

Paper Title: On Mind-Body Problem: From a Natural Point of View

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Abstract:

To define mental events as perceptions from an internal point of view and physical events as perceptions from an external point of view, and to walk along the fine line between the mental and the physical, the author develops a perception dualism, which explains some long-persisting ontological issues in philosophy of mind, such as the mind-body relation, the psycho-physical interaction, and the clash between free will and natural necessity. It also recovers some of the observations and conclusions achieved by Descartes and Leibniz. Perception is the most essential feature of mind. While defining mental/physical events in terms of perceptions, the author also developed a theory of perception, and an argument for the reality of spirituality.

Bio:

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Paper Text:

Human concern about soul started at the dawn of almost every civilization on this Planet. Philosophical inquiry into human mind began no later than Socrates as presented in Plato's writings. Descartes formulated the mind-body problem and developed the most influential theory of mind. Modern thinkers like Hobbes, Leibniz, Spinoza, Locke, Berkeley, Hume, Kant, etc., developed their theories with Cartesian dualism as the reference in their mind. In 20th century, philosophy of mind is a domain of active discussion. A lot of interesting theories and practical models about mind have been developed. However, the central ontological issues, which are crucial to our understanding of human mentality, remain unsolved.

The fatal difficulty with Descartes' dualism is that, if the physical and the mental are two different kinds of substances, the physical takes up space, the mental does not, as Descartes said, how are they causally related? This is the major reason for Cartesian

substance dualism to be out of fashion in the last 100 years. Most philosophers in our time advocate some form of Monism (Physicalism, Materialism, Mind-Body Identity Theory, Functionalism, Eliminativism, etc.) or Behaviorism. The remaining question is, if the mental and the physical are identical, the mental is not a separate entity as monists maintain, how can we explain the reality and causal efficacy of the mental phenomenon that is an obvious observation from everyone of us?

Though Cartesian dualism is out of fashion, some weak variations of dualism are still espoused by a few philosophers in our time. Donald Davidson(3, 4) proposed a property dualism. Davidson employed “supervenience” to describe the relation or distinction between mental property and physical property. The distinction between the mental and the physical is also defined in terms of “predicate” and “characteristics”. Ontologically, Davidson is a monist since he also advocates a token identity between mental event and physical event. Davidson did talk about "psychophysical causation". But the causation cannot happen between his mental event and physical event, because they are identical, that is, they are one and the same thing. However, his “property”, “characteristics”, or “predicate” are something short of being a causal agent. Only an event can have causal efficacy. Davidson failed to explain why one property is mental, is it because that it is a property of a mental event or that it is described by a mental term. If that is the case, we need to explain why an event is mental or why a term is a mental term. There are a lot of ambiguities and self-conflict in Davidson’s works. Among his critics, Jaegwon Kim stands out. Kim, trying to figure out a clear notion, defines supervenience as a mereological (part-whole) relation.(5) However, a mereological relation best describes the hierarchical structure of the physical world. Both relata are physical. I would like to reserve the word “supervenience” to label the part-whole relation, and adopt a new word, “simultaniance”, to describe the very psycho-physical distinction. I believe the mental-physical distinction is more substantial than as defined in terms of property by Davidson. And pace monists, the mental is something real and it has causal efficacy.

In this paper I am going to define from the start what mental events are and what physical events are, thus to define a new relation between the mental and the physical. To explore the full potential of the definition, I will apply it to tackle two of the persisting issues in philosophy of mind: 1) I will explain the phenomena of the psycho-physical interaction; 2) based on the assumption that the operation of brain is deterministic, I will resolve the conflict between free will and natural necessity. On the way of discussion I will address briefly how human minds are originated, by evolution or by emergence? What are the criteria for us to judge whether a creature or a computer has a mind? Is human mental state private or not? Because all those issues are intertwined with each other and are indispensable parts of the mind-body problem. We will find that I actually developed a perception dualism that will recover some of the theses in Descartes’ substance dualism and Leibniz’s parallelism.

1. The Privacy Thesis

It has long been held among philosophers that, mental state is private by nature. You cannot know other people’s mind with certainty. Basically we get to know other’s mind by observing their external behaviors (language, body and face expression, gesture, etc.).

Human beings are highly intelligent. A man can hide his mental state from any face or body expression. He can lie about what he is thinking. I am afraid this thesis is facing some challenge now. Since the 1960s, we have developed polygraph that can tell if a person is telling a lie or not. Nowadays, with further improvements, this kind of instruments have been widely employed, e.g., in hiring, even in court as a minor reference for legal judgment. The further progress in Neuroscience also leads to more and more advanced brain scanner (CAT, MRI, PET, fMRI, MEG...), (1) which can tell why one person is good in mathematics, while the other person is good in arts. It can also tell if a person is happy or sad, angry or grateful, in pain or with pleasure. Perhaps in future, it can even tell, e.g., in an auction, how strong is his desire for that Zeiss Planar 85/1.4 lens and what is the highest price he is willing to pay for the lens in that condition.

Will the progress lead to a subversion of the Privacy Thesis? I believe not. However, the thesis is facing revision. Yes, you can know other people's mind, but mental perceptions are still private by nature. Because, by instrument, you can detect certain form of neural firings in a brain and monitor its operation. But what you detect is a physical event. You only KNOW he is in pain; you cannot FEEL his pain as a mental event. Mental event and physical event are not identical.

What is the difference between a physical event and a mental event? A physical event is what we observed from an external point of view. It is public to all of us. A mental event is what he perceived from an internal point of view by himself. It is private by nature.

How can we know that he has an internal point of view and, more specifically, that he is in pain? Actually we have no direct reliable means. The best we can get is an indirect unreliable means, i.e., by observing the patterns of neural firings and blood circulation in certain district of the brain, and the mapping between mental events and neural events accumulated in the past. The mapping is not reliable since there is some kind of plasticity in the human brain. Brain surgery has proved that, after the removal of one hemisphere, some of its functions can be recovered in the other hemisphere. This is so-called "multiple-realization" phenomenon. Therefore there is no general psycho-physical law to support this kind of mapping. It turns out that, the only thing I know for sure directly is that I have an internal point of view and I am in pain at the moment.

According to Descartes, the knowledge I can have with highest assurance is the knowledge that I think therefore I am (*cogito, ergo sum*). (6) All my other knowledge is based on this. What Descartes means here is the priority of the internal perception and the reality of self-consciousness. Though the Cartesian dualist theory of mind is out of fashion, Descartes' philosophical project as a whole has significant influence in the context of Modern Philosophy. His motive is to defy skepticism in human knowledge and Christian faith. However, to that end, Descartes examined the foundation of knowledge by his hyperbolic doubt. The only thing he found indubitable is the existence of himself. From there, he can re-construct a system of knowledge on a new certain foundation. People usually believe that Cartesian egocentric approach and the emphasis on the internal perception set up a philosophical tradition that has a propensity to solipsism. I believe Descartes spells out a fundamental truth about human mental phenomena and sets

up the foundation for a kind of internalism which does not necessarily lead to solipsism as I will show later in the paper.

So we come to a more accurate expression: a mental event is what I perceived from my internal point of view. It is accessible to myself only through an internal point of view. If I perceive the operation of my brain from an external point of view using a brain scanner, what I perceive is no longer a mental but a physical event.

Are mental event and physical event really two distinct events or simply the one and the same thing? Are they just two sides of the same coin? Here the underlying question is whether a difference in perceptions is a sufficient reason for two different kinds of existence or two different worlds. Since we usually believe that things exist by themselves, no matter if we perceive them or not, and how we perceive them. Perception is something epistemological, not something ontological. I am afraid this notion of perception is only true of external physical objects. For situations in internal world, to perceive is the most essential feature of self-consciousness, the existence of mental event depends on the perception from internal point of view. Perception is not a feature of the physical; it belongs to the mental. If we deny the existence of the mental, perception will be totally impossible. If we plan to admit the existence of the mental and to understand its relation to the physical, we have to start with perception.

I think the "coin" analogy does not hold. Mental event and physical event are not two sides of a coin. When I see a coin from two opposite perspectives, both perspectives are external. They are the same in nature. The difference between internal perspective and external perspective is more substantial than the difference between two external perspectives. Roughly speaking, you can regard the mental event and the physical event as one and the same event. Strictly speaking, they are two distinct events belonging to two different worlds (More detailed arguments will follow). As we know, a stone can only be perceived from one kind of perspectives; whereas a brain can have two kinds of perspectives. The internal point of view is what a brain has but a stone does not. If we deny the internal point of view and the reality of mental event, a brain would be the same as a stone in terms of perceptions.

2. The Mental vs. The Physical

Is internal perception, in some sense, a weaker perception than external perception? Strictly speaking, there is no independent external point of view; there is no independent external perception. All of my knowledge is from my internal perception. When we talk about external perception, we are talking about my internal perception of the external objects coming into my brain as sense data. External perception becomes possible only after it goes through internal perception. It is my internal perception that makes external perception possible. External perception is actually only a part of one kind of internal perception.

As shown on the mind-body diagram, my internal perception can be either sense data representing something from the external world, or pure mental events, e.g., my will and my decision, which are caused by sense data within my mind. We employ the concept of

external perception only for the part of the first kind of internal perception before it comes into my mind. Of course, that external object can be my brain: its neural event for sense data and neural event for will and decision. I can perceive the neural event in my brain from my internal point of view as a mental event. I can also observe the operation of my brain through a brain scanner, by watching the changing pattern on the screen of the scanner. The pattern finally comes into my mind as a mental representation of a physical event. Internal perception is an immediate direct perception. External perception is an indirect observation. Here the concept of perception is more general than the conventional usage of the word, which is actually the first kind of perception in my context. The second kind of perception might be called introspection.

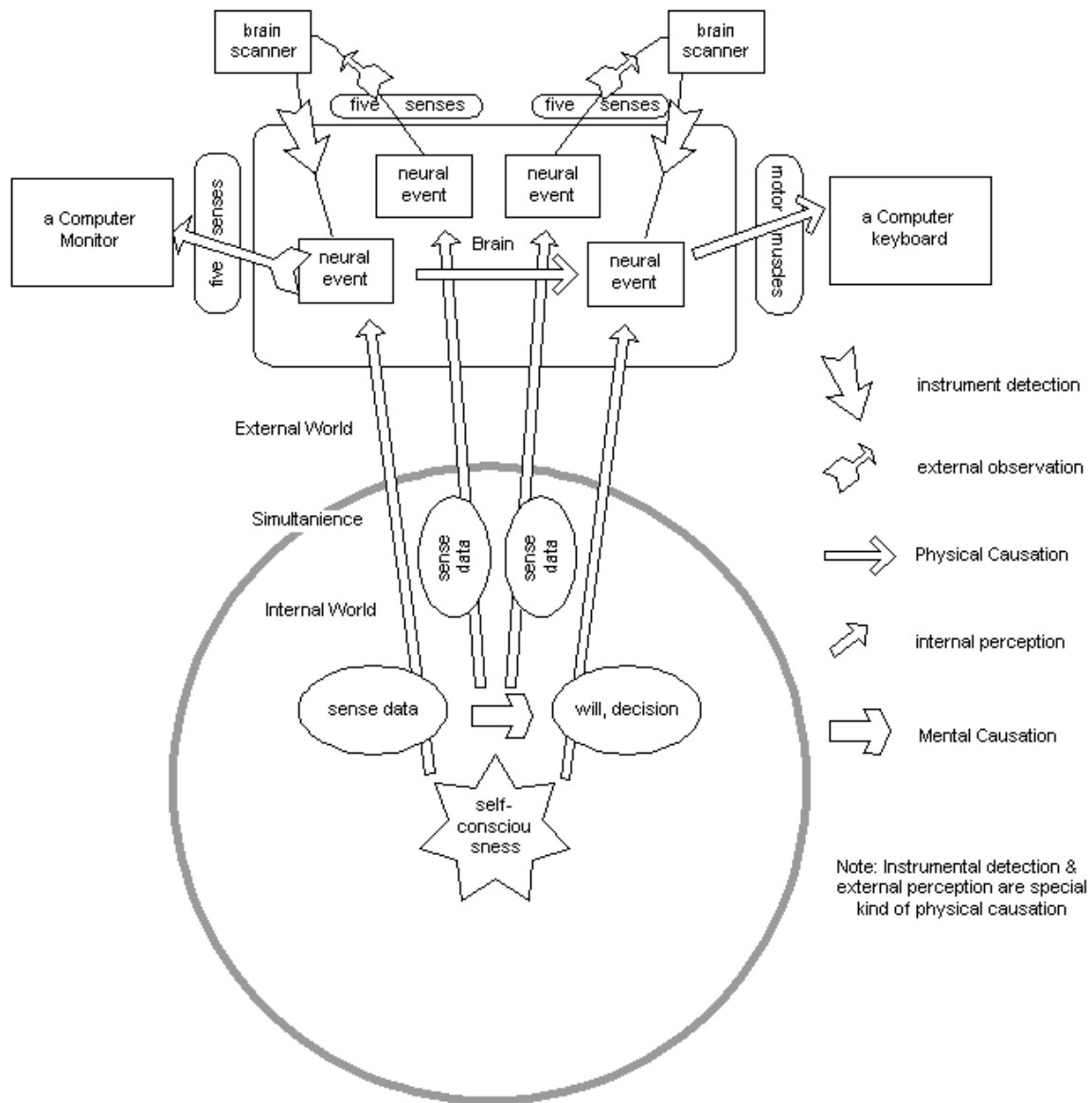


Diagram: The Mind-Body Relation.

If internal perception, as an immediate direct perception, is more fundamental than external perception, can we say that, mental event is a stronger existence than physical event in some ontological sense? A positive answer would be either a support to, or supported by, George Berkeley's immaterialism. According to Berkeley's profound statements, "To be, said of the object, means to be perceived. ... To be, said of subject, means to perceive", (7) not only did he grant a high priority to the internal perception, he almost came to a denial of the mind-independent existence of the external world. If Berkeley lived in our time, driving on the Autobahn at a speed of 160 km/h, would he still have any hint of suspicion about the existence of the external world outside his car? Would he still think that the car in his blind spot does not exist when he plans to change the lanes? Well, do not ridicule the priest and come to a conclusion too fast. For John Nash of Princeton, some external objects do not exist even when he is perceiving them. (8) Actually Berkeley revealed a logical gap between the internal world and the external world, that is, the self, i.e., the subject of knowledge, which is isolated by internal point of view, can never logically prove the existence of the external objects. Of course, for most of us, counting pros and cons, if we want a coherent account of what we perceived, what we are perceiving and what we are going to perceive, it is better to take a logical leap and assert the existence of the external world as well as the existence of the internal world. This is what most ordinary people have done. For them, an apple is simply an apple, not Berkeley's "bundle of ideas". We are not supposed to deny the source of the stimuli that constantly generate our ideas.

Berkeley is the first philosopher to define existence in terms of perception. Here is my echo to George: To be, said of self-consciousness, is to perceive; To be, said of a mental event, is what I perceived from an internal point of view and is mind-dependent; To be, said of a physical event, is what can be perceived from an external point of view; however, it is mind-independent, it can exist on its own right.

Though internal perception is immediate and direct, external perception does have its own advantage: An object from external perception can be equally and constantly accessible to multiple individuals. Assuming the possibility of communication between individual minds, people can assure each other with their own perceptions. This is why the public objective external observation is scientists' favorite ground on which to build theories. Internal perception, when the subject goes into sleep, becomes interrupted or turns into a stream of intermittent being. Thanks to the faculty of memory, when I wake up, a constant internal perception can be recovered. I know immediately who I am and where I was before the sleep.

The external world exists out there for every one to perceive; the internal world exists only for me for the moment. However, everyone has a direct access to his internal world, but only has an indirect access to the external world. The external world is a physical and objective reality. The internal world is a mental and subjective reality. Internal perception makes us subjective by nature. External perception helps us to be more objective. We are absolutely subjective, relatively objective. I am not going to compare between internal point of view and external point of view, which one is superior; or to compare between mental event and physical event, which one is a more fundamental existence. They are

not comparable by nature. Using Thomas Kuhn's term, they are incommensurable. (9) Perhaps I should add, they are even more incommensurable than Kuhn's original thesis of incommensurability.

3. Simultanience

What is the relationship between a mental event and a physical event? The physical event here I am talking about is not the whole external world. The external world is vast and multifarious. I only have access to a small portion of it. But that is still not what I mean. By "physical events" here I mean neural events in human brain, which became accessible to us via external perception due to the recent progress in Neuroscience. Neural events can be the neural realization of sense data about external objects; they can also be the neural realization of the pure mental events, which are not about the external world. Neural events can be perceived both from external point of view and from internal point of view. Other physical events can only be perceived from external point of view.

I would like to coin a new term, "simultanience", to designate the relationship, since "supervenience" has been employed for the relation like the one between a chair and its wood beams. It is relatively easy to choose or coin a term. It proved to be much more difficult to describe and define the relationship. Though we have made a lot of progress in Neuroscience, the internal mental world remains in a dark area behind the torchlight. Our knowledge about the external world is much more enriched than our knowledge about the internal world. Each one of us has direct and immediate access to our own mental world, but we have few concepts, notions or vocabularies about it. The torchlight cannot illuminate itself. To make even a very simple description, I found I have to borrow concepts from the physical world. We really need to stretch our language if we want to make any description. This kind of attempt, no matter how tentative, risky and fragile, is still worthy if we want to explore the dark, subjective internal world. I will try my best to keep my talking healthy.

Do mental events exist in some kind of "space" and "time" as physical events do? I believe my internal being has a feature of duration. If that is the case, naturally we get the following question: how can we measure a physical time and a mental duration?

Suppose in a photo lab, we need to do a five-second exposure to duplicate a picture, how can we measure the time? The simplest way is to count 1 through 5. This is not a reliable method since people count in various paces. There is a better method: we can use some instrument, a watch or a pendulum, to do the timing. The second method is substantially more reliable than the first one. Because the first method is a pure internal measurement without recourse to any external means; the second method relies on an external instrument, which operates in the physical space and time.

How can we measure the duration of a mental event, e.g., my pain? Again, there are two methods. The first one: feel my pain meanwhile counting 1, 2, 3, ... The second one: feel my pain meanwhile using a watch to count the time.

How can we measure the time of the corresponding neural event of my pain? Still, there are two methods, which can be conducted by another person at the same time when I am measuring my pain. The first one: he keeps a close attention to the changing neural pattern on the screen of a brain scanner meanwhile counting 1, 2, 3, ... The second one: he pays a close attention to the neural pattern on screen meanwhile using his hands to push the button on a stop watch.

From the above three sets of experiments, what conclusion can we get? We can use the same set of methods (with or without a watch) to measure the duration of my mental event and the length of the corresponding neural event as the methods used in a photo lab. If we conduct the experiment in a correct way, we will find that the mental event and the neural event happen simultaneously. (Benjamin Libet of UCSF did report a temporal gap between neural event and mental event. But the interpretation of his experiments is highly controversial. I doubt if he has identified the correct neural event for the very mental event.)

Do mental events occur in "space"? According to Descartes, the essence of the physical is extension in space. Minds are unextended substance and thus are distinct from any physical substance. (6) If Descartes is correct, then my internal being will have no space but only duration in time. Imagine a tiny bug living down a tube without a thickness, what a passive being it would be! It cannot "move" around, it has no freedom at all. This does not sound right. At least, our mental events, e.g., pain or desire, should have a magnitude, like an AM (Aptitude Modulation) signal. Here we got two dimensions, one in "space", one in "time".

Does my mind operate on one thread? From my past experience, even when I was in pain, I can still manage to drive, I can still figure out which hotel to stay for the night. The operation of my mind is multi-threaded by nature. Another feature of human minds is that we have memory. Memory plays a substantial role in the operation of human brain. Without memory, I doubt if we can build any conception about physical time or mental duration. Memory might be another extension in the internal world. How many dimensions in space do we need in order to accommodate all these features? Can we assume that mental events actually exist in the three-dimensional physical space? Can we identify a mental object that moves up and down, from left to right, forward and backward? Does one mental event occur to the right or on the top of another mental event? That sounds awkward. My mental events may be able to "move", but not in the way in the three-dimensional physical space. Perhaps you can know that there is an itch on your left hand and a pain on your right leg. I am afraid the locations as you perceived are locations in physical world, just like you feel the keyboard on your fingertips and the chair under your bum. We are walking on a marshland. It is not wise to build a high-rise building before we find more solid ground. I'd better stop here, harvest what we already get and move forward.

What is mental duration? Does my mental event happen in a distinct mental time or actually in the same physical time? According to Einstein, (10) the physical time is just one integral part of the four-dimensional spacetime. If we cannot prove that mental event

happens in the same three-dimensional physical space, we have to assume that my mental event happens in a distinct mental "space" and a distinct mental "time", and those mental "space" and mental "time" might be totally different from the physical space and time in conception. Let's try *reductio ad absurdum*: If, suppose in future, we could prove that mental events exist in the same four-dimensional physical spacetime, what conclusion would follow? It follows that mental event should be equally observable from external point of view side by side with neural event and other external objects. This is definitely not the case for now. We cannot feel other's joy or pain. We cannot perceive other's mental events. There are physical events unobservable in the remote Universe and deep inside the Earth. However, there is a possibility that they will become observable some day in future when we get better telescope and particle detector. The history of science has proved the possibility repeatedly. We cannot imagine such a possibility for mental events. If we cannot observe mental event in the same way as we did for neural events and all other physical events, we have to say that mental events do not exist in the same world with all physical events, otherwise, why we cannot see them. The common feature with all physical events is that they are perceived from external point of view; the common feature with all mental events is that they are perceived from internal point of view.

If mental space and mental time are distinct from physical space and physical time, what is the difference between mental space and time on the one hand and physical space and time on the other? The only thing I know by now is that our measurement of mental space and time are subjective. Different people at different moments count in different paces. Another well-known example is, put your two hands separately into two buckets of water in different temperature, and then put them together into the same bucket of water. One hand feels the water warmer than the other hand.

Is there any common place between mental space and time on the one hand and physical space and time on the other? The only thing I know by now, from the three sets of experiments, is that mental event and physical event happen simultaneously. That is why I coined the term, "simultanience", to designate the relation between mental event and physical event. For supervenience between a chair and wood beams, both relata are physical, both exist in physical space and time. For simultanience, one relatum is mental, the other is physical, and they exist in different space and different time. You may say, a mental event simultanes a physical event. You may also say, a physical event simultanes a mental event. They are simultaniient for each other. Every mental event has a corresponding physical event, but not every physical event has a corresponding mental event.

4. Simultanience is not a Causal Relation

What other features can we find for simultanience? Is it a causal relation? As I defined in another paper, supervenience is not a causal relation, since a chair and its wood beams exist in the same space in same spot at the same time. Combine the macro and the micro points of view together, they can be regarded as one and the same thing. A chair and a table can enter a causal interaction, because they are in the same space, but in different

spots at the same time. They are two distinct things in any sense. The situation for simultaneity is different. A mental event and its corresponding neural event do not exist in the same spacetime, they exist in different worlds, so they cannot enter a causal relation.

Like the situation in supervenience, here we can get a coherent causal account of mental events in the internal world, at the same time, another coherent causal account of neural events in the external world. And, the two chains of causation can run parallel so well on the two sides of simultaneity. The parallel was observed by Leibniz 300 years ago. However, his "pre-established harmony" (11) is regarded as an answer unsatisfactory by most philosophers in our time. The situation in supervenience might help us understand the issue. From an internal point of view we see a mental event, from an external point of view we see a neural event. Combine the two points of view together, though a combination much more difficult and imaginary than the combination across supervenience, roughly speaking, they can be regarded as one and the same thing. This is how the parallel happens and why simultaneity is possible. The relation between the mental and the physical is like the two rails of the railroad: the two parallel rails never intersect, similarly, the relation between mental event and physical event is not causal, in this sense we can say that the two domains are separated; however, the two rails never run in different directions, similarly, every move in the mental is always synchronized by a change in the physical, in this sense we can say that the two domains are not completely separated, they are closely coupled.

We are ready to explain one of our observations, that is, the psycho-physical interaction. This is the major difficulty for ontological dualism and the major reason for it to be out of fashion in 20th century. The psycho-physical interaction is an observation from each one of us, that is, situation in the physical world can cause change in my mental states, and my mental "decision" can change the course of events in the external world. This is a phenomenon we get from common sense. We will get a different picture strictly from an external point of view: physical change in the external world, via sensory organs, can cause a new neural event in my brain, which corresponds to certain mental state; via motor muscle, another neural event which corresponds to my mental "decision" will change the course of physical events in the external world. Yet we get another different picture strictly from an internal point of view: sensory data as mental events representing objects in external world can trigger another mental event like a happy emotion in my mind; my decision in my mind, once implemented, will bring about certain sensory data I expect. The psycho-physical interaction is a kind of phenomena we get from our common-sense confusion between internal and external points of view. After a clarification of the two points of view and a justification of the parallel between the mental and the physical, we achieve a new understanding and we can explain the psycho-physical interaction without violating the causal closure of the physical, an metaphysical principle well-established in sciences.

Human brain has a causal interaction with the external world through five senses and motor muscles. Human mind is isolated by simultaneity from the external world that includes your brain. Simultaneity is a "wall" without a door, but with windows; a

"river" without bridge, but you can see the other side. I cannot even find a better word other than "wall" and "river" to describe the relation or the separation. Wall and river are physical. Simultaneity is not physical, furthermore, it is neither within the physical nor within the mental. It is between the physical and the mental.

Simultaneity as a "wall" is thinner than any membrane and thicker than any mountain. On the one hand, when your mind's eyes see something before you, it is so transparent. You feel no membrane in between. If you have a good command of your five senses and motor muscles, you will never feel the wall. On the other hand, you can easily go across the Rocky Mountains even with all your personal belongings and furniture by loading them in a U-Haul truck. You can travel across Atlantic Ocean by a Concord in three hours. You can even fly to the Moon by a Saturn V Rocket. But you can never escape the isolation of simultaneity. You can never avoid the limitation of your internal point of view. Simultaneity is the ultimate human bondage; internal point of view is the ultimate human predicament.

5. The Origin of Minds

What is that "internal point of view"? How do we get it? I believe my mental world starts with self-consciousness. It is an emergence from nothing, just like the emergence of a chair from a non-chair. We may also say that it is an emergence of something extra from something as is, i.e., an emergence from certain patterns of neural firings within a nerve system, just like the emergence of a chair from a pile of wood beams put in certain form. It is the simple ability to feel "I", or the simple ability to think "I".

Here a reference to Hume might be helpful. In his *Treatise* (Book I, Part iv, Section 6) Hume writes: "For my part, when I enter most intimately into what I call myself, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never catch myself at anytime without a perception, and never can observe anything but the perception." (12).

For Hume, the self is not an object of perception. Therefore I believe self-consciousness is the subject and the starting point of the internal point of view. From there, my internal point of view becomes possible, and my internal perception becomes possible. It is the "innermost being" as described in Holy Scripture. (13) It remains empty by itself. The neural events perceived from my internal point of view become mental objects those in turn constitute the basic contents of my internal world.

When does self-consciousness come into a being? When did I start to be self-conscious? Unfortunately human beings do not have long-term memory for the first three years. I cannot tell when I got my self-consciousness. If we have to find the answer by observing somebody else, it becomes a very challenging task. When my son Kevin was born in the hospital, I stared at him for the first moment when he opened his eyes. He moves his pupils from left to right, then from right to left. It seems that he is very curious about this new world. Does he have an internal point of view at the moment? Is he self-conscious? If yes, when did it start? If not, when will it happen? I cannot put him into a brain

scanner. And the brain scanner will not help decisively. So I have to observe his external behaviors down the road. It seems for sure that human beings become self-conscious, and have internal point of view and short-term memory sometime within the first three years. Now he is just over two years old. He already got a lot of contents in his little mind. I believe Kevin has an internal point of view and is self-conscious now.

The emergence of a chair is simple, our hands make it happens. What makes the emergence of self-consciousness possible? Compared to evolution, emergence is a mystical term in biology. Can we say that internal point of view is the result of evolution? No matter if Kevin was self-conscious or not when he was born, he only had three years at the most to develop his self-consciousness. How could the evolution happen in a few years? As we know, the origin of species takes billions of years. It is a long process of random mutations and natural selections. Side by side, perhaps we should ask another similar question. How can we make a baby in 10 months? If we try to answer the second question, the answer is clear: it is because of genes. Genes are the record that accumulates the achievements from evolution. The role genes play in life is similar to the role programs play in a computer system. We take a lot of time to develop the programs. However, when we restart our computer, it takes half a minute to jump into a state of full functionality. The development of a fetus takes 10 months to become a baby, only after a brief rehearsal of the whole evolution process. The development of self-consciousness might be similar. Therefore, it is a process of evolution for human mentality in general; it is a process of emergence for individual mind. Genes make the emergence possible.

6. The Identification of Minds

Do we have any reliable direct means to tell whether one person is self-conscious? No. What about Alan Turing's method? To test an intelligent system in another room simply by asking limited amount of questions via a keyboard is not a complete method. I am afraid Terminator II (15) will pass Turing's test. As we know, we found Terminator II is not a human being but a supercomputer finally only by shooting at him. The shooting does not shed blood but rips a shining metal gap in his body. All scientific methods, such as brain scanning in Neuroscience, may help, but not decisively. Since all they can provide is an external observation. They cannot probe the mental world from an internal point of view. My internal point of view is the only way. The only thing I know for sure from my internal point of view is that I am self-conscious.

However, in practice, I am not supposed to believe that only I am self-conscious, my mental events are the only mental events, and my mind is the only mind existed in the world. My internal point of view does not necessarily lead to solipsism. It means, strictly by logic, that I do not know if other people have a mind or not. It follows that there are two options: 1) Other people also have their own minds and everyone of us has his or her own internal point of view; 2) other peoples have no mind, I'm the only mind.

The first option is acceptable to most ordinary people based on common sense; and it is supported by the so-called "argument from analogy", developed by John S. Mill, William James, Bertrand Russell, and A.J. Ayer: my knowledge of the minds of others is indirect

and based on an analogical inference from my own case. If there is a correlation between bodily behavior and mental states in my own case, analogically, we can expect the same correlation present for somebody else. The argument is far from being logically certain. As I have argued, there is no general psycho-physical law to support the correlation between mental events and physical events. And before we get a full understanding about how the operation of a brain can give rise to self-consciousness, the correlation between mind and brain is contingent to our knowledge.

However, we will face more difficulties if we choose the second option. If I believe that I am the only mind in the world, all other people become mindless automata. Then, I need to prove why I am so unique, and explain why only my brain can give rise to a mind. However, I am nothing special compared to my fellow human beings. At least I am not the most intelligent. When I played chase with my younger brother in our childhood, I lost most of the time. Sometimes I do feel the need to seek advice from my friends, both male and female. So, let's still come back to the first option and the "argument from analogy". If I am self-conscious, I can reasonably believe that my brother and those friends are self-conscious too. If I believe my son is self-conscious, I can also believe that my two parents, four grand parents, eight great grand parents, ... and all of their offspring are self-conscious. Finally I have to admit that all human beings, as long as he or she is not a Terminator III incarnated into a human body, are self-conscious.

What about a dog, a plant, a flatworm, a paramecium, a bacterium, a virus, and a stone? Is life a pre-condition for being self-conscious? Are all living things self-conscious? At the beginning, we may believe that a sunflower is self-conscious. It has a life, and it shows some autonomous actions. However, a botanist will tell you that, a sunflower always faces the Sun, because the cells on the side of the Sun get dryer and shrink. It is this simple mechanism that makes a sunflower always facing the Sun. By similar reason, I do not think bacteria and virus are self-conscious. They only developed some simple mechanism from the evolution for survival. If a stone is self-conscious, then everything is self-conscious. What about a paramecium? The unicellular protozoa do not even have a nerve system. Is a nerve system with sense organ and motor muscle a necessary condition for being self-conscious? What about a flatworm? The ancient metazoa are the first creature to develop a centralized nerve system with stereo sense organs. (16) But a flatworm is still so simple. I am not sure its simple nerve system is sophisticated enough to support an emergence of self-consciousness. Probably we can believe that some advanced animals, like a dog, are self-conscious.

What about a computer system? A computer can do more complicated jobs than dogs and human beings in some aspects. And it does the jobs in a lightning fast way. If we regard its electrical wiring system (CPU, motherboard, data bus, cables, peripherals) as actually a centralized electrical nerve system with sense organ and motor muscle, then, a computer's nerve system is much more sophisticated than the one in a flatworm. The operation of a computer is not autonomous, but programmed. As I shall argue, the operation of human brain is also determinate. That means we are not really autonomous either as a physical machine. Then, shall we believe that a computer is self-conscious? If, for example, a Pentium III is self-conscious, why not a Pentium II, a Pentium, a 486, a

386, a 286, a 8088 and a simple electrical device? What is the substantial difference between them? Computers are built by human beings. We have good knowledge about their operation. With further progress in neuroscience and the development of brain scanner with ever-higher resolution in future, we will get better and better understanding about the operation of human brains. By then we philosophers will be in a better condition to tell why human brains can have an internal point of view and are self-conscious, and whether a computer is self-conscious or not. This is the “hard problem” as expressed by David Chalmers in “The Puzzle of Conscious Experience” in 1995. That is, “*how physical processes in the brain give rise to subjective experience*”? (17) Dan Dennett also talked about the problem in 1992 in his *Consciousness Explained*. (14) By now, we may conjecture that self-consciousness originated from certain patterns of neural firings which give rise to some kind of self-awareness similar to resonance in physics.

7. Free Will

Kant, in his *Groundwork of the Metaphysics of Morals*, expressed his belief in natural necessity. He believes that natural necessity has a higher priority than freedom. But free will is also an obvious fact. Thus a good philosophy should be able to show that there is no true contradiction between freedom and natural necessity in the same human actions. To reconcile the clash between free will and natural necessity is an ideal specified by Kant. (18)

Kant's ideal is not shared by most people in our time, since they seem to advocate a simple and obvious belief that, if we have free will, we can change the course of events, the operation of the external world is no longer deterministic. If we accept determinism and the belief that the operation of the external world including my brain is deterministic, there is no “space” for free will. In order to accommodate free will, which is such a simple and obvious observation from all of us, some people, like Roger Penrose, even dig into the quantum level and make an appeal to “quantum gravity” as the source of randomness and the hope for free will.(19) This simple belief is questionable.

I do not think that randomness will provide a space for free will. Instead, it will generate madness. Let's try *reductio ad absurdum* again: If the operation of brain is random, it follows that, when the retinas in my eyes receive a square image, it may turn rectangle when the sense data come into my cerebral hemisphere. When I want to turn left, my hands may move clockwise. No body can drive for years without an accident. The Steve Davis legend will be totally impossible. We cannot conceivably make any logical reasoning. We cannot have any long-term memory. Instead of being creative or making mistake occasionally, every one of us will be madder than a mad man. Therefore we need to seek another explanation based on the assumption that the operation of brain is determinate. Two elements will be relevant for the new explanation of free will: 1) lack of knowledge, and 2) internal point of view.

Take a computer for example. If we *suppose* that it is self-conscious and has an internal point of view, it has sense organs outward-bound, that is, it has no access to the algorithm

inside the code, but has access to the input parameters and the output of the programs, it also has access to the memory, to the external peripherals (file directories on hard drive, backup tape, printers, scanner, mouse, keyboard), what will happen? The computer will believe that it has a free will. You see, I know when to kick off the backup process at certain time (though it is because of the operation of the cron utility program); I know how to generate reports and save them in certain directories (the outcome of some applications); I can manage several jobs at the same time (the job done by the Operating System); if you want to print a document, I can find a printer for you (actually by some code responsible for network routing). If certain peripheral device is down, I can sense it, and I know how to resume the job when it is fixed. Though I am not very creative and always do the job in the same way, but that is exactly how I want the job to be done. A computer's experience of free will is out of its internal point of view, if it has one. Everything it thinks is performed by a program, which is determinate. But it failed to realize that. It only believes that what a program is doing is exactly what it is doing. A computer with an internal point of view only feels very little freedom.

Human brains are more sophisticated. I can feel more freedom than a computer, but the situations could be the same by nature. I have no way to feel the process of the chemical build-up inside the neurons in my brain. I can only feel the neural firings by perceiving them as a mental event from my internal point of view. I do not know how I come up with those whimsical ideas, why I decide to put those ideas into action. Like the origin of probability, free will also arises from a lack of knowledge. In the external world, the lack of knowledge will lead to a random theory, i.e., a probabilistic description of the reality; in the internal world, the lack of knowledge will lead to a theory of freedom, i.e., the free will. From external point of view, all my ideas and decisions are actually performed by neural operations. But internally I cannot feel that. What I can feel is that, I can freely get some whimsical ideas and freely decide to put them into action. My decision and action can change the course of the events in the external world. That is what we called the free will. From my internal point of view, I feel my free will for sure; however, from external point of view, it is the neural events changing the course of the events in the external world, and free will is an internal illusion.

If free will is an internal illusion and the operation of a brain is deterministic, why the judge and jury still hold a criminal responsible for what he did? Well, still from external point of view, it is not the judge and jury who are responsible for holding the criminal responsible. If they feel that they are in charge, they are in their internal illusion too.

If we find the "internal illusion" thesis ridiculous and unacceptable, it only shows how real our internal point of view and mental events are. From an internal point of view, the criminal feels that he is responsible for what he did, and the judge and jury also feel that they are in charge; from an external point of view, both of them are in their internal illusions, just like a pair of Clarks in an illusion that they are walking by themselves. The criminal cannot avoid punishment by an excuse that the world is determinate, because, from external point of view, it is a physical machine "punishing" another physical machine; from internal point of view, both the criminal and the judge and jury will think the criminal is responsible.

Does the external point of view have any priority to judge an internal perception as an "illusion"? I do not think so. If we deny the reality of internal point of view and mental events, then, in this world, there are no pain, no pleasure, no sorrow, no happiness, no love, no hatred, no will, no jealousy, no ecstasy; nothing is hot, sweet or red. "I" do not exist. You may exist as a robot made of flesh but "I" never know, since the subject of knowledge does not exist!

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