revivals*)

Learning Conversations: The Self-Organised Learning Way to Personal and Organisational Growth
Author(s): Sheila Harri-Augstein
Laurie F. Thomas
Publisher: Routledge (*Psychology Revivals*)

(*These are also available as E-Books on Amazon and the Apple Store*)