A reductionist view of Open Individualism

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> "Everybody knows that something is impossible to realize
> till someone inexperienced comes and invents it."
> (Albert Einstein)

0.Note

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1. The three theories about personal identity and the actor paradigm

1.1 To explain simply the three theories of personal identity, and to understand clearly the reflections proposed comparing them, it's useful to refer to the actor paradigm, according with every person can be imagined as a mask or a persona interpreted by an actor, and the life may be compared to the time that each character spend on the stage. This model was used in the past by writers as Pirandello to describe the mystery of who we really are behind our conventional mask, but the use proposed now is quite different, because Pirandello meant to refer to our subconscious world, and here we mean to the personal identity. The dualist thinkers may identify the actor with the soul or another abstract equivalent, and reductionist thinkers may think to what generally is presumed to be preserved even after a complete memory loss. Reductionists could be annoyed by this example, but along our discussion, we will see how this apparent dualism can be resolved, and is used here just to support the explanation of the different personal identity views.

1.2 Using this model, we can define in a quite simple way the three main theories of personal identity, as they were classified by Daniel Kolak in his book "I am You". The traditional theory, according with our personal identity has the same duration of our whole life, is named "Closed Individualism", or "Closed individual view of personal identity" , and may be described with the actor model saying that to each mask or character corresponds one and only one actor, from his entering to his leaving the stage. Some thinkers having a radical view of reductionism assert that is required that during lifetime must succeed more different actors to play the same character, because the mask undergo some little but continuous changes during the representation, so it must be consider as a succession of many different masks, that require a parallel succession of many different actors. These changes should happen in imperceptible way, but at a quite high frequency. This theory is named by Kolak as "Empty Individualism", or "Empty individual view of personal identity", to suggest that the progressive chopping of personal identity, taken to its extreme implies the complete loss of a subject who can claim the continuity of its existence, which would be just an illusion. The third theory, promoted by Kolak in his book, is what he called "Open Individualism", or "Open individual view of personal identity", whose origins can be traced back to the Indian Vedas and to Aristotle

in the West, through the monopsychism of Averroes and Siger of Brabant, and recently rediscovered by scientists such as Erwin Schrodinger. According to this theory, there is only one actor playing all the characters on stage. We can easily imagine that this could be done in a movie with an accurate editing, but it seems impossible that it could be done in a theatre, in a scene in which the actors are even free to improvise without following any script. What we will try to show is that not only these difficulties do not prejudice that model, but that it is able to provide better answers to many classic existential problems, using the particular interpretation that we propose, trying to remain layman and reductionist.

1.3 Assuming that only one actor exists, raises the question about "who" it may be. However, it should be noted firstly that from a certain point of view this does not introduce a new problem that the alternative hypotheses have not. In any case, we can ask "who" we really are, beyond the veil of appearances and we adopt the conventional form in social life. But it seems that as long as we maintain a correspondence between an actor and a single mask, the response to the question "who the actor is?" might be resolved with the same answer of "how the mask is made", while the existence of a single actor seemed to be something more that is not required, because of which should be required to adopt a dualistic metaphysics. But if we consider it deeper, if the actor is reduced to be only one, we can interpret it in a completely impersonal way, as the phenomenon of consciousness itself, the faculty to recognize or assign a meaning to all incoming signals within the brain, the ability to recognize ourselves as living subjects and differentiated from the rest of the world. We could reverse the argument and say that are the two theories of the Empty Individualism and the Closed Individualism that introduce a different identity for each experience of consciousness, without any real necessity, relying solely on the numerical difference of living structures in which it can express itself. Reducing the actor to one allows to ignore its identity and to consider the consciousness in a conceptual framework similar to what we use for time and space. As there is no absolute time and space, but they can only be measured in the presence of a material structure that changes over time, so the consciousness too can be considered not as an absolute metaphysical entity, but as something that emerges only in the presence of an appropriate physical structure. Even this is not a news, because it is the same thing addressed by the classical reductionist view, where the consciousness emerges in every brain that is sufficiently complex. The only difference is that it assumes that, because every time consciousness arises in different circumstances, it must necessarily have a numerically different identity, i.e. (according to my informal language), the actor who plays each new character must necessarily be a new actor, while according to Open Individualism, the actor is always the same, even if he or she doesn't know it. This correspondence shows that cannot exist any physical evidences in favor of a view or another, because in every case the outward appearance and the individual experience would remain the same.

2.Personal identity problems with the traditional reductionism

2.1 Within the reductionist view of the Closed Individualism, there are some unresolved problems, and notwithstanding it is generally adopted by philosophers and scientists, doesn't exist a majority of them that have the same view on some details. According the traditional reductionism, which I too subscribed for about thirty years, everything can be reduced to something having a physical existence. Rather than to material structures, we should refer to informational structures, or even better, to continuous processes of transformation of informational structures. The problem (which has been recognized not only by Kolak but also by Parfit and other philosophers) is that when we rely on the "continuity" of a material structure that constantly change, we are conceptually adopting a form of dualism. If, as we know, our bodies are continuously changing both the material particles and the physical structure (and the logical structure that represents information in our brain), after a sufficiently long time and sufficiently drastic changes (total amnesia, or personality change, or folly, or just the years passing), it is possible that does not remain

anything physical or logical to testify the continuity of the history of an individual, to keep track of "who he was" based on "who he is currently". Appealing to the "continuity of gradual changes" means to imagine the existence of something that has the role of the "placeholder" not physically detectable. This is dualism. The only way to avoid the introduction of this placeholder, if we want deny the Open Individualism, it is to break even the during of a single life in a succession of multiple individual identities, so that we can say that every identity is defined exactly by the physical structure that generates it. That's what exactly does the Empty Individualism view of personal identity.

2.2 What its duration would be? It can vary from a single moment of Plank, if we want to be very stringent, or it can reach the duration of what we consider "an instant", which could be around half a second, the estimated time of the evolution of our thinking. If we want to force it to stretch to a whole life, there is the problem that in this case my current identity also depends on what I will do in the future. I can imagine the whole process that represents my entire life like a static structure that extends along the time, and I can make a unique association between my personal identity and a precise physical structure, but this is against the common view of quantum mechanics, according with our knowledge of events have some unavoidable boundaries of indetermination, and particles don't have any own state until they are undertaken to some measurement. This stretching in the duration of the personal identity, it would be necessary to accept the idea of super-determinism, according with also each future choice of the experimenter is already expected in the same moment in which a physical event must have some outcome, that would be selected to fit that future choice. This is a challenging assumption, but it remains a viable option.

2.3 We could think that Open Individualism as well would require super-determinism, though for a different reason. Closed Individualism require it to define the personal identity of a subject, so that it can be considered constant for a whole lifetime. Open Individualism doesn't have this need. But when we imagine a single actor that plays all the roles on the stage, we cannot understand how not just how he could be present simultaneously behind more masks, but imagining the editing of a movie, we have to think that he could improvise just while playing the first character recorded, but then, recording the part of other characters, he should necessarily behave in a coherent fashion with the previous recorded ones. This seems to deny the possibility of a real improvisation. However, this problem depends by the limits of the actor paradigm and by our conception of the time. If the time and the space are considered just as the stage of the representation, and we believe that out of the stage doesn't exist anything, nor space, nor time, nor any form of consciousness, then we can guess that, even if the subjective experience of the actor is to play each single character without any break, we have not any "absolute time" within which we could sort the different interpretations of all the characters. The only clock that exist is the one on the stage, and its time is relative to the sequence of the represented events. Each single decision of the actor that plays all the roles can be related only with the clock on the stage, and its consequences propagates themselves only forward from it. What matters to preserve the free will possibility, is that at the moment of each decision of each character, even if partially influenced by the events already happened, he or she could have a minimal discretion to choose an action that however propagates its consequences only in the relative future of the representation. This and other consideration about the nature of representations will be better explained in the last part of this paper.

2.4 Comparing with the traditional reductionism, the biggest difficulty that Open Individualism must face is the requirement that the actor must be present on the stage playing simultaneously more than one role, i.e. the not-locality of the actor. This seems to be a insurmountable difficulty, and probably is the mean reason why the traditional reductionism and the majority of all the other metaphysical views presuppose that each living being had its own individual personal identity, different from any other. If we think indeed

to the Arabian Phoenix myth, we can see that the fact of considering it being always the same at each its new birth hinges crucially by the fact that its successive lives don't overlaps even for a second. But if we consider carefully the traditional reductionist view, we found that even within it we must face the same problem. In fact, if we imagine any living being like a particular information structure, we must decide how to evaluate the identity of an eventual replica. Although the existence of a perfect replica seems impossible, at the very moment that you consider a living being as an information structure, you must accept this theoretical possibility. You can be tempted to expand the conditions necessary to establish your identity to comprehend all the information existing at the time of your birth, but this moves the problem instead of solving it, unless supposing that were necessary to take infinite information, but this seems a presumption quite unscientific, considering that our observable horizon is about 13,7 billion of light year in radius. The possibility of the existence of replicas break down the correspondence between an actor and a character for the traditional reductionist view. If we assume that the two replicated characters are still interpreted by the same actor, we are accepting the possibility of non-locality. If we assume that the two replicas should be considered as two identical characters played by two different actors, the reductionism is lost, because we have to introduce an abstract placeholder of identity that allows us to distinguish the two structures of identical information. At this point, it seems necessary to choose between the allowance of non-locality or the loss of the reductionism.

2.5 If you choose to allow non-locality, you must be aware that you are subscribing that doesn't really matter the physical instantiation of a brain to determine the personal identity, but just its logical structure. Whenever two physical structure represent the same brain, they have the same personal identity. This is a fundamental step toward Open Individualism, because we can then consider that perhaps not all the brain structure really matter for personal identity, but just some particular substructure, as we can figure also considering the brain of the same person in two different moments. Why do not consider then that that logical substructure could be the minimal logical structure that allows the phenomenon of consciousness? If we can accept this idea, we really are accepting Open Individualism, at least in the reductionist version that I am promoting. This argument is important and it will be deepened later. If you prefer to loss the reductionism, you have to face another big problem. In this case, the existence of an actor cannot be linked to the existence of a character, because the same character is eligible to be interpreted by any actor, and we lose the only thing that allowed to distinguish all these actors. In this way, it become impossible to find a way to list all the possible actors, because neither a non-terminating procedure could guarantee that every possible actor will be listed in a finite time. Also this argument will be explained better in what follows, to understand the bigger logical difficulties that implies, without being able to solve the existentialist problem that will be discussed next.

2.6 One of the misunderstandings to be clarified is retaining that the only actor in the model of Open Individualism should to be recognized in some way to being able to establish its uniqueness. This requirement is related only to our preconceptions about the identity which it is difficult not to be influenced by. Even asking the question about why precisely my "I" was destined to play also "everybody else", betrays the same difficulty, but it has no reason to exist. The problem is that this conception also prevents to see how Open Individualism can be categorized in its own right as a reductionist theory. Someone might imagine that it always requires a "spirit" able to transmigrate from one life to another, or split itself into several parts that then could meet again in a cosmic unity. This vision can be suggestive, but are not necessary, and even if you are willing to accept them, it is important to understand that the vision that I propose in this paper is a very reductionist view. You can realize it considering the "placeholder identity" that I mentioned to highlight the difficulties of the traditional theory of Closed Individualism. If any living being can be described by an information structure, a dualist theory must add an additional

information that allows to recognize its personal identity. Reductionist theories deny the necessity of this additional information, because they explain life, consciousness and personal identity in purely physical terms. But to imagine that Open Individualism, to allow sharing of personal identity, required the existence of such additional information that must always contain the same data, just to be able to check that identity, is an assumption totally unnecessary. Such information is needed only if we assume that it could be different in some circumstances. If you posits that it is always the same, add it to the description of every living being does not add any information at all. The same hypothetical content of such information would be irrelevant. You might think of using it as a data field that can assume the values "true" or "false", to distinguish the living structures from the non-living ones. But according to the reductionist logic that we want to apply, the fact that a structure can be considered "living" or "conscious" can in principle be deduced from its physical description, although the debate is currently open on what criteria should be used. This means that the additional data with the value "true" or "false" would be superfluous, because it could be inferred from other data that describe the logical structure. Being able to do without this hypothetical additional data with content that is always the same shows that this conception of Open Individualism is a reductionist conception.

2.7 I hope to have shown quite clearly that considering each possibility, at some point come out problematic and counterintuitive implications, not less problematic than those assumed by Open Individualism. In the end, the most general model that we can image is an universe (or a multiverse) that contains every other possibility. If you accept Open Individualism, you just have to notice that the multiverse itself is able to generate awareness, though each time it is limited and partial, depending on the context in which it emerges. If you do not accept Open Individualism, you have to introduce more instances of awareness and inevitably occurs what I call "the existential problem individual", without any theoretical gain respect to the argument of Open Individualism on issues such as personal identity, not-locality, reductionism, free will.

3. The anthropic principle and the individual existential problem

3.1 I cannot say if somebody introduced before the distinction between "individual existential problem" and "general existential problem", but I think it is an useful distinction anyway.

Individual existential problem: "What conditions were necessary for my existence? What chance they had to come true? Could I not exist? Could the world exist without me?"

General existential problem: 'What conditions were necessary for the emergence of life? What chance they had to come true? Could life not exist? Could the world exist without life?"

An anthropic kind of reasoning allows us to break free from both the questions "what chances they had to come true?", because it let us presume that, given enough space and time, every possible case has its chance to come true. But when we apply this reasoning to the case of individual existential problem, we are implicitly presuming that I born and I am alive each time is created the information structure that represents me. But then, in the case of the traditional reductionist theory, you cannot think to live just one life and nothing more forever. We must think to be in a loop where we live infinite times our current life, or at least a life that begins always in the same start conditions. If you are the only possible actor for your mask or character, you have to come in the stage each time your character / mask appears. To think that this is a possibility that can be given just only once is against every probability theory. To presume it, we should think about an universe delimited in space and time with rules that undermine the concept itself of "event that happens only once". These consideration will be deepened in the last part of this paper.

3.2 According this view, the existence of your mind will be not associated to a particular physical brain, but to the intere class of brains that have a logical structure identical to yours. Moreover, if you do not adhere to an extreme version of Empty Individualism, for which the existence of each actor is reduced to a single snapshot of a such short duration that the brain can be considered unchanged, we should concede that this class of brain doesn't contain only brains identical in each single molecule, but brains "identical enough", that have in common only a part of their logic structure. Once we saw that the problem of non-locality is also present with the reductionist version of Closed Individualism and Empty Individualism, and that there can be no evidence which can prove true or false any of these theories, it is shown that Open Individualism doesn't need any presumption that is not already necessary anyway. There is another consideration that we must keep in mind.

3.3 As we saw, even for reductionist theories it's not important the matter that physically constitutes the structure, but just its logic. The personal identity then is not associated to some set of particles, but to the geometry of their structure. So, according the reductionist kind of Closed Individualism or Empty Individualism, a particular personal identity must be not considered linked to a single copy of that logical structure, but at each physical copy of the same logic structure, i.e. to the entire class of physical structures defined by the logical structure that they have in common. Certainly it must be something of more complex than a single molecule of DNA, it should be a cerebral structure that perhaps doesn't have a recognizable physical representation. But whatever theory on personal identity we want to adopt, the same considerations can be applied also to the consciousness phenomenon. As for personal identity, we can presuppose that the consciousness phenomenon too depends by an information structure complex enough. Actually, this is the widespread opinion of scholars, though almost certainly it is a logical structure that could be physically realized in many different ways, but that every conscious being have in common. So the logical structure of consciousness would define a class of physical structure that have in common the property of being conscious.

3.4 But we saw that according with the traditional view of reductionism, the personal identity must be defined by a logical structure as well, and then to distinguish two living beings with different personal identity, it is necessary to imagine that in both their brains were present the same logical structure that represent the consciousness, but to make it work, it would be necessarily integrated by other different structures with the fundamental role of differentiating between the two personal identities. Even if certainly a brain to work properly must have many other accessory structures than the one that represent the consciousness, in this way we are introducing the need of a structure dedicated specifically to the definition of the personal identity, that must integrate the one of the consciousness, that is the same for all the sentient beings. Open Individualism doesn't need such supplementary structure. The same brain logic structure needed to generate the consciousness, is the very same logic structure that defines personal identity. Because this structure is the same for each living brain, the personal identity of the emerged consciousness is always the same as well. All the other parts of the brain are still necessary, to be able to receive, store and elaborate the input information: all of this is what makes us different each other, but nothing of this is fundamental to preserve our personal identity. Daniel Kolak, in his book "I am You", discusses in details how to overcome each of these apparent boundaries.

3.5 In the case of dualist theories, the question about the probability of our personal existence doesn't allow any answer. Havin forever lost the correspondence between physical world and mental world, for each possible mask, there could be an infinite number of possible actors, each indistinguishable from others, and for this impossibility to distinguish them, their total number should be an infinite more than numerable. That means that it shoud be possible to create infinite perfectly identical clones, without any

warrant that sooner or later a particular given "soul" will be associated to one of them. Even if we take as a fact to be one of the uncountable souls theoretically possible, the chance to born would be equal to that of extracting an integer number from the set of the real numbers. Mathematically, that chance is zero. Neither an omnipotent God could choose your single soul. To choose you, it is necessary that you already exist in the God's mind. This model implies that you were from the beginning one of the possible choices of God, and then you had nothing to do but to wait for your turn to be chosen. But to presume to be forever a possibility in the God's mind, before having any chance to deserve such a privilege, would be again a condition to take as a fact without any possible rational explication, that leads to a presumption very well hidden but also very large.

3.6 The same considerations also apply in the case of dualistic secular theories. Even replacing God wth the fate or some hypothetical (meta)physics laws that govern the emergence of mind in a brain in formation, we cannot eliminate this conceptual "set of all possible minds" of which we must assume to be a part without any rational reason. The only evidence that we are part of it is our own existence, which is the only fact that we cannot deny. It forces us to infer that our presence in the collection of "all possible minds" was inevitable, but on the other hand, since these abstract minds don't have any character that could distinguish them, none of them appears to be essential, as each of them can theoretically be replaced by another one without any difference to the physical world we experience. This "non-indispensability" is in contradiction with the fact that my very existence shows me that for some reason I was still found to be necessary. The fact that the set of "all the possible minds" can contain an infinite number of elements of a different cardinality than the number of items in the collection of "all the possible logical structures", carries us to the added difficulty that each element could be deleted without that its absence could be detected in some way. The reason is that the logical structures can be compared to each other, recognized and enumerated, but this is not possible between the elements of "all the possible minds". However, in addition to this difficulty, even for the dualist theories remains the same issue we already saw for the reductionist theories, for which we must consider ourselves owners of a definite logical structure (or a clearly identified "core") within the "set of all the possible logical structures that allow conscience" (or "of all the possible souls"). And in any case, the simple fact that there exist other members of the same set that are different from me, forces me to consider that even the element that I find myself to be, could also be of "one of the others", leaving my consciousness out of the game of life.

3.7 Although this seems to be a kind of dualistic view, it cannot be avoided with the simplistic reductionist claim "every other one was necessarily different from you, and therefore you were necessary". A reductionist philosophy cannot deny the existence of a mind that reflects about the outside world and about itself: rather, the reductionism justifies its existence by reducing it to a mere physical phenomenon, that is, denying the existence of a special "quintessence" which it could be formed by. So again, I can legitimately wonder that my mind was destined to emerge from a structure capable of generating a logical mind, whatever it is. I am not amazed to be a mind originated just from the specific logical structure that represents my physical brain: I'm wondering, more generally, of being me too a mind that is part of this game of life. The fact that for Closed or Empty Individualism there are other minds that are not mine, whenever you want to consider them in a dualist or reductionist way, cannot in any way to account for the fact that "even I" am part of this game. This is the paradox at the heart of the individual existential problem.

3.8 Because of this uniqueness of the actor that plays every role, Open Individualism can solve the individual existential problem, making it coincide with the general existential problem. Any alternative theory will always leave the question open, because you have to accept as a fact, proven only by your own

experience, that you had been given an opportunity within a universe or a multiverse in which every other possibility is represented by someone else. You have to accept as "given from above" being a participant of this game, an actor with a fixed mask in this play, who has been assigned a character exclusively, and to assume that it couldn't be assigned to any other actor. This appears to me far more presumptuous than thinking to be the only possible actor. I cannot avoid to consider it as an inexplicable privilege, because the simple consideration that there exist "other persons that are not me", it's just what force me to consider that the information structure that represent my person could be another "other person", that there's no rational reason of the fact that me too belong to this set of "other persons", that could be well exist without me, leaving me in the nonexistence for the whole eternity. Eliminating from the fundamentals the possibility of the existence of any possible "other", Open Individualism eliminates the problem of "being one of the many". It may seem a more presumptuous assumption, but if you consider carefully, you can realize that instead it is the only way to avoid any presumption, because it eliminates any difference between you and every other living being. This is why I think that Open Individualism, at least in the version that I subscribe, is even more "atheistic" and "reductionist" view than the traditional reductionism.

3.9 Certainly, is always possible to think that doesn't exist any rational solution, and we are destined to remain in the mystery forever. But the reasons that I exposed should evidence that not only one solution is available, but that its rejection implies the presumption to be the exclusive holder of a particular life form, without any possibility of a rational explication of such a privilege. Probably, who is reading this document had a good education, perhaps owns a computer, doesn't have the problem of obtaining food every day, so is in a position for which would be absolutely convenient to be the "exclusive holder" of that unique life that, as we saw, he or she should be called to live again each time its occasion happened, but many other people who didn't had the same lucky should be less prevented to accept this solution, even if it is in contrast with the intuition of personal identity that we developed in millions of years of evolution. It was actually a necessary delusion to make the evolution work. But if you review the logical steps that I exposed, you'll find that Open Individualism is the only possible rational solution. Somebody should suppose that one day could come an alternative explication that today we cannot have. But if it were possible, it would mean that someday somebody could say: "I can demonstrate that behind that mask must necessary be that actor". Can we really think that somebody could ever define who is the actor behind the mask? Even behind our own mask?

4.All the possible universes and the general existential problem

4.1 What follows should be interpreted as a free speculation on how it could be dealt with the "general existential problem". The model of the universe or multiverse which may complete this world view, corresponds without any restriction to the four-level multiverse described by cosmologist Max Tegmark. In short, it provides that there may be all the universes that correspond to any mathematical structure, though certainly only a microscopic minority of them might be suitable to host a whatever form of life. We could again be tempted to think that there might be a different actor for every possible universe, but this hypothesis would re-new the "individual existential problem ", but this time applied to actors in different universes. Each of them may be wondering "Why me? The other universes would exist without me? ". No, this means that we didn't understand all the arguments we saw and to fall again into the habit hard to lose to think that everyone has their own conscience. But consciousness is not to be thought of as something that exists in several copies, but as something which expresses itself in different forms. If all the possible universes correspond to mathematical structures, we can conclude that among all these structures, some will be complex enough to allow the manifestation of consciousness. To return to our informal terminology,

some mathematical structures will be able to accommodate a stage with characters performing an action, allowing the appearance of our unique actor.

4.2 It seems impossible to enumerate all the possible universes with all the possible stories that can be realized within them, but instead it's not something so difficult, and there are several ways to do this, and they are equivalent methods. In 1941 Jorge Luis Borges published a story called "The Library of Babel", which described an imaginary library consisting of infinite books of 410 pages each, with 40 lines per page, and 40 characters for each line. The available characters are only 25, including 22 small letters (Borges does not specify, but it could be the Hebrew alphabet, which has 22 letters), the comma, the point and the white space. Based on these definitions of format and size of books, the total number of different books, even if astronomical, results to be a finite number. The narrator of the story in fact advances the conjecture that the library is "infinite and periodic." It's quite easy to imagine a way to generate all the books in the library. We could begin creating a book composed only of white spaces, then one with a single letter "a" followed by white spaces, another with a single letter "b" and so on until the "z", then also one with a single comma and one with a single point. Then we can go on with all combinations of two characters: space and "a", "a" and "a", "b" and "a", and so until the last. Then we continue with all possible combinations of three, four, 40 characters, and so on up to all the 656,000 characters that are contained in each book, thus obtaining every possible book. The total number is calculated by raising 25 (the number of different characters) to the power of 656,000 (40 characters by 40 lines per 410 pages), a number with more than 900,000 digits, but it is still a finite number. Yet, in this finite set we could find information potentially infinite. How is this possible? The trick is that the information is hidden in the same selection of the book. In that library, we could find somewhere our own biography with our life lived so far. If we are curious to get some detail, we may find the book entirely devoted to describing our day yesterday, or a day of one year ago, or our day of birth. We might find a book that sums up a year, or a month, or describes in a very minute way one second of our lives. And even if we are not able to recognize it, there is a book with our day tomorrow, and the one describing our next birthday, and also one about our dying day. It's frightening, yet it is there, but do not worry: even if we find it, we would not be able to recognize it. We could see that there are all our possible lives, and so we would never know, until the facts have been happened, which was the one that corresponded to reality, or at least, to the reality of this time.

4.3 It is also possible to imagine a library of images. If you think of a computer screen, instinctively we think that it may show infinite images, yet it is made of a finite number of pixels, each of which can assume a finite number of colors. The images are not really infinite, and even the number of all the possible sequences of two, three, hundred, thousand, a billion images is not infinite. The color of each pixel can be encoded in an integer, and all the colors of all the pixels of the screen can be combined to form a still larger number, and likewise also the whole sequence of the frames of a two-hour video, or even two thousand hours, or two thousand years of life may be encoded in a single integer very high, but not infinite. Even the audio can be encoded in the same way. An 8 GB DVD containing a film can be interpreted as a single integer of about 20 billion digits. You can think of a machine that may produces, one after another, all the possible DVD, encoding for each of the 8 billion bytes a value from 0 to 255, up to exhaust every possible combination. It is clear that the vast majority of the collection would be composed by images and sounds without any meaning, but in a very small minority of DVD you will find all the movies that have been made and also those which will ever be made in the future. There would be a movie corresponding to each book in the library of Babel, and vice versa, for every movie we could find a book from the library of Babel, which describes it. As for the books, we do not have to produce DVDs longer than two hours: at the end of each DVD, somewhere there will be a DVD for each possible continuation. Countless stories in a finite collection of DVDs!

4.4 Just supposing that there exists a set of lives that can be experienced equivalent to this collection, and only a single experimenter, gives us a purely solipsistic view that I would like to avoid. However, we can imagine that a single life, a single DVD or a book from the library of Babel can be selected only together with many other books, DVDs, or different lives that form an overall coherent group of stories that must be experienced "in block ". This makes sense because each story results to be generated and well-framed by a collection of stories that precede it, so the group as a whole can self-justify its own existence, allowing to form the entire script necessary for a complete representation with all the characters and the unique actor. In this way, the set of all possible mathematical combinations of numbers is no longer considered as a set of distinct elements, but as a set of systems each containing elements that have consistent relationships with each other to form coherent stories . So we get the latest model of interpretation, where each individual story represents a number which influences and is influenced by other individual stories, according with consistent rules, creating what in mathematics is called a formal system.

4.5 Interpreting the numbers as encoded propositions that apply to other numbers, we can manipulate them in a mechanical way, with confidence that the number obtained as a result can be interpreted as new information that, if the start-up information are true, is necessarily true. In this way we can build in a mechanical way all the propositions that can be derived from any set of starting assumptions and rules, provided that the postulates are true and the rules do not contradict each other. Mathematicians would like to be able to construct a formal system that can prove any proposition on the integer numbers, but when they tried to do it, they found that it is not possible. The simple arithmetic of integer numbers by itself is already so complex to avoid any definitive formalization. This means that even if you can reduce any possible universe to an integer number, it can still contain something that cannot be inferred solely from its physical description and the rules that govern it. We can always extend a formal system with new assumptions and new rules to cover a growing number of truths, but their incompleteness is an unavoidable feature. Although we are now in the field of a free speculation, it is precisely in this area of uncertainty that it could be set to the phenomenon of life and consciousness. Kurt Godel demonstrated that within any formal system, it is always possible to form a sentence that expresses the meaning: "I cannot be proven within this formal system." We cannot find in the physical world a rational reason of the existence of life and the emergence of consciousness. Any scientific explanation could apply equally well to a world of machines without a true conscience. From this standpoint, consciousness is destined to remain "something more" that was not technically necessary. The complete collection of all possible DVD exists even if no one looks at it, but the sense of the information that it contains becomes real only when an observer will view at them. Its function is not just passive, because the attribution of a meaning is an active experience, as long as the choice of the set of DVDs to view as a block, conceding that there was more than one, and that a whatever form of free will were be possible. It is significant that in mathematics it was necessary to introduce the axiom of choice to permit the selection of a single item from a non-empty set. "Understanding" and "choosing", which are the key features that characterize all conscious beings, are still outside of what can be formalized.

4.6 This interpretation of life is connected to the set of all possible multiverses proposed by Tegmark, and offers a vision that is the best we can imagine as a response to the general existential problem. We can imagine that all mathematical structures correspond to some universe, but only those complex enough to contain living structures can actually be tested. Formation of these living structures must be justifiable within the rules that govern the evolution of the universe that contains them, which must be not-contradictory for make it result self-sustaining. The Open individual view of personal identity claims that our own current "self", however, will be the experience of each of these possible lives, and that each event will be lived once and for all the living participants. At this point, to consider as existing even all the

universes and the events without no observers, there is just like an agreement on what we want to define as "existing", even when the relationship with our unique "I" is purely theoretical. According to our response, we may conclude that our universe is made of such stuff as dreams are made on.