

How to create a mind

As our understanding of consciousness, intelligence and language *

Xinyan Zhang

say2xy@gmail.com

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Abstract

Based on the ontological proposition, “life is the only attribute of mind, and mind also the only attribute of life”, a model of the human mind is hypothesized in this article. It may be deduced from the proposition and the model: 1. All the structures of a brain are the potential of its intelligence. 2. Consciousness is only the language used in the communication of an awakened brain. 3. Qualia are the same mental language manipulated by different memories. 4. Life is the only meaning of all mental languages.

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Main text in English

Practically, we cannot do all the different things with just one and the same system of language or behavior.

Usually, we need a special system to do a special work.

Everything is understandable or creatable if done with the right system as its tool.

The purpose of this work is not to know but only to understand the human brain, especially to understand our consciousness, intelligence and language. And the special system constructed by the author and served as the tool for this purpose is called **OC** or **M₁₃**.⁽¹⁾

To know and to understand are always two origins of one and the same knowledge. To know is the same as to get, and to understand the same as to give. In other words, to know is to get the specialization of a knowledge, and to understand is to give the generalization of the same knowledge.

If there is such a knowledge in which all known may be categorized as “brain”, then, all understood must be categorized as “mind”. In other words, **all that we know about the brain and understand about the mind are just two components of one and the same knowledge.**

Therefore, if we do not try to understand the mind, we may never have the knowledge that explains our own consciousness, intelligence and language, no matter how much we know the brain.⁽²⁾

To create a mind, at least a theoretical one, is the way, may even be the only way to understand it.

To create a theoretical mind is not the same as to create a mind, to create a mind is not the same as to create a human mind, to create a human mind is not the same as to create a human brain, and to create one human brain is not the same as to create another one. The human brain is a complex network composed of 86 billion neurons that communicate through trillions of synapses. For the understanding of our consciousness, intelligence and language, it is more useful to create an ontological mind than to create a biological brain.

An ontological mind may be defined as the universality of all the different brains. And, more exactly, it is **the universality of all the different living brains.**

This definition does not identify the mind as a human brain ⁽³⁾, and it does not even identify it as any brain. But it may still be a kind of identity theory that means that a mind is always the same as a life or lives, and vice versa. ⁽⁴⁾

No mind may exist if not be a life or lives, and no life may exist if not be a mind or a part of it. Life is all the mysteries of mind, and mind all the mysteries of life. If it is the mind that needs to be explained, it must finally and fundamentally be explained as a life or lives. If the question is about the origin of the mind, a life or lives must be the ultimate answer. In other words, life is the only attribute of mind, and mind also the only attribute of life, and, therefore, consciousness, intelligence and language must be the properties of all the living systems.

More than 2500 years ago, the words that Parmenides said in his poem *On Nature*, “the same thing is for thinking and for being”, might be the same, might also be a kind of identity theory of mind and life. And Aristotle also said: “what has soul in it differs from what has not, in that the former displays life” (*On the Soul*, Book II, Ch. 2).

The sameness of mind and life may be found not only from all animals and plants but also from all the living cells that compose them. And mental events may be identified as cells’ detecting an external stimulus, intermediating its systematic processes and making a reaction to it. The differences between a cell and a brain should not be understood as the differences between a life and a mind.

The sameness of mind and life is certainly a better basis for us to explain why a simple fertilized egg should want to develop into a human brain said as the most complex organization in the universe, and why there should be windows of opportunity or critical periods in a brain’s early development. And, it may also be the best explanation of a brain’s plasticity and adaptability ⁽⁵⁾.

And it is provable that a mind also needs nourishment, is also vulnerable, undergoes the way of birth,

growth, ageing and death as well, and is governed by Darwin's natural selection too.

Without the sameness, neither the mind nor the life is understandable, and it is even impossible for us to understand our own brains, especially our consciousness, intelligence and languages. Whereas, based on their sameness, life is a way for us to study and understand mind, and mind is also a way for us to study and understand life. And to create a mind is simply the same as to create a life or lives.

Just as to create a mind is not the same as to create a human brain, to create a life or lives is also not the same as to create a biological body, its organs, tissues, cells and biological macromolecules. **Ontologically, to create a life is simply as to create a relation between different categories of changes.** ^(6,7)

There are two categories of changes in reality. There are O changes, such as return changes or circular changes, and also C change, such as a one-way change or an irreversible change. **Ontologically, to create a life is just the same as to create the oneness or the unity or the interdependency of O changes and a C change.** And such a relation may be called an **OC** or **O_nC**. ^(1,6)

The C change of an OC determines its becoming and the O changes are its being. In other words, the O changes may be understood as the activities to create a "self", and the C change the activity to transcend the "self". If only a living creature may reproduce itself or adapt to its environment, then the OC is the ontological principle of such self-reproduction or adaptability.

Since OC means that a life does not only create a "self" but also transcends the "self", and since the sameness of life and mind means that consciousness or intelligence may be a relation between the O and the C, it is therefore reasonable to hypothesize that intelligence and consciousness might only be different views of one and the same OC. "Intelligence" might mean the relationship in which O is the creation of the C, and "consciousness" the relationship in which C is the transcendence of the O. This hypothesis will be discussed with more details in the second half of this article

As both changing and being, the O may also be understood as return changes or circular changes between relative energy and relative matter. And, as both changing and becoming, the C may also be

understood as a one-way change or an irreversible change from an absolute energy to an absolute matter, or from an absolute matter to an absolute energy. ^(1, 6)

Any matter or energy is absolute only because of the C of OC, and relative only because of the O of OC. Therefore, the OC is more ontological than energy or matter. ⁽⁸⁾ And to create a life is not to create matter or energy but only to create the OC relation between them.

Lives may be divided into two categories according to the contrary directions of their C change. The one with its C towards absolute energy may be called **spring life**, and the one with its C towards absolute matter **autumn life**. ^(1, 6)

A spring life consumes absolute matter and creates absolute energy, and an autumn life does the opposite. The sun is a spring life. There is an autumn life in every quantum mechanical change with entropy's increase as its inevitable result. ⁽⁹⁾ All biological lives, such as plants, animals and humans, are autumn lives. And our cosmos, with its directionality from less entropy to more, may also be understood as an autumn life.

A life as life may be either simple or complex, either longevous or short-lived, and either micro or macro. A life may contain lives or be contained by lives. Anyway, a life is never simply the same as a human, an animal, a plant or a bacterium, since life is not only the O but both the O and the C.

The absolute matter may be the birth of a spring life or the cold death of an autumn life, and the absolute energy the birth of an autumn life or the heat death of a spring life. All the so-called non-living matters, such as protons, neutrons or atomic nuclei, are such absolute matter, the remains of some dead autumn lives deeply frozen by our environment.

Both birth and death are ontological changes, and also the ontological deficiency in panpsychism. ⁽⁴⁾

Though mind and life are the same thing, the same thing may still be called with different names. So, **a life as a system may be called a mind, and a mind as a part of a system may be called a life.**

A mind, as a system, is always composed of both spring and autumn lives, and, as a part of a system, may

be either a spring life or an autumn life. A human body or brain is always dominated by autumn lives, and, therefore, the cold death is also our destiny.

Since spring life and autumn life are linked up with their death and birth, a mind, as a system of different lives, is always organized with two kinds of system relations: **MEM system relation** and **EME system relation**. The absolute energy is the E in a system relation, and the absolute matter the M. An MEM system relation always begins with a spring life and ends with an autumn life, and a EME system relation the contrary.

A system relation is the irreversible causality between spring lives and autumn lives. And still, system relations may be dominated by either the spring life or the autumn life.

If learning, understanding, organizing and creating are the main works of a mind, autumn life is the main principle of learning and understanding, and spring life the main principle of organizing and creating. All principles of mind are the principles of life, and vice versa.

In addition to life changes, there are two other changes in system relations, the **form changes** and the **location changes**. The absolute energy may undergo location changes and the absolute matter form changes in a EME system relation, but the contrary in an MEM system relation.

The human brain's activities may never be explained only with different neurotransmitters and nerve impulses, since impulses moving along a nerve or neurotransmitter released from a synapse is only the location change, and that nerve impulse converting into neurotransmitter or vice versa is only the form change.

Similarly, a mind or a human mind may never be created with logic, mathematics or computation alone, all of which are only the form change and/or location change.

No concept or theoretical system that cannot explain life or its creation and transcendence may still explain our consciousness or intelligence or language, or ever get us out of the logical quagmire of dualism.⁽⁸⁾

Though both are made of both system relations, **a human mind or brain is still the main EME system relation of a human body, and the body the main MEM system relation of the mind or brain**. All the

different ideas of embodiment tell us only special examples of such a relationship. ⁽¹⁰⁾ And this relationship also proves that human beings are indeed autumn lives.

If there is time, it is always a proof of the existence of such a mind-body relationship.

The E in MEM system relation may be understood as the present, and the M in EME system relation as both the past and the future. If a human body may therefore be understood as the present of a human mind or brain, the mind or brain is then both the past and the future of the body. And the mind-body relationship is also the relationship between the present and the past-future, and is the process through which the present interacts with both the past and the future.

A mind is always both hereditary and acquired, so are the past, the present and the future. And there is much more acquired than hereditary in our minds.

As a life that transcends the body, as a system that transcends its receptors and effectors, as the EME system that transcends MEM systems, as the acquired that transcends hereditary, as the understanding that transcends knowing or doing, as the indirectness of knowing and doing that transcends their directness, a human mind means not only self-accomplishment but also self-transcendence. Therefore, that AlphaGo beats Lee Sedol in a board game is only an example how the human mind may transcend a human brain. And Nick Bostrom's AI that tries to turn everything into paperclips, no matter how superb in its self-accomplishment, shows no ability of self-transcendence.

Since a mind is not the same as a human mind, and a human mind is not the same as a human brain, more and different divisions, at least 12+1 divisions of the O of OC, are necessary if to understand our own consciousness, intelligence and language is the purpose. The special system based on the 12+1 divisions may be called **an M₁₃ or the M₁₃ explanation.**

An explanation is always a kind of completeness, either the completeness of a system or the completeness of an entity. **The OC is not an entity, and there is no entity in the system of M₁₃.**

As a member of the family O_nC , the M_{13} becomes more like the mind if it has less divisions, or more like a human brain if more divisions. More divisions, however, do not mean more completeness. A human brain may never have more completeness than an OC, even than the M_{13} . In other words, **a human brain is always more knowable but less understandable than the OC, even than the M_{13} .**

Both the brain and the rest of a human body are the divisions of one fertilized egg, but neither of them has more completeness than the egg. It is not Occam's razor or principle of parsimony but the C or the directionality of autumn lives that determines that the understanding of them should be much simpler than the known of them. An understanding might simply be the past of the known.

The M_{13} is therefore both the understanding of human brains and some known of the OC.

Not only as the EME system relation between our sense organs and motor organs, but also as MEM system relation among our internal organs, an M_{13} may have the relationship shown as in Diagram (1).

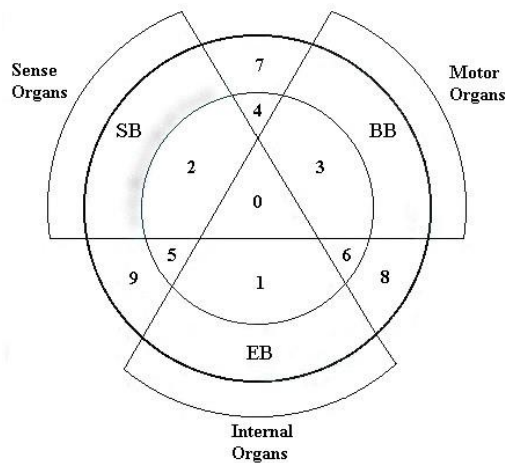


Diagram (1) The general relationship of an M_{13}

The areas between the peripheral circle and the central circle are the mind's hereditary parts, and within the central circle are the mind's acquired parts. The three wedge areas are the three main brains. Area 0 is the CM. And area 4 to 9 are intermediate brains.

That is, an M_{13} may be divided into a sense brain (SB), an emotion brain (EB), a behavior brain (BB), and three intermediate brains. SB has more direct connections with the sense organs that compose the surface of the body. BB has more direct connections with the skeletal muscles. EB has more direct connections with internal organs. And intermediate brains have more direct connections with SB, EB and BB.

Each mental brain is composed of a part of hereditary memories and a part of acquired memories. Some acquired memories are shared among all mental brains, and the shared acquired memories may together be called **central memory** or **CM**.

The 12 parts of mental brains plus the CM are together the 12+1 divisions of the M_{13} .

Ontologically, there is nothing subjective or objective in an OC or an M_{13} , since the OC is not an entity and there is no entity in the M_{13} .⁽¹¹⁾ **All that may be found from an M_{13} are memories, languages and lives.** If the M_{13} may be the explanation of human brains, it should be able to explain our consciousness and intelligence, and explain the semantic principles of our language, with them, and only with them.

Divisions of the O never change system relations among the lives in an M_{13} . EME is the system relation between SB and BB, and MEM the system relation between EB and other mental brains. And **an M_{13} is then a comprehensive explanation of the activities through both the EME and MEM system relations.**

Since a human mind is also the main EME system relation of a human body, therefore, memories, languages and lives in the EME system relation must be the main explanation.

Memory is the M in a EME system relation, language is the E, and lives are neither of them.

The M, either hereditary memory or acquired memory, is the structure of a EME system relation. Hereditary memories in a human brain are the structures created by the gene-determined interactions among different cells, and acquired memories the structures created by the environment-determined interactions between the brain and its environment.

The E does not have its own form, and lives are not form changes. The M is the only one that is not only

the form of EME system relation but also changes all the time, either as hereditary change or acquired change. The E is universally the same, so are the lives. **All the differences among all the brains or all the living systems are only the differences of their M.** Therefore, the M in EME system relation is the only one that may ever explain the intelligence of an M_{13} or any brain. Intelligence is nothing more or less than the structures of a system. All the structures of our cosmos are all its intelligence. All the structures of a human body are all its intelligence. So are all the structures of a human mind or brain.

Contrary to what Descartes thought ⁽¹²⁾, there is no intelligence without structure, or no structure in EME system relation that is not a kind of intelligence. In other words, **intelligence is the complexity in a EME system relation against the uncertainty in the system's environment.** All the hereditary structures are therefore the intelligence for a creature to deal with what may occur postnatally, and all the acquired structures the intelligence for a creature to deal with what may occur by next time.

In other words, **intelligence is the changes in the space of a system against the change in the time of its environment.** That is the reason why there is time, and why time may always be a proof of the existence of mind-body relationship.

An intrinsic complexity makes all the differences. If artificial intelligence may be created with simple arithmetic, human intelligence must have been created with complex geometry.

The geometric complexity in the O of OC may be any cell's intelligence, any biological creature's intelligence, and even any biosphere's intelligence. **Based on the same complexity may always arise the same species.** ⁽¹³⁾ Not the E, not the lives, the M alone is the basis of our personal identities or the answer to Kant's question: What is the human being? And the only reason why an M_{13} may explain better than an OC hides also in the differences of their complexity.

This is also the reason why quantum mechanics, let alone the theory of relativity, is not the right system for us to explain our brains. ⁽¹⁴⁾ Neither of them is about the differences of our biological complexity!

Hereditary memory is hereditary intelligence and acquired memory acquired intelligence. The more

intelligent a brain, the more complex its EME system relation. The more complex a EME system, the less possible that there are in its memories the representatives of those entities found in its environment, and the less possible that there is a mirrored world or a self in a brain. **The complexity itself must be everything and nothing as well.**

During the development of our cosmos, during the development of a human body, a special intelligence always emerges when certain structures occur, and fades away when those structures disappear or are changed. This may also be the explanation of what called “infantile amnesia” and “childhood amnesia”.

Every living creature has memories, and therefore has certain intelligence. The only difference is that we have more acquired memories or acquired intelligence than them. The most complex structures of human cerebral cortex, especially the neocortex, must be the very basis for us to have more acquired intelligence.

The hereditary intelligence as the M in a EME system relation determines the system’s hereditary behaviors, and the acquired intelligence determines the system’s acquired behaviors. One loses his humanity when one loses his acquired behaviors, and one also loses his existence when one loses his hereditary behaviors.

The directionality of autumn lives determines that hereditary behavior is the center of acquired behaviors, and earlier acquired behavior the center of later acquired behaviors. Acquired behaviors always follow the hereditary behaviors, not the other way around.

No hereditary or acquired memories from different persons are exactly the same. And, therefore, no human body is exactly the same, and no human brain is exactly the same in sense, emotion, behavior and language. Such differences play a vital role in the survival of the human race. It is a part of the complexity with which human beings deal with the uncertainty of our environment.

Therefore, a better team is a group of different human minds that may better complete and maintain a life. So is a better society or a better biosphere. And any idea or action that tries to unify all humans, all social behaviors or all political systems is always a threat to human existence.

It is said that the size of human brains has decreased over the past three thousand years. ⁽¹⁵⁾ If so, it might be acquired changes caused by both the increase in the complexity of our social activities and the decrease in the complexity of our individual activities. And it may be a proof that mind or life is more ontological than the brain or any biological body, and the OC is more ontological than any individual.

The intelligence of a social mind or life is the fundamentals of its morality. Plato might also mean it when he drew an analogy between a State and an individual in his *Republic*. As intelligence, morality is always both hereditary and acquired, neither as Socrates thought nor as Kant thought. ⁽¹⁶⁾

There should be only hereditary intelligence if rationalism is the only explanation of the mind or brain. There should be only acquired intelligence if empiricism is the only explanation of the mind or brain.

Kant's categories are all our hereditary intelligence. And his epistemology is only a better explanation of the human mind, but not the mind.

Life, and life alone, is the thing-in-itself. Energy or matter is only either language or memory, and all phenomena are only qualia. Therefore, life may be understood but never known.

There are both an autumn life and a spring life in every EME system relation. **Intelligence is brought into play only when language joins memory together in the autumn life, or when language separates from memory in the spring life**, both of which are proofs of the sameness of mind and life.

There are exchanges of absolute energy or absolute matter among mental brains, between an M_{13} and the rest parts of a body or the body's environment, which may be called **communication** if conducted through the EME system relation. The E or absolute energy is the only one that may undergo location changes, and is, therefore, the only language used in the communication, which may be called **E language**.

Only life may exchange or communicate. And any life may exchange or communicate with any other life.

The communication with E language is always based on a certain level of waking state and always limited within a certain extent of the state.

The alternation of wakefulness and sleep is the most fundamental activities of a living system with intrinsic mind-body relationship.

The alternation of wakefulness and sleep may be understood as a system's thermodynamic changes, as Carnot cycles. Such O changes may also be found from many cells, organs and systems in human bodies, as well as in many animals and plants. For example, the myocardial refractory period may be understood as the period of cardiac cells' sleep, even though it lasts only for 250ms. In other words, the period between two refractory periods may be understood as those cardiac cells' waking state, and the action potential as the E language of their communication. Both their communication with E language and their waking state together may be understood as those cardiac cells' consciousness. And there is no ontological difference between cardiac cells' consciousness and our consciousness.

Consciousness is the unity of waking state and communicating processes. **Such state changes are the changes of MEM system relation, and such process changes are the changes of EME system relation.** And therefore, our consciousness is always a part of the mind-body relation.

All the communicating activities in our brains or bodies are carried out through both system relations. **Biological communication is always a duet of both state changes and process changes.**

The process changes of skeletal muscles in our bodies are controlled by the brain through pyramidal tracts, and their state changes through extrapyramidal tracts. Still, there is no ontological difference between skeletal muscles' consciousness and our consciousness.^(17, 18) So is the consciousness of our sense organs.

The completeness of mental communication is not based on E language but on the M language.

The state changes fluctuate all the time, both generalized and localized.

As brain's overall change, our consciousness may be defined as the unification of both those processes through the EME system relation and the waking state of the MEM system relation, when the brain is a body's main EME system relation and the body the brain's main MEM system relation.

There are different subsystems on different levels of human central nervous system. And, from neocortex down to spinal cord, the one on its lower level has always less acquired memories. Our consciousness is then the activities of the subsystem based on most of its acquired memories, especially the CM. Everyone has her or his own world and self, and the world and the self are nothing more or less than the duet used specifically in the communication of this subsystem. **So are not only all humans but also all other animals.**

The rise and fall of attention might be explained with localized state changes based on the overall waking states. ⁽¹⁹⁾ And dreaming might be explained with localized state changes based on the overall sleeping state. In both cases, the duet of state changes and process changes is the explanation.

The abnormality in the level or the extent of a localized state change, rather than the E language used in communication, might be the real cause of some psychiatric consciousness. In other words, some localized abnormality in MEM system relation or EB may be the real cause of psychiatric consciousness.

Our cardiac cells' consciousness and our consciousness are different, but different only in the form of the M, not in the E itself. In other words, **the M is the only form of all and every E language.** Such relationship between E and M may be called **a quale or qualia** ⁽²⁰⁾.

All phenomena are qualia, but not all qualia phenomena.

Therefore, not only consciousness but also what called by Sigmund Freud "subconscious" or "unconscious" may be understood as qualia. **To create a system always means to create certain qualities or qualia. Every system, and even every subsystem, may have its own qualia.**

The world as a system or systems is full of qualia. An electron appears as different qualia when it flows through the different structures of a certain conductor, or when the conductor changes from a non-superconducting state to a superconducting state. So does it when the E passes through different mental structures, and different states of those structures.

Qualia in mind or brain are either location changes of the E or form changes of the M in EME system

relation, but never life changes. Different qualia in a brain mean only differences in the structures of EME system relations, especially in the structures of its hereditary memories.

The so-called collapse of a superposition state may also be understood as a quale emerged when a quantum state tries to communicate with a measuring instrument. But a quantum quale may never be the same as a human brain's quale, otherwise, the brain should have less complexness than the M_{13} has.

As every mind has its own qualia, so does every life. A special quale exists only when a special EME system exists, and is useful only when a special life exists. And our qualia exist only because of the existence of the hereditary memories or hereditary structures in our brains. And, therefore, qualia are always parts of our hereditary intelligence.

Through EME system relation, the SB speaks to rest parts of the mind or the brain. And all the different senses, such as sight, hearing, taste, smell and touch, are SB's language. Through MEM system relation, EB speaks to rest parts of the mind or the brain. Both emotion and intuition are EB's language.

Thinking may be understood as the communication through both MEM and EME system relations, in which different mental brains talk to each other, in which the acquired memories in CM and the hereditary memories in SB, EB and BB talk to each other. Descartes said: "I think, therefore I am", but M_{13} may prove to us that thinking does not need the existence of a subjective self.

The mind or the brain is never a communication channel. The E never simply passes through a EME system relation. **Life changes during the processes of thinking are the determining links between the changes in M and the exchanges of E.**

Thinking may go either within or beyond a brain. Therefore, behaviors may also be understood as explicit self-communication. The same as the implicit communication, all the explicit communication is also a duet of both the process changes originated from BB and the state changes originated from EB. And, therefore, **a behavior may be understood as an explicit consciousness, and a consciousness as an implicit behavior.**

(17)

However, neither behavior nor consciousness conveys semantic meaning. **Semantic meaning is either the cause or the effect of a communication, but never the communication itself, nor the qualia emerged during the communication.**

Since neither the E alone nor the M alone, not even E and M together, may be either the cause or the effect, the only one left, the life changes, must be the meaning, the only semantic meaning of any mental language, and the only semantic meaning of any acquired or hereditary memory. In other words, there is no semantic information in either the E or the M, and **life is the only meaning of any absolute matter or energy.**

Meaning or information is not what got but given, not what found but created. In other words, language and memory may be realized only by a life or lives.

“ $1+1=2$ ” is only language, so is “ $A=A$ ” or “ $E=mc^2$ ”. And all concepts are languages of the BB. None of them may carry or deliver any meaning. Their meanings may only be the concrete live changes in certain concrete brains.

Even though everyone has her or his own world and self, neither the world nor the self is the meaning. So wrote Wittgenstein, “the sense of the world must lie outside it”.⁽²¹⁾

An analysis of behavior or language is then not to find the meaning but only to create it.

So are all the words and sentences in this article. They are nothing more or less than languages. And, therefore, what the author means with them may not be the same as to each of the readers.

As the central meaning of acquired mental language, CM is also a life, either a spring life or an autumn life. As an autumn life, CM is the meaning of both the absolute energy that it consumes and the absolute matter that it creates. And, as a spring life, CM is the opposite. In other words, CM is not only the meaning of what BB says but also the meaning of what SB says.

A mind is a part of Darwin’s world, full of lives, full of birth and death. **We may understand our own brains only if we understand that natural selection is also the governor there.** This is another proof of the

sameness of mind and life.

Ontologically, natural selection is the O changes of OC. Still, the C of OC determines that there is a directionality of the selection.

The C means that life or mind or brain or body is neither accidental nor teleological. ⁽²²⁾

Human brain may be difficult for us to know, but is certainly not so difficult for us to understand. The only reason why it is still difficult is that we have not wanted to understand it as it is. We have not wanted to understand it as an OC. We want only the O of the OC, but not the C.

That is also a proof of the sameness of mind and life.

Important points:

1. Life = OC.
2. A body or mind = a living system that contains both spring life and autumn life.
3. A living system = the E, the M and both lives organized in MEM and EME system relations.
4. A mind is the main EME system relation of a body, the body the main MEM system of the mind.
5. Qualia = Either location changes or form changes of the E in EME system relations.
6. **My intelligence, consciousness and language are only some qualia of the top subsystem in my CNS. ***
7. Memories undergo state changes determined by the MEM system relation.
8. Life changes are the only meaning of all the conservative changes.
9. My world and self are nothing more or less than some qualia.

* Our consciousness is quale changes since we are dominated by autumn lives, and it may also be life changes if in a living system dominated by spring lives.

Notes and References

(This is not a work to discuss all the concerned literatures but one to construct a system that is consistent by referring even only to itself. Please try others if this system is not what you are looking for.)

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7. 心言, *Be Human in the Paradis*, 2014, Amazon kindle book [B00IHE5QS2](#).
8. The possibility that life may arise from non-life does not prove that all the energy and matter we know may not be created by a life or lives existing before them. At least, energy or matter is not the solution to our problems with dualism. But life is the one, and may even be the only one that can unify the mind and the body.
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且以心解脑

Xinyan Zhang

say2xy@gmail.com

摘要:

为了最终理解我们自己的意识、智慧和语言，不仅需要在大脑的观察、实验、分析和计算模拟，还必须理解“心灵”和“生命”这两个概念。在本文中，以整体论为基础，以对系统的构建为方法，以心灵为一切脑的共性，作者首先提出了一个本体论命题“心灵是生命的唯一属性，生命亦是心灵的唯一属性”，之后，通过对心灵与生命这两个概念的相格互证，推导出了一个 13 维的人脑模型，并从不同角度反复验证了该命题和该模型对意识、智能、记忆、语言和语义的解释能力，特别是对感受质的解释能力。作者试图通过本文论证：“心灵与生命的同一”是认知科学的一个核心理念。

文址: <https://philpapers.org/rec/ZHAHTC>

横看成岭侧成峰，远近高低各不同。
不识庐山真面目，只缘身在此山中。

（宋）苏轼 《题西林壁》

我们往往无法仅仅只用同一个语言或行为的系统来做所有的事情。在做一件特殊的事情时，我们往往需要一个特殊的系统。⁽¹⁾

一个系统不过是一件做事的工具。不同的系统能做不同的事，用处亦有大小多少之不同。其实，只要能以正确的系统为工具，这世界上就没有什么不能理解或创造的。⁽²⁾

不是为了知道，而是为了理解，本文以理解我们自己的大脑，特别是以理解我们自己的意识、智慧和语言为目的。为达此目的，我在本文中构建并使用的工具是一个被称之为 OC 或 M_{13} 的系统。⁽³⁾

在我看来，知识本就是这样的，总是由两类不同成分共同组成，其中一类源于我们的知道，另一类则源于我们的理解。可以说，我们知道的是我们所得到的，而我们理解的却是我们所给予的。更具体点说，“知道”是得到事物的个性，而“理解”却是给事物以共性。虽然对共性的理解并不意味着要脱离对个性的知道，但只是，知道永远无法取代知识中的理解。所谓“物理主义”或“科学主义”，错就错在试图用种种知道来取代一切理解。

例如，即便我们在全世界各地观察了一亿只乌鸦，并发现所有这些乌鸦全都是黑色的，即便如此，说“天下乌鸦一般黑”依然是一种给予而不是一种得到。几乎在任何一篇科学或认知科学的论文中，都存在着这样两种不同的成分。

顺便说一句，所谓“哲学”，其实就是这理解本身，既不是所要理解的对象，也不是所能得出的结果，不是数学、物理、化学、生物、心理、社会学或神经科学，而仅仅只是对智慧本身的爱，仅仅只是作为人性和人的使命的那些所思所想和所作所为本身。一切知道都无不理解所驱使，又皆以理解为自己最初的起点和最终的目的。

如果有这样一门知识，其中全部的知道都可以称之为“大脑”，那么，将其中全部的理解，亦可称之为“心灵”。因此，如果仅仅致力于对大脑的知道，而不努力去理解心灵，那么，无论能知道多少，最终的结果都一样，我们都将依然无法理解我们自己的意识、智慧和语言。⁽⁴⁾

心灵并不是我们所能得到的，却是我们能够给予的。创造心灵，至少创造一个理论心灵，是理解心灵的唯一途径。

创造一个理论心灵并不等同于创造心灵，创造一个心灵并不等同于创造人的心灵，创造一个人的心灵并不等同于创造人的大脑，创造一个人的大脑也不等同于创造了其他所有人的大脑。人脑是一个由大约八百六十亿个神经元，经由千万亿个突触的连接，而组成的复杂网络。创造一个人脑或创造比人脑更复杂的知识系统未必可能。至少，在最终理解我们自己的意识、智慧和语言这件事上，创造一个理论心灵的用处和价值应该远远超过去创造一个生物脑。

心灵就是种种不同脑的那个共性。更准确地说，**心灵就是一切活着的脑的那个共性**。这个定义说的并不是人脑与心灵的同一⁽⁵⁾，甚至不是任何脑与其它任何脑的同一，但却依然可以被理解为一种同一论，一种**心灵与生命的同一论**。

心灵与生命同一，心灵就是生命，生命亦是心灵，一切无生命的心灵或无心灵的生命皆不可能⁽³⁾。或者说，生命是心灵的一切奥秘，心灵亦是生命的一切奥秘，心灵最初起源于生命，心灵最终亦只可能被解释为生命。再或者说，生命是心灵的唯一属性，心灵亦是生命的唯一属性，因此，**一切生命皆拥有意识、智慧和语言**。⁽⁶⁾

两千五百余年前，古希腊哲学大师巴门尼德所说的“思维与存在同一”，似乎就是一种心灵与生命的同一论。亚里士

多德亦曾说过：“具有灵魂之不同于不具有，尽在其生命之显现中” (*On the Soul*, Book II, Ch. 2)。

如此说来，不仅一切动物、植物和微生物都应该拥有自己的心灵，甚至对组成任何生物体的任何一个细胞的特定刺激，该细胞对该刺激的特定反应，特别是介于这刺激与这反应之间的那些特定的生命过程和状态，亦都应该被理解为心灵的活动。换句话说，一个细胞与一个大脑之不同，绝非就是生命与心灵之间的不同。

只有以心灵与生命的同一为基础，我们才有可能理解，何以心灵与生命同样，同样需要营养，同样可以受到伤害，同样会有常态或病态，同样是一个生、长、壮、衰、老、死的过程，亦同样受着自然选择的支配。

只有以心灵与生命的同一为基础，我们才有可能更好地解释，何以从一个受精卵能发育成一个由数十万亿细胞组成的人体，特别是，能发育成一个据说是具有宇宙间最复杂结构的人脑。正是基于心灵与生命的同一，在脑发育过程中有所谓的“窗口期”才是合情合理的。同样，心灵与生命的同一亦是对脑的可塑性或适应能力的最好解释。⁽⁷⁾

如果心灵与生命之间没有这样一种同一，那么，无论是心灵还是生命都将是不可理解的，进而，不仅人心灵是不可理解的，人脑，特别是人的意识与智能，也同样是不可理解的。反之，在它们这种同一的基础上，不仅生命可以成为对心灵的解释，心灵也同样是对生命的解释，而创造一个心灵无非就是创造一个生命。

如同创造心灵并非就是创造人脑，创造生命并非就是创造人体或其它生物体，亦不是创造器官、组织、细胞或生物大分子。从本体论上说，**创造生命仅仅只是创造不同类别变化之间的同一、统一或相互依存。**^(8,9)

在真实而非虚妄的世界中，存在着两类不同变化：一类是O变化，又可以称之为往返变化或循环变化；另一类是C变化，又可以称之为单向变化或不可逆变化。创造生命或心灵就是创造特定O变化与特定C变化之间的同一、统一或相互依存。**O与C的这种同一、统一或相互依存在本文中简称为OC。**⁽³⁾

OC中的那个O是生命中的那个生 (being)，而那个C则是生命中的那个命 (becoming)。也就是说，生命对于一个“自我”的创造和再创造都是O变化，生与死之必然则是C变化，又是生命对任何一个“自我”的超越。

量子力学家们亦可以把这个O理解为一个量子态，而把C理解为该量子态变化的一个必然方向。

如果一切生命皆以某种不变的东西为中心，那么这个不变的不过就是O与C的这个同一、统一或相互依存。如果一切生命皆能适应环境，那么这个OC就是这适应能力的最基本原理。

既然OC告诉我们说：生命是一种既创造“自我”又超越“自我”的变化，而生命与心灵的同一论又告诉我们说：一切生命皆有意识与智慧，既然如此，为什么不可以设想说：意识和智慧都不过是些生命的变化，不过是生命对“自我”的创造和超越。也许，**智慧不过就是O对C的创造，而意识则不过是C对O的超越。**对此假说，在下面对M₁₃的讨论中将予以具体化。

显而易见，如果创造一个生命不过就是创造一个OC，那么这创造就并非一定要基于生物性原材料，就既可以基于生物性原材料也可以基于非生物性原材料。

当然，也并非任何材料都可以用来创造生命。在我看来，一切可以用来创造生命的原材料，至少都应该能够在以下所

说的这样三种不同状态之间转换或变化。这三种状态可以分为两种绝对状态和一种相对状态，分别称之为绝对能量，绝对物质，以及相对的物质和能量。其中绝对能量或绝对物质只是相对于相对状态而存在，相对的能量和物质亦只是相对于绝对状态而存在，而相对的物质和相对的能量则相对于彼此，作为同一个状态而存在。⁽¹⁰⁾

理解这两种绝对态和一种相对态是理解生命的关键，因为，**创造生命并不是创造其原材料，而只是创造这三种不同状态之间的 OC 关系。**也就是说，对意识、智慧或语言的理解，无一不是对这三种不同状态之间 OC 关系的理解。

作为一个生命的那个 O，是一种动态平衡，是相对能量与相对物质向彼此的往返变化或循环变化；而那个 C，则是生命向绝对能量或向绝对物质的单向变化或不可逆变化。其中向绝对能量变化者可以称为**春生命**，而向绝对物质变化者则可以称为**秋生命**。⁽³⁾春生命与秋生命是上述三种不同状态之间的两种变化方向相反的 OC 关系。这一点非常重要：**一切生命皆具有与生俱来的方向性。**

秋生命消耗绝对能量并产生绝对物质，而春生命则相反，因而都会破坏能量与质量的守恒。在任何一个以熵的增加为必然结果的量子力学变化中都含有一个秋生命。⁽¹¹⁾一切生物，无论是植物、动物还是人，都同样是秋生命。我们所处的这个宇宙，因其熵值不断由低向高变化，亦可以被理解为一个秋生命。**一切秋生命皆以绝对物质为其变化的方向。**

然而，又并非一切变化皆是生命的变化。例如，因其 C 有余而 O 不足，故而，一台热机，尽管服从于热力学第二定律，却依然不应被理解为一个或含有一个秋生命。又例如，因其 O 有余而 C 不足，卡诺循环则不应被理解为任何一种生命。

上述三种状态中的绝对能量可以是一个秋生命的诞生或一个春生命的热死亡，而其中的绝对物质则可以是一个春生命的诞生或一个秋生命的冷死亡。⁽³⁾一切为我们称为无生命的东西，如组成原子核的中子和质子，都不过是这样一种绝对物质，都不过是为我们生物环境的温度所深冻并保存着的某些秋生命的尸体。

这两个字，这“生”与“死”，说的正是心灵与生命的同一。⁽¹⁰⁾种种泛心论之所以不可能，正是因为缺少了生与死，正是因为违背了心灵与生命的同一。在这同一论看来，困扰着泛心论的所谓“内在属性问题”，“因果性问题”或“连接问题”，其实都是些莫须有的问题。

作为 OC，生命既可极复杂也可以极简单，既可极长久也可以极短促，既可以是极宏观的存在，也可以是极微观的存在。生命之外可以有生命，生命之内亦然。但无论如何，生命都不是一个本体论上的 O，一个巴门尼德所说的 One，而是一个 OC，因而不完全等同于一个细胞，一个器官，一个生物体，一个内部分工合作的社会或一个生物圈。

心灵与生命固然同一，但同一者依然可以用不同名字来称呼。在本文中，一个作为系统的生命将被称之为心灵，而作为系统组成部分的心灵则被称之为生命。

作为一个系统，任何一个心灵皆由春生命和秋生命共同组成；作为系统的一个组成部分，心灵则可以是一个春生命或一个秋生命。在人心灵中占支配地位的是秋生命，因此冷死亡亦是人心灵的最终命运。

不同生命可以通过死亡来相互延续。作为一个由不同生命共同组成的系统，心灵通过两种不同的系统关系来组织不同生命之间的延续，分别称为 MEM 系统关系和 EME 系统关系。⁽³⁾系统关系中的 E 是上述的绝对能量，而 M 则是上述的绝对物质。每个系统关系中都含有两个生命，MEM 系统关系始于一个春生命，止于一个秋生命，而在 EME 系统关系

中则相反。系统关系中无绝对平等，在其中占支配地位的，既可以是一个春生命也可以是一个秋生命，既可在此时是春生命，又可在彼时是秋生命。

如果说学习、理解、筹划和创造是心灵独一无二的本领本事，那么 EME 系统关系中的秋生命便是这学习和理解的最基本原理，而其中的春生命则是这筹划和创造的最基本原理。一切心灵的原理都是生命的原理，反之亦然。

系统关系是上述三种状态相互转化过程中不可逆的因果关系。

在任何系统关系中都存在着三种不同变化，分别称为生命变化，形式变化和位置变化。上面说过的绝对物质和绝对能量只发生形式变化或位置变化，而上面说过的相对状态，如果向着绝对能量的方向变化，就是春生命变化，反之则是秋生命变化。正是由于生命的方向性，使得系统关系成为一种不可逆的因果关系。

人脑的活动不可能仅仅只用神经介质或生物电来解释，因为生物电沿着神经的传导，或神经介质由突触的释放，都仅仅只是系统关系中的一种位置变化。而神经介质转化为生物电，或生物电转化为神经介质，都不过是系统关系中的一种形式变化。

心灵不可能通过纯粹的逻辑、数学或计算过程来创造，因为它们都依然还只是形式变化或/和位置变化。

正是因为其中的这生命变化，所以一个心灵不可能仅仅是信息论所说的“信道”。

传统物理学说的只是绝对能量和绝对物质的形式变化或/和位置变化。量子力学说的只是 OC 中的那个 O 变化，还没有说到那个 C 变化，更没说到 O 与 C 的同一、统一或相互依存。生命是从无到有的创造或超越。物理学最喜欢说的是守恒与对称，偶尔也说说 CP 破缺，还远没有说到创造或超越。无论如何，一切不能解释创造之为创造或超越之为超越的概念或理论，都不可能解释心灵，都不可能解释我们的意识或智能，亦无助于摆脱身心二元论对我们的束缚。⁽¹⁰⁾

虽然同时都具有上述的两种系统关系，一个人的心灵依然还是其身体最重要的 EME 系统关系，而一个人的身体则是其心灵最重要的 MEM 系统关系。在身体与心灵的关系中，如果可以把身体的 MEM 系统关系比喻为一团燃烧着的火，心灵 EME 系统关系则如同是这火的守护者。

亦可以将身心关系理解为过去、现在和将来之间的关系。换句话说，一个人的身体，如果可以被理解为其心灵的“现在”，那么心灵便可以理解为其身体的“过去”与“未来”，身与心的统一则可以理解为此“现在”同时与那“过去”和“未来”相互作用的一个过程。这“过去”与这“未来”越具包容性，这“现在”亦越显智慧。

也许，所谓“时间”，正是心身关系之存在的一种本体论证明。

心灵既是一种获得又是一种遗传，这“过去”、“现在”与“未来”亦同样如此。只不过，与身体相比，我们心灵中的获得性要远远多于遗传性。

作为对身体的超越，作为系统对感受器或效应器的超越、EME 系统对 MEM 系统的超越、获得性对遗传性的超越、理解对知与行的超越，以及知与行的间接性对其直接性的超越，人的心灵同时既是那个 O 变化又是那个 C 变化，不仅是对一个“自我”的创造和完成，亦是对任何“自我”的超越。**这创造就是一种超越，而这超越亦是一种创造。**由此可以理解，使计算机打败象棋或围棋大师的不过是人心灵对人脑的超越，而尼克·博斯特罗姆所说的那个一心要将世间万物都打造成回形针的人工智能，即便善于完成一个自我，但却缺了一点自我超越的能力。

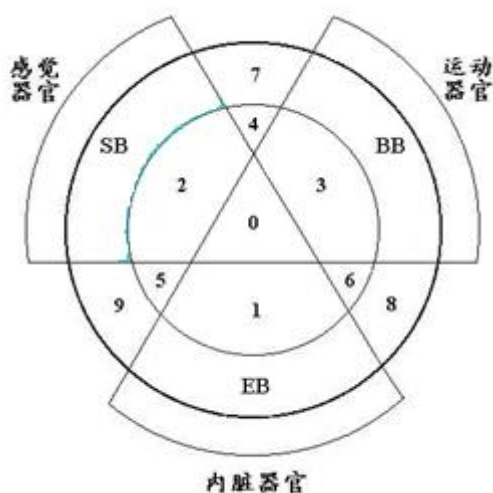
既然如上所说，心灵不等于人的心灵，人的心灵亦不等于人脑，那么，尽管 OC 能使我们的心灵的理解登堂入室，但依然还不足以使我们完全理解我们自己的心灵和脑。我们也许还需更多的分割、不同的分割，也许要将这 OC 一分为十三，方才能更好地理解我们自己的心灵，更好地解释我们的智慧、意识和语言。

一分为十三之后的人心灵可以简称为 M_{13} 。 M_{13} 是介于 OC 和人脑之间的一个系统，是 OC 的具体化和人脑的抽象化。 M_{13} 有自己能做的特殊事情，因而并没有违背简约法则或奥卡姆剃刀。虽然一个 M_{13} 的维度不可能少于一个 OC 的维度，但是，当这能做的事情离心灵越远而离人脑更近时，其维度亦应变得越来越多。

一切解释都是某种完全。

人脑的维度固然多于 M_{13} ，但却未必能比 M_{13} 更完全，至少不可能比 OC 更完全。换句话说，**脑固然更可知道，却永远不如 OC，甚至永远不如 M_{13} 更可理解。**至少，在解释人的意识、智慧和语言这件事上， M_{13} 应该是一件更好的工具。

这 M_{13} 的十三个组成部分，以及它们之间的关系，可以统称为 M_{13} 的内部结构。不仅作为人体中那些感觉器官与运动器官之间的 EME 系统关系，而且作为各个内脏器官之间的 MEM 系统关系，一个十三分的人心灵应该具有图一中所显示的那些内部结构。



图一 作为 M_{13} 的人心灵概观

位于外环与内环之间的为遗传记忆，内环之内则是获得记忆。标记为 0 的区域是中心记忆。三个楔形区域分别为三个主脑，以及它们所关联的身体其它部分。区域 4 到 9 则为三个中间脑。

也就是说，每个 M_{13} 都可以分为一个感知脑(SB)，一个情绪脑(EB)，一个行为脑(BB)，以及三个中间脑。SB 与构成人体表面的感觉器官直接联系，BB 与分布于肢体和躯干的骨骼肌直接联系，EB 与内脏器官直接联系，而中间脑则与 SB、EB 和 BB 直接联系。

M_{13} 的各个脑皆由遗传记忆和获得记忆组成。每个心灵脑皆有自己独有的获得记忆，以及与其它心灵脑共有的获得记忆。这共有的获得记忆又可以称为中心记忆或 CM。作为获得记忆，CM 中没有 SB、EB 和 BB 的获得记忆与其各自遗传记忆之间的那种直接联系。换句话说就是，在 CM 中并没有作为感受质基础的那些心灵结构。

六个心灵脑的二分，再加上 CM 这一分，共为 M_{13} 的十三分。

作为一个秋生命，作为一个动态的过程，人的心灵并非始终都可以一分十三，但只有在这十三维度的基础上，我们才有可能理解人的心灵，理解人的意识、智慧和语言，特别是呈现在心灵中的那些感受质。

作为这十三分的遗传记忆与获得记忆，都同样是心灵的结构，或心灵中的绝对物质，或 EME 系统关系中的那个 M。一切记忆都是秋生命的产物，只不过，人脑中的遗传记忆来自以人的基因组为基础的秋生命活动，而获得记忆来自以个人为基础的秋生命活动。

在心灵或生命中没有什么实体，既没有什么作为主体的实体，也没有什么作为客体的实体。除了那个 M 之外，在 M_{13} 中还能找到的就只有一个 E 和两种不同的生命。不仅在心灵中如此，在整个宇宙中能找到的亦只此三者而已。如果 M_{13} 能解释人的意识、智慧和语言，那么，这解释便只可能藏在这 M，E 和生命之中或之间。

M_{13} 的十三分并不改变心灵中诸生命之间的系统关系。既然心灵是身体的主要 EME 系统关系，那么 EME 系统关系中的 E，M 和两种生命，就是意识、智慧和语言的主要解释。

这三者之中，一个 E 与其它任何 E 之间实在没有什么不同，一个秋或春生命与其它秋或春生命之间亦没有什么不同，唯一不断变化着的，唯一既可以是遗传的又可以是获得的，就只有这个 M。换句话说就是：在这三者之中，只有 M 是智慧唯一可能的解释，无论这 M 是遗传记忆还是获得记忆。

与笛卡尔所说的⁽¹²⁾正好相反，在我看来，这世上并没有什么无广延的智慧，也没有什么无智慧的广延。细胞的一切结构皆为智慧，生物体的一切结构皆为智慧，生物圈的一切结构皆为智慧，宇宙的一切结构皆为智慧， M_{13} 的这十三分亦同样如此。特别是 EME 系统关系中的那个 M，作为 M_{13} 中的记忆，作为心灵的结构，**一切 M 就是一切智慧。**

无论是在人的心灵之内还是之外，无论大小多少，所谓“智能”不过就是，在 EME 系统关系中，以结构来超越过程的那种能力。在种种生物行为中，一切生而知之的都是遗传结构对后天过程的超越，而一切学而知之的则都是获得结构对未来过程的超越。换句话说，智能不过就是，EME 系统以其自身的复杂性来对抗其环境的不确定性的能力。再或者说，**以空间上的复杂性来应对时间上的不确定性，是一切系统的智慧本性。**

顺便说一句，这个不确定性其实也是语言的本性，因此，EME 系统关系中 M 的复杂性很可能与语义学一直还在寻找着的那个语义的奥秘有关。

虽然 M_{13} 的概括能力不如 OC，却能更好地解释智慧，就是因为它比 OC 更复杂。

由于不具有等于或高于 M_{13} 的那种复杂性，所以量子力学无法成为解释人的意识和智慧的最佳语言系统。⁽¹³⁾

系统的复杂性与实体的简单性互不相容，因此，在 EME 系统的 M 或种种记忆的复杂性中，既没有任何个体、整体、主体或客体的代表，也没有任何变化过程的代表。对心灵来说，无论是自我还是自我所面对的那个世界，一切个体、整体、主体或客体都不过是些语言，而绝非语义。仔细想一想 DNA 与基因的关系，对此应不难理解。

如此，遗传结构就是遗传智慧而获得结构则是获得智慧。越智慧的脑，其 EME 系统关系会越复杂，其对环境变化的反应会越复杂，会同时涉及到脑中越多不同的部分、层次、结构和连接，会同时在不同部分中发挥越不相同的作用，会在不同部分之间形成越多不同形式的循环往复，甚至会以不同形式超越脑和自身，通过他人或事物来循环往复。换句话

说，如果人工智能可以为简单的算数所创造，那么，创造人类智能的至少也是一种复杂的几何。

“分而治之”作为智能的基本原理，至少已经在我们对“裂脑人”的研究中得到了证实。这并非仅仅只是人脑的原理，亦同样是一切生物智能的原理，是一切社会智能的原理，是一切人工智能的一个基本原理。

一切生物，皆具有记忆，因而皆具有智慧。如果人与其它生物不同，只不过是，在人心灵中更多的是获得记忆或获得智慧；只不过是，构成人生存环境的更多是获得记忆或获得智慧。人所创造的一切智能机器都不过是我们的获得智慧，因此，它或它们的所作所为、生死存亡，永远与某人、某些人或所有人的遗传智慧相互依存。

其实遗传记忆与获得记忆并没有什么根本不同。在宇宙演化的全过程中，在一切生命由生向死的过程之中，在人生的全部过程之中，任何特定的智慧都只随着特定结构的出现而出现，又都随着特定结构的消逝而消逝，仅此而已。

无论是婴儿期遗忘 (infantile amnesia) 还是儿童期遗忘 (childhood amnesia)，其实都不是什么遗忘，其实都不过是一种成长，不过是人脑与电脑不同的证明，不过是心灵与生命同一的证明。

在人的心灵中，EME 系统关系中作为 M 的遗传记忆决定着系统的遗传性行为，而作为 M 的获得记忆则决定系统的获得性行为。心灵哲学所谓的“感受质”，说的就是这样一种遗传性行为或遗传性智慧，而语言哲学所谓的“语义”，说的则是这样一种获得性行为或获得性智慧。

构成不同心灵的各个脑的遗传记忆和获得记忆不尽相同，因此，在感知、情绪、行为或语言上，没有一个心灵与另外一个心灵完全相同。这种种不同，个体性的不同，社会性的不同，生物圈结构上的多样性，同样是生物系统以其复杂性来应对系统环境不确定性的能力。因而，这种差异，这种多样性，在生物学上意义重大，在进化论上意义重大。一个好的团队，不过是一个更好地成就了同一个生命的不同心灵的组合，一个好的社会或一个好的生物圈亦然。

生命的智慧本性或智慧的生命本性，是一切道德和社会信念的本质或内核。无论是自由、平等还是博爱，都应该以对人与人之间差异的尊重为基础，以对生命与生命之间差异的尊重为基础。既不同于苏格拉底的知识道德观也不同于康德的天性道德观，作为社会性智慧而存在着的道德，应该既是遗传的也是获得的。

据说，近三千年来，人脑的体积不增反减。⁽¹⁴⁾ 若果真如此，那应该是脑的一种获得性变化，应该是由于社会生活复杂性的增加和个人生活复杂性的下降所致，是环境智慧与人类智慧的统一，是社会智慧与个人智慧的统一。由此可见，要求小孩子们德智体全面发展，将使他们一辈子获益无穷，将使整个社会获益无穷。无论是太幸福还是太痛苦的童年，都是太简单的童年，而一切太简单的童年都是社会最大的隐患。

如果唯理论是对心灵的解释，那么心灵中便应该只有遗传智慧。如果经验论是对心灵的解释，那么心灵中便应该只有获得智慧。如果遗传记忆是康德所谓的“先天知识”而获得记忆是其“后天知识”，那么康德的认识论便仅仅只是对人心灵更好的解释，还不是对心灵更好的解释。

生命，也只有生命，才是康德的物自体，而物质和能量都不过是语言。因此，**生命不能被知道，只能被理解。**

记忆，无论是遗传记忆还是获得记忆，只有当其在 EME 系统关系的秋生命变化中与语言相遇或在春生命变化中与语言相分时，才有可能由智慧变为智能，或者说，由工具变为工作。这是心灵与生命同一的又一个证明。

OC 的十三分意味交换和交流的必需与必然。任何生命可以与其它任何生命交换或交流。这是心灵与生命同一的又一证明。

在各个心灵脑之间，在 M_{13} 与人体其它部分之间，在 M_{13} 与人体所处环境之间，存在着对绝对能量或绝对物质的输入或输出。这种输入或输出，如果是通过 EME 系统关系进行的，又可称之为对话活动。E 或绝对能量是通过 EME 系统关系进行对话时所使用的唯一语言，不妨称之为 E 语言。只有当 E 语言在 EME 系统关系的生命变化中与记忆相遇或相别时，智慧才得以发挥为智能。

一切 E 语言或使用 E 语言的对话活动，皆以某种程度上的和特定范围内的觉醒状态为基础。

睡眠和觉醒是一切拥有身心关系的生物系统的最基本生命活动。

尽管人们能在脑中找到这种或那种原因，但在我看来，觉醒与睡眠的循环交替依然可以理解为特定系统整体状态的变化，而且可以把系统的这种整体状态的变化理解为一个卡诺循环。作为卡诺循环，睡眠并非系统活动的终止，而是活动方向的整体性逆转，是停止向这个方向做某件事，是转而向相反的方向去做这件事。这也许就是为什么有些动物的睡眠极短，有些却可以在整个冬天里一直酣睡不醒。

卡诺循环不仅可以是一种整体性状态变化，亦可以是人体中许多系统、器官、组织和细胞的局部性状态变化。例如，尽管仅仅持续 250 毫秒，心肌的不应期便是心肌细胞们的一次睡眠，而位于两个不应期之间的它们则处于觉醒状态。心肌的动作电位则可以被理解作为一种对话活动，或在对话活动中使用的 E 语言。它们在觉醒状态下的对话活动可以称之为心肌细胞们的意识。心肌细胞们的意识与人脑的任何意识，在本体论上并没有一丝一毫的不同。

意识是特定状态变化与特定过程变化的统一，是生物体中普遍的存在。人体中横纹肌的随意动作亦是这状态变化与过程变化的统一。其中的过程变化为锥体系所控制，而状态变化则为锥体外系所控制，而两种变化的统一则可以被理解为横纹肌的意识。人脑中的意识与横纹肌中的意识，在本体论上，并没有任何不同。^(15, 16) 这也就是为什么，最深的睡眠表现为骨骼肌最高程度的松弛。

一切意识中的状态变化都是 MEM 系统关系中的变化，而其中的过程变化都是 EME 系统关系中的变化。

可以定义说：当心灵是其身体最重要的 EME 系统关系而身体是其心灵最重要的 MEM 系统关系时，我们的意识就是那个 MEM 系统的觉醒状态与这个 EME 系统中诸过程变化的统一。通过头皮电极所测得的不同生物电变化，固然反映了觉醒与睡眠的状态性变化，但从中亦应该也有可能分辨出心灵各个脑之间对话交流的过程变化。

我们的中枢神经系统由许多亚系统组成。从大脑的新皮层下至脊髓，越低的亚系统拥有越少的获得记忆。与我们的意识相关的是那个拥有 M_{13} 中大多数获得记忆的，特别是 CM 中那些获得记忆的亚系统。

千万不要误解，千万不要将我们的意识误以为是唯一作为意识的意识。其实，无论是在生物界之外还是之内，无论是在同一个身体之中还是在同一个脑之中，都同样可以找到无限无量无数 MEM 状态与 EME 过程之统一。换句话说，所谓我们的意识，不过是我们体内或脑内众多意识之一，如此而已，仅此而已。

也不应误以为，脑的意识一定以单一神经元的状态与过程为基础。也许，一个脑区中的细胞可以是一个具有拓扑连续

性的膜或体，意识的状态和过程也可以是这个连续的膜或体上的整体性变化，可以是超越个体神经元的变化。如果确实如此，那么其中单一神经元的贡献便不是不可或缺的。至少，作为意识组成部分的那个觉醒状态，便既可以大至全脑，也可以小至一个脑区，大小不一，程度不同，且变化不已。无论是醒时的意识还是梦中的意识，都同样是一个脑区之内或部分脑区之间 E 语言的交流，只不过基于了不同程度和不同范围的觉醒。也许是觉醒程度与范围的某种异常，而非所交流的语言或交流过程的异常，才是精神病人种种病态意识的基础。

心肌细胞们的意识，横纹肌细胞们的意识，与人脑的意识在本质上虽无不同，但在形式上，特别是在对话活动中所使用语言的形式上，却完全不同。一切通过 EME 系统关系进行的对话，在本质上都没有什么不同，使用的都是 E 语言，但在 E 语言的形式上却可以千差万别。

心灵语言在形式上的这种不同又被称之为“感受质”或“quale”⁽¹⁷⁾。感受质之不同，不是 E 本身之不同，而是 M 之不同，是 EME 系统之不同，是其感受器之不同，是其效应器之不同，特别是其中那些遗传记忆的不同，是不同心灵所拥有的遗传性智慧之不同。任何感受质都仅仅只可能因 EME 系统关系中特定结构之存在而存在，又仅仅只可能因其中特定生命之存在而有用。

人脑之所以有自己的那些感受质，无非是为了便于自己的那些遗传智慧与获得智慧能彼此交流、相互对话。

所以，对人来说，美之为美，或丑之为丑，与大自然本身毫无关系，而仅仅与心灵有关，仅仅与 M_{13} 的结构有关，特别是与 SB 中的遗传记忆有关。

感受质是一种普遍性的存在。一个电子流经导体的不同结构时，或该导体在超导态和非超导态之间转换时，可以表现为不同的感受质。同样，E 语言经过不同心灵结构时，亦可以表现为不同的感受质。特定感受质在心灵中的出现，遵循着能量守恒定律，只是 EME 系统关系三种变化中的位置变化或形式变化，还不是生命变化。

作为自然选择的结果，任何一种生物都拥有某种和某些感受质，甚至是为自己所独有的感受质，是自己那些独一无二的生物行为的基础。⁽¹⁸⁾ 其实，这世界上，并没有什么感受质不能通过对感受器，中间处理系统和效应器的结构的创造来创造。创造一种独特的感受质不过是为特定的 EME 系统关系创造了一种特定的语言形式。⁽¹⁹⁾

量子叠加态的坍缩固然可以被理解为一种感受质，但绝不等同于人脑中的那些感受质，否则人脑就不应该具有那些维度高于 M_{13} 的结构。

M_{13} 中的一切对话活动都由通过 MEM 系统关系的状态性变化和通过 EME 系统关系的过程性变化组成。其中，诸如视、听、味、嗅、触觉等对身体外环境的种种感觉，其实都是 SB 与 CM 之间的过程变化，而种种情绪变化，包括所谓的“直觉”，则是 EB 与 CM 之间的状态性变化。一切感觉，其实都是交流，其实都不是什么被感受到的东西。

这也就是说，一个心灵，无论是在对自己还是在对其它心灵言说时，一个大脑，无论是在对自己还是在对身体或其它大脑言说时，总是同时使用着两种语言，总是同时在通过 EME 系统关系和 MEM 系统关系进行着交流。

EME 系统关系中那个位于 M 之前的 E 的输入，会使系统处于一种盈余的状态， M_{13} 期待着某种输出。而那个位于 M 之后的 E 的输出，会使系统处于一种亏欠的状态， M_{13} 期待着某种输入。我们一切可见可闻的行为或言说，皆以这盈余或亏欠为其前因或后果。在这输出与输入的循环往复中，M 之前与之后的那个 E 之间的自洽和圆满是我们幸福感的来

源，反之则是我们痛苦感的来源。无论是这幸福还是那痛苦，都依然还只是语言而非语义。

所谓“思”或“想”，不过是一种自言自语，不过是不同心灵脑之间的对话，不过是由 CM 到各个心灵脑的遗传部分又再返回 CM 的一个个循环往复，不过是在其中变化着的记忆和感受质。有多少或哪些记忆可能会涉及到具体的一思一想，并无一定，既无法一定也无需一定，多可以成其一思，少亦可以成其一思。人脑与电脑之不同，由此可见其一般。而所谓的“抽象思维”和“形象思维”，只不过是这对话所使用的两种不同语言形式。

语言是行为，行为亦是语言，都是位置变化或/和形式变化。但同一句话总不能同时既对自己又对别人说，所以，心灵的自言自语往往不可能同时又成为人体的所作所为。不过也确实有些人，他们需要通过自己嘴和耳朵，或者自己的手与眼睛，来与自己交流，但这是另外一回事，亦应另当别论。

行为主义者们以行为来否认意识的存在，其实不过是对行为本身的无知无识。⁽²⁰⁾

一切发生于 EME 系统关系中的形式变化和位置变化，一切能通过 EME 系统关系被系统输入或输出的，都是语言。心灵的语言与非心灵的语言，无论是作为绝对物质还是作为绝对能量，彼此之间并没有什么根本不同。在 EME 系统关系中，一切既不发生形式变化也不发生位置变化，并且不能通过 EME 系统关系被系统输入或输出的则都是记忆。无论是记忆还是语言都不含语义。一切绝对物质或绝对能量都不过是记忆或语言，因而都不含语义，或者说，都不含信息。

所谓语义，所谓信息，不过是交流的前因或后果，绝非交流本身，绝非语言本身，亦绝非感受质本身。

在 M_{13} 中只有三种不同的东西。其中的记忆不可能被系统输入或输出。其中的语言固然可以被输入或输出，但又只发生位置变化或/和形式变化，而一切位置变化或/和形式变化都只是信道中的变化，因而既不是前因也不是后果。既然一切 E 或 M 都不可能是交流的前因或后果，那么，在 M_{13} 中便只有生命变化方才是语义。换句话说就是：**一切能量或物质都只是语言或记忆，只有生命变化才是语义或信息。**

语言和语义不是同一回事，被交流的绝对物质或绝对能量与生命不是同一回事，否则 M_{13} 的复杂性就没有任何必要，否则 EME 系统关系中的生命就没有任何必要。由此可见，无论是对意识、情绪、行为，还是对语言的分析，都绝非就是对语义本身的分析。

通过对语词的分析，对用词遣句的分析，我们并不能获得语义，而只能给予语义。说“给予语义”，也就等于是在说“一切语义皆为生命变化”。

“ $1+1=2$ ”不过是语言，“ $A=A$ ”亦然。两者都是无生命的东西，因而都只可能发生位置变化与形式变化。然而它们的语义却是生命变化，必须发生于特定心灵中，必须发生于特定 EME 系统关系中。这是心灵与生命同一的又一证明。

我们可以用绝对物质来观察绝对能量，也可以用绝对能量来测试绝对物质，从而得到种种不同的感受质⁽²¹⁾，但却无法用这些方法来观察或测试生命。换句话说，生命变化是无法用绝对能量或绝对物质来指称或指代的。⁽²²⁾再换句话说就是：**语义不可知，但却可以创造。**

遗传记忆在结构上的差异，是对感受质私密性的根本解释。而获得记忆在结构上的差异，则是对每个人的那个“大千世界”和那个“唯一自我”的私密性的根本解释。**每个心灵的私密性都同时既是遗传的又是获得的。**

不仅每个人有各自不同的世界和自我，其它生物亦然。种种不同的世界与自我并非就是种种幻觉或错觉，甚至那根本就不是什么“觉”或什么“自我意识”。它们既是系统真实性的证明，也是系统现实性的证明。一切生物行为，一切人的行为，皆因其系统的特性而合情合理。所谓“我们共同的那个世界”，不过是一些人的世界的重合部分。说存在着一个独立于一个人或所有人的世界，不过是说这个人或所有人的存在可以不是世界存在的一部分。

每个人的那个“大千世界”都源于感觉脑对 CM 的言说，而那个“唯一自我”则源于情绪脑对 CM 的言说。然而无论是那世界还是这自我，都不存在于我们遗传记忆或获得记忆中。记忆不是任何人或任何事在我们心灵中的复制，甚至不是任何人或任何事在我们心灵中的代表。他们或它们固然可以被 E 所言说，但并不因此而被 M 所保存，因为无论是语言还是记忆都不含语义。

当作为心灵语言的中心语义时，CM 也同样是生命，既可以是一个春生命，也可以是一个秋生命，可以在此一时是春生命而在彼一时又是秋生命。当 CM 是秋生命时，它是其所消耗的那些绝对能量的语义，同时亦是其所创造的那些绝对物质的语义。当 CM 是春生命时则恰恰相反。这也就是说，CM 中的生命不仅是 BB 所言所说的唯一语义，亦是 SB 所言所说的唯一语义。

对话发生于生命与生命之间。因为生命不可能被传递，所以，无论是在心灵的内部还是内外之间，任何对话都只在传递语言而不传递语义，而不传递语义的对话不仅能提高也同样能降低对话中各个生命或心灵的确定性。这也许就是为什么，言者的同一句话会在不同听者心中生成不同语义的道理。

言者一句话，闻者种种心。可以预料，本文中的言说亦一定会在不同读者心中生成极为不同的语义。

笛卡尔说：“我思，故我在”， M_{13} 却可以证明，思之为思，并无须有待于一个“我”之存在。所谓的主体与客体之分，自我与非我之分，人与世界之分，不过是些语词之分、语言之分，皆非语义之分。在胡塞尔的现象学与海德格尔的存在论中，同样含有对心灵的误解，或者误将作为语言的意识当成了语义，或者误将作为语言的“此在”当成了语义。黑格尔所谓的绝对理念对自己的“反思”亦同样如此，不过是误将种种语言当成了同一个语义。

阳明先生若有知，当会叹曰：**嗟乎！无识于生命者，何以言存在？**

值得注意的是，其实，人的心灵并不是个一言堂，而是一个众说纷纭、群雄争霸的话语战场。与哲学家兼心理学家的威廉·詹姆士在其《心理学原理》一书⁽²³⁾中所说的不同，在心灵中并没有什么单一、连续的“意识流”，有的只是生生死死，以及一段段此起彼伏，来源不尽相同的言说。

心灵与生命同一论意味着，无论是在人的心灵之内还是之外，到处都一样，都同样是达尔文的世界，生命都同样受着自然选择的支配。只有理解了这一点，才有可能理解脑，理解人的心灵，理解一切心灵和一切生命，特别是，**理解特定言说在心灵中的呈现或不呈现。**

不过，在我看来，对生命做出选择的并不是达尔文所说的“自然”而是种种不同的系统。一切生命都受其所在的那个系统的选择。换句话说，**一切语义的生死存亡都受语言和记忆的共同选择。**

系统选择生命，生命也选择系统，并且创造系统。无论是这选择还是这创造，又都遵循着一个特定的方向，一个由 OC 的那个 C 决定了的方向：无论是一个人还是全体人类，包括万物和宇宙在内，一切系统，系统的一切结构，都必须

沿着一个特定的方向发展，沿着遗传记忆先于获得记忆、遗传记忆之间的获得记忆先于获得记忆之间的获得记忆的方向发展。这个方向，这个由绝对能量向绝对物质的不可逆变化，又是一切秋生命共同的**意志**。

意志是对自由的限制，是**在前的智慧对在后智慧之自由的限制**，是原因与结果之间的必然联系。这应该就是人童年经历影响其成年行为的根本原因，应该是特定环境影响特定的一些生物或一些人的群体行为的根本原因，亦应该是我们置身于其中的这个宇宙本身在现在之一切行为的根本原因。

最后再多解释一句：心灵之所以难以被理解，意识和智能之所以难以被理解，之所以难以被绝大多数人所理解，在最根本上，是由于我们对于 OC 中的那个 O 的难舍难分、执着追求。其实“自我”并不是一个 O，“人生”亦不为一个 O。无论是身体还是脑，无论是意识、智慧还是记忆，皆无以为 O。一切他人，世间万物，莫不如此。那个 O，对我们来说，对任何生命来说，其实都是死路一条。

人之为人，心之为心，不过是，在同一个方向上，刹那间无数的生生死死。庄子说得透彻：“方生方死，方死方生，方可方不可，方不可方可”。对于生死，正如释迦摩尼在金刚经中所说：“应无所住而生其心”。

在秋生命共同的那条大道上，心灵既是被创造的，也在不断地创造着。

创造就是生，亦同样是死。

也许，**对生命来说，创造就是一切，其它的都不那么重要。**

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