On the Phenomenon of Unification

One of the aspects of consciousness is the fact that it is formed from unifications of qualia. In this paper, unification will be shown to be a phenomenon that works based on the unformal nature of self-reference. Self-reference being an unformal entity, it is no-thing and every-thing both at the same time. These unformal properties will be shown to play an essential role in the existence and manifestation of unification. The best exemplification of the unformal workings of unification will be shown to happen in the phenomenon of telepathy. Telepathy will be argued to be a case of consciousnesses unification and will be shown that its imperfection is not a reason for rejecting it, but is a door towards the workings of the phenomenon of unification.

Keywords: consciousness, emergence, self-reference, unification, telepathy

Introduction

Also known under the names of "the combination problem" in panpsychism or "the binding problem" in neuroscience, the problem of unification is one of the main mysteries of consciousness. The reason why I choose the name of "unification" instead of "combination" is that I think it captures better the phenomenology of two or more consciousnesses unifying into one consciousness. At a first sight, it might appear as a straightforward phenomenon: we have two consciousnesses and they unify into one. Of course, this needs an explanation of how exactly it happens. But the problem seems clear enough. We will see though that unification is a much subtler phenomenon, and only if we get to appreciate its subtlety, we can have a chance at explaining it. Actually, its apparent simplicity is one of the reasons why we haven't yet got an explanation for it. It appears to be too simple to be able to say anything at all about how it works. By going deeper into its structure, we will uncover much richer manifestations, and those manifestations will offer us more data from which we can get to an explanation. This paper will not solve the problem, but it will expose some interesting considerations about the workings of unification that can be later pursued by other people.

The analysis will be based on the workings of self-reference which is responsible also for the emergent structure of consciousness. These ideas have been explored at length in previous papers of mine, but in order for this paper to be self-contained, the main ideas of emergence and self-reference will be presented again. We will start as usual from presenting the emergent phenomenology of consciousness, namely that consciousness is structured on a holarchy of levels, then we will show how the emergent phenomenology leads to the idea of self-reference, and then based on the unformal properties of self-reference we will go and show how unification is one of the manifestations of self-reference. One of the reasons why unification needs unformal properties is because we are dealing with two or more entities becoming one. Such a phenomenon cannot be accounted for in formal terms, because in formal terms, x is x and cannot be anything else. But since we are dealing with entities that are melding their identities, we can only go about and explain this if we are working in the unformal realm. As was shown in "The Self-Referential Aspect of Consciousness" paper, self-reference is such an unformal entity that includes and transcends itself both at the same time. We will see that such unformal properties are what it takes for an explanation of unification to be found.

This paper is also intended as an expansion of the analysis upon self-reference. Given the fact that unformal entities allow for contradictory properties to be true at the same time, a problem arises regarding the boundaries of these contradictions. Are they completely chaotic or, if regarded properly, we can discover that they are rather structured? Given the fact that consciousness is to some degree structured, this is an indication that not all contradictory properties are allowed. This paper will thus try to explore to what extent contradictions are allowed and how the interplay between contradictions gives rise to the manifestations of unification. The analysis that will be done here will be merely the beginning of what might be continued in the future in a full science of consciousness. What is desired here is to argue how for a full science of consciousness we might need to switch from the current formal way of doing science to a rather unformal way, in which contradictory properties are not only allowed, but are necessary if we want to have a shot at understanding consciousness. Thus, by "unformal" I mean mutually existing contradictory properties. If such properties are to be formalized, they lead to contradictions, thus absurdities. But if they are left unformalized, we will see that not only contradictions are avoided, but they will be able to explain certain aspects of consciousness.

Because of the unformal approach to unification taken in this paper, the analysis will be independent of any other account that can be found in literature. Therefore, it will be of little help to compare and contrast with other approaches. Such comparison will only dilute the ideas that are about to be presented. So, in order to keep them as clear as possible, no comparison will be made with other approaches. The analysis done here is based solely on phenomenological considerations of consciousness and they are enough for the conclusions that will be reached regarding unification.

Emergence

Let's start by reminding the emergent phenomenology of consciousness that has been previously presented in "The Emergent Structure of Consciousness" and "The Quale of Time" papers. Because of the pervasive use of the concept of "emergence" as referring to physical entities "emerging" one of top of another like water "emerging" on top of hydrogen and oxygen, we need to mention here once more that the correct usage of the concept of emergence should only be done in relation to ontological entities, not epistemic ones. Given that the only entities that have ontological status are qualia, then emergence should only be used regarding the emergence of new qualia on top of previously existing qualia. Therefore, let's see how qualia emerge one of top of others. We will take the image presented in Figure 1 and ask the reader: What do you see?

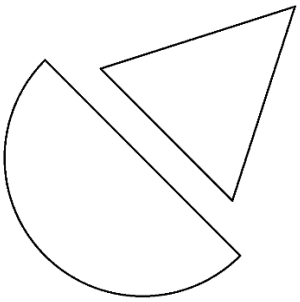


Figure 1. Emergence

Probably the first answer will be: a semicircle and a triangle. And this is a truly existing experience in consciousness. Now, let's modify this experience and see emergence in action. I will tell the reader:

It is a radio telescope. Now I will ask the reader to look again at the image. Something new happened. Now the image is not a semicircle and a triangle anymore, but it is a radio telescope. Of course, it is highly simplified, but nevertheless it is a radio telescope. For diversity, let's alter the original experience in another direction. I will tell the reader now that that image is actually a space probe entering atmosphere. Again, having this new information, the experience of the reader changes once more and now he has a different experience when he looks at the image. What we are dealing with here is the true functioning of emergence. And we see several properties. First of all, indeed there is a new entity coming into existence that was not there before. And it really is a new entity. The experiences of seeing a radio telescope or a space probe are certainly not the same experiences as seeing a semicircle and a triangle. Secondly, the new experiences are not totally independent from the previous experience. The new experiences inherit in themselves the previous experience. The experience of the radio telescope is not an abstract experience, but it has a semicircular base and a triangular antenna. The space probe is not an abstract experience, but it has a semicircular capsule and a triangular trail of flames. So, the previous experience of mere shapes is inherited in the new experiences of objects. We are dealing here with true emergence: the appearances of new qualia on top of other qualia.

Note here that only because the phenomenology of emergence is simple, it doesn't mean that the phenomenology of qualia that appear through emergence is simple. On the contrary, the phenomenology of qualia is of the utmost complexity, and it takes a great deal of introspection to make it as clear as possible. The phenomenology of emergence should be viewed as a framework that can help us out in unraveling the more complex phenomenology of qualia themselves. Let us take a more complex example to gain a broader view of how emergence and inheritance of qualities work. For this I will take the entire visual qualia domain and show how a final quale can have many emergent levels in its structure. Let's have a look at Figure 2.

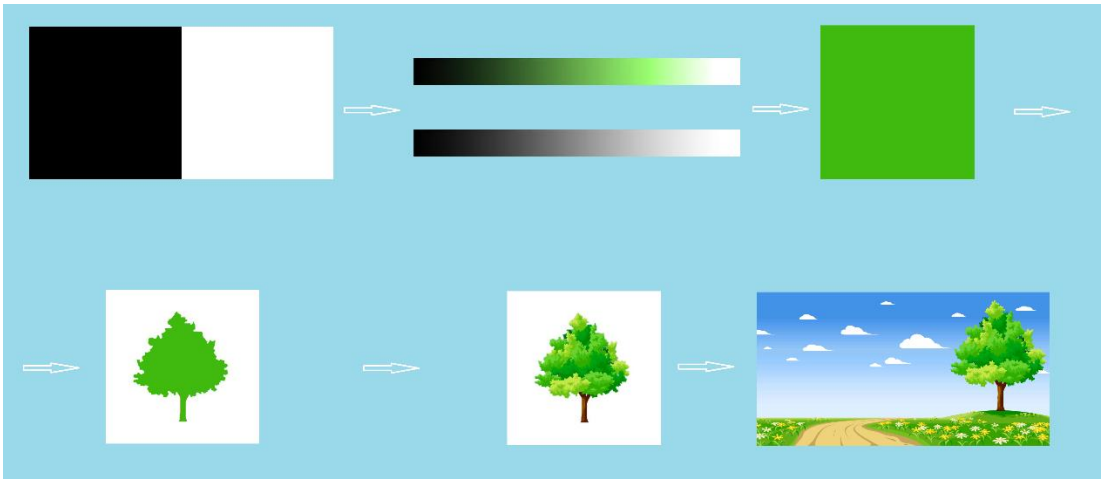


Figure 2. Emergent levels in the visual domain.

What we see in Figure 2 is that the base of the visual domain is represented by the black-and-white qualia. Then the qualities of black-and-white are inherited in the emergent level of shades-of-gray. We can see this inheritance by the fact that shades-of-gray display a darker-and-lighter variability. Then the qualities of the shades-of-gray are inherited in the emergent level of colors. We can see this in the fact that a color is never pure, but displays a range of shades varying from lighter shades to darker shades. Then, colors are inherited in the emergent level of shapes. A shape is not an abstract entity but it is always created from at least 2 colors. Then shapes, like we also saw in the previous Figure 1, are inherited in objects, in this particular case in the quale of tree. Finally, objects

are inherited in the full visual scene. Notice as a side note that emergence is not linear, but from a certain level there can be a whole family of branches emerging. For example, from shades-of-gray all colors can emerge (even colors that we cannot imagine from our human consciousness), not only one. Also, from the shape in Figure 2, a quale of tree can be emerged or a quale of leaf, and so on. In principle, the number of qualities that can be obtained through emergence is infinite.

A point to note is that a quality is not inherited only on the level immediately above a certain level, but it is inherited in all the levels from above, and it is not necessarily manifesting in the same way that it does on the level immediately above. For example, black-and-white manifests in the level immediately above as the variability of shades-of-gray. But black-and-white is also inherited in the full visual scene and the way in which it manifests there is to allow for the visual scene to be seen at all. The true quality of black-and-white is not black and white as such, but is the quality of being visual, and this quality lies at the base of the entire visual domain. To see is at least to see black and white. I will give another example in this direction, in order to familiarize ourselves as better as possible with the subtlety of qualities inheritance. For this, I will take the emergent structure of the written language, and I will take the levels of shapes, letters, words and sentences. We will see what qualities are we dealing with and how they manifest themselves in the various levels that emerge along the line.

Shapes: quality of “visual objects”: entities with spatially defined boundaries.

Letters: inherits the quality of the Shapes, thus becoming themselves visual objects, and emerges on top of it its own quality of “unities of language”.

Words: inherits the quality of the Shapes, being themselves visual objects, inherits the quality of the Letters, being themselves unities of language (just more complex than letters), and emerges on top of them all its own quality of “carriers of linguistic meaning”.

Sentences: inherits the quality of the Shapes, being themselves visual objects, inherits the quality of the Letters, being themselves unities of languages (just more complex than both letters and words), inherits the quality of the Words, being themselves carriers of linguistic meaning, and emerges on top of them all its own quality of “carriers of ideas”.

Another point to make here is that the above emergent structure from Figure 2 was presented starting from the bottom and highlighting the various qualia that emerge as we go up the tree. From a practical point of view though, the analysis can only start from the top level, because the top level is the one that we actually experience directly. And the way in which the descent in levels is being done is to search in the current level for qualities that might come from lower levels. For example, in the quale of the full visual scene we identify various objects, then in the quale of the tree we identify a shape, then in a shape we identify a color, and so on. As was shown in previous papers, by doing this we can also reach the level of time and even deeper to the base level of consciousness which is the level of the Self.

We can thus see in these examples that having at our disposal the phenomenology of emergence we can make beautiful sense of the phenomenology of qualia, and a science of consciousness can be constructed on general principles. Instead of dealing with what appear to be countless random qualia that are impossible to be sorted out in some kind of periodical table of qualia, we actually obtain a tool that lets us make order in the qualia that we experience.

Self-Reference

The next step in the analysis is to offer a mechanism for emergence. How should the nature of reality be such that new qualia can emerge on top of previously existing qualia? We will see that the phenomenology of emergence will lead us to conclude the existence of an entity that includes and transcends itself, both at the same time, thus accounting for how new qualia are able to incorporate in themselves other qualia in a process that maintains the unity of consciousness. So, in order to get to a mechanism for emergence, we have to pay careful attention to what is going on. Let's take as an example the emergence of colors from shades-of-gray. First, there is a consciousness that experiences shades-of-gray. Then, by a reason that remains unknown at the present day, that same consciousness experiences colors. How can we analyze this phenomenon? One aspect of this phenomenon is that, as we saw above, colors include shades-of-gray while being more than shades-of-gray. Another aspect is that in this transition, the same consciousness endures. So, what we have is not only that colors include and transcend shades-of-gray, but the same consciousness includes and transcends itself. The way in which this process can happen is by consciousness looking-back-at-itself. By looking-back-at-itself, consciousness finds itself, but the very act of finding itself leads consciousness to transcends itself by including its former self. Note here that this is not necessarily a temporal phenomenon. When we see colors in day-by-day life, the emergence of colors on top of shades-of-gray is already present. So, emergence is not to be understood in a temporal manner. Of course, some cases of emergence, like learning new concepts on top of previously existing concepts are temporal, but this is just a particular case, the most general way for emergence to be being atemporal. But even though emergence is not to be understood in a temporal manner, the analysis remains the same: the phenomenon of emergence is explainable by consciousness having the property of including and transcending itself, both at the same time. Therefore, even if we are dealing with the visual domain or the auditory domain, or any other qualia domain, the same entity lies at the center of them all. Let's call this entity: self-reference. We can try to represent it graphically as in Figure 3.

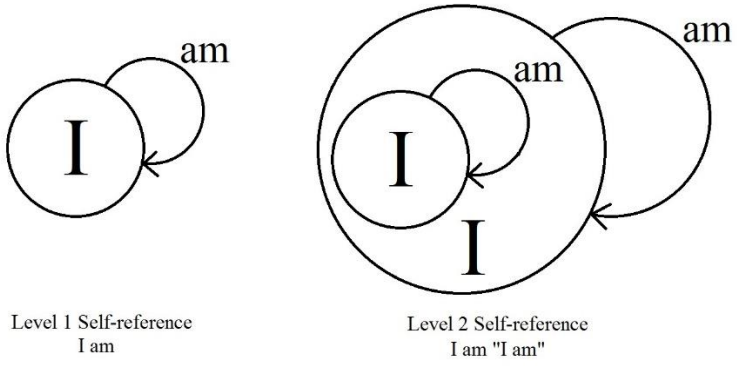


Figure 3. Self-Reference

Here, interesting considerations start to appear that need to be properly understood if the rest of the paper is to make sense. One such first consideration is: Which of the two diagrams of Figure 3 represents self-reference? The answer is: both (and neither). They both are self-reference. Self-reference is an unformal entity. This means that no matter how hard we would try we cannot capture it under any formalism. To give an intuitive feel for why this is the case, let's take the

following example. Let's say that you want to formalize a certain state of consciousness, like for example seeing a unicorn. One way in which such a formalization can be done is to write on a piece of paper "I see a unicorn". But such a formalization pushes you outside of the very state that you want to formalize, landing you on the new state "I draw on a piece of paper that I see a unicorn". If you try harder, and want to formalize this new state, a similar phenomenon will happen of pushing you in yet another state: "I draw on a piece of paper that I draw on a piece of paper that I see a unicorn". And so on. No matter how hard you try, you will be kept thrown outside the state that you want to formalize. The reason for why this happens is that in this process there is always an "I" that is left outside of the formalization. Any attempt at capturing the "I" ("I see", "I draw", etc.), pushes the "I" one step backwards. No matter what formalization we would try to bring to consciousness, the "I" that is doing the formalization will always be left outside. So, which is the ultimate "I"? The one that sees or the one that draws? The answer is: both and neither. The observer is an unformal entity. No formalization can be brought for the observer. Fortunately, as we will see, this is not the end of the science of consciousness. Quite the contrary. If we take this fact of consciousness at its true value, we can make important steps forward towards a science of consciousness.

Let's analyze a little more the nature of self-reference. There is actually a difference between self-reference and the Self, and this difference needs to be spelled down in order to make things clearer. Let's start from first principles and define self-reference to be an entity with the property of looking-back-at-itself. Let's analyze what this entails and see that starting from such theoretical first principles we can recover the phenomenology of emergence. By looking-back-at-itself, self-reference does two things. In the first place, it finds itself. The place in which it finds itself is inside of itself. So, the itself that is found inside itself is "smaller" than itself. But secondly, at the same time, finding the "smaller" itself inside itself, it also means that it is "larger" than itself. And at the same time, being itself means that it is also equal to itself. Thus, self-reference has three properties: it is smaller, equal and larger than itself, all at the same time. Note that as long as we leave these apparent contradictory properties unformalized, there will be no contradictions, so the analysis is valid. And not only valid, but crucial for the existence of consciousness. So then, how does consciousness arise from these properties of self-reference? The way in which it happens is as follow: when self-reference looks-back-at-itself, by finding itself inside itself, the first glimpse of awareness appears: "I am". "I am", or in short, the Self, is the first object that self-reference finds when it looks-back-at-itself. The Self is the first quale that self-reference experiences. This quale is the sensation of being alive. When we strip our consciousness of colors and sounds and touches, what is left is the primordial experience: the Self, the ontological subjectivity, the first-person perspective. Another productive way in which we can cast this phenomenon is to describe it in terms of form and formless. Self-reference is a formless entity. But by looking-back-at-itself it becomes form. Form and formless are inseparable. The formless self-reference always looks-back-at-itself, so it always becomes form. And form cannot exist any other way but by the looking-back-at-itself of the formless self-reference. Thus, form and formless are 2 sides of the same coin. Self-reference is both form and formless and neither form nor formless.

If the above considerations of self-reference are hard to wrap the head around, it is natural. In day-by-day life we are focused so much on forms (qualia) that we developed the non-contradiction principle in which no two qualia can be identical. Being thus used to handle the forms, we find ourselves in difficulty when getting in contact with the unformal realm. I actually think that this is the main reason why the science of consciousness is still struggling to be born. By being used to employ formal entities in our sciences, we have a tendency of hoping to do the science of consciousness in the same manner. I think that if this obstacle is surpassed, rapid advances will be

made in giving birth and developing the science of consciousness. Thus, let's see what science we can do by operating in the unformal realm.

The first step in validating the above analysis of the unformal nature of self-reference is to see how emergence is obtained from it. The step from self-reference to emergence is straightforward. As we saw, the first looking-back of self-reference gives birth to the Self. But self-reference can continue to look-back-at-itself. Since now it already has the "I am" object inside itself, the next looking-back will put self-reference in the new "I am "I am"" form, form which includes the previous "I am" form and at the same time transcends it. From here on out, self-reference can go in various directions. At this moment it has 2 objects inside itself. It can either look-back at only the second of them and become "I am "I am "I am"""", or it can look-back at both of them and become "I am <"I am "I am" & "I am">". And so on. We thus recognize two aspects of emergence: the quality inheritance from one level to the next one and the ramification of levels. Having now the manifestation of self-reference at our disposal, we can express for example the emergence of colors from shades-of-gray as a looking-back-at-itself of self-reference from the state "I am shades-of-gray" to the new state "I am colors & I am shades-of-gray" (or better: "I am colors in virtue of being shades-of-gray"). Seeing thus that emergence can be explained by self-reference, we can become more confident that the suggestion of accepting unformal entities in our science is most probably correct.

A note to be made here is that even though self-reference explains how emergence of new qualia on top of previously existing qualia happens, it still leaves something out, namely the specific qualities themselves: What determines red to emerge for a particular consciousness? Or yellow, or blue? This is a mystery that is still unsolved by any present theories of consciousness. Of course, some reasons can be brought, like for example qualia being selected by evolution. But how exactly the evolutionary selection happens is still a mystery. Nevertheless, even though the specific qualities are not explained, the transition from a lower quality to a higher quality that includes and transcends the lower quality can be explained by self-reference. So, we can continue our analysis of consciousness with the new tools that the unformal nature of self-reference offers us.

There is one more way in which the unformal properties of self-reference can be expressed, which will prove very useful when getting to the phenomenon of unification and telepathy. Because self-reference is unformal, it is not a thing. A thing is an object, a quale, a form. But since self-reference is a precursor of forms, self-reference is not a thing, or better put: no-thing. Equally, because by the mechanism of looking-back-at-itself self-reference enriches consciousness with all the possible qualia, self-reference is also forms. And even more: it is all the forms. All the qualia that ever existed and will ever exist in my consciousness and in all the consciousnesses in the world are created by self-reference looking-back-at-itself; are self-reference. So self-reference is also all the things, or better put: every-thing. In short: **self-reference is no-thing and every-thing, both at the same time**.

As we will see, by correctly applying these apparent contradictory properties under the unformal realm (thus avoiding actually making them contradictory by formalization), we will make beautiful sense of unification and telepathy. Having these tools at our disposal, telepathy will not be able to be rejected for the reason of not being perfect, but will be explained as a natural manifestation of self-reference being no-thing and every-thing, both at the same time. The key is the care in correctly handling apparent contradictory unformal properties. Having thus these new tools in our possession, let's move on to unification and explore it starting from its most obvious manifestations to more subtler aspects of it.

Unification

The most obvious manifestation of unification is the one that is best phrased in materialistic terms as: How does it happen that the output of two different regions of the brain, like the visual and the auditory cortexes are put together as to have one consciousness that both sees and hears? In idealistic terms, the problem is: if you have a consciousness that only sees and a consciousness that only hears, how do you unify the two consciousness into one consciousness that both sees and hears? Having now the phenomenology of self-reference at our disposal, we are in the possession of a mechanism for how such a unification is possible. We can express the consciousness that only sees as “I am seeing”, and the consciousness that only hears as “I am hearing”. Note that since all the consciousnesses in the world are manifestations of self-reference, these two particular consciousnesses both lie inside self-reference. They are two of the quadrillions and potentially infinite number of objects that are present in self-reference. All it takes for them to be unified is for self-reference to simultaneously look-back at them. Therefore, by looking-back at both of them, self-reference becomes “I am “I am seeing” & “I am hearing””, thus a consciousness that both sees and hears being created. This is the mechanism by which consciousnesses are unified. The reason and the selection process by which from the infinite number of forms present inside self-reference, these particular two forms are unified, remains unsolved, though in the telepathy section we will argue how love might be one such reason for unifying consciousnesses. This is thus the most straightforward way for unification to happen: self-reference simultaneously looks-back at certain objects inside itself and brings them together under a singular awareness. Let’s now move on to more subtler manifestations, in which we will need to make use of the properties of no-thing and every-thing both at the same time, to be able to explain them.

Another place from our daily lives in which unification works is in constructing our visual field. When we look around and see all the many objects around us, the unitary visual field that contains all those objects is a unification between lots of smaller consciousnesses that are only experiencing individual objects. An interesting problem appears here. If we want to split the unified visual consciousness into the individual consciousnesses that went up in making the unification, which will those consciousnesses be? For example, let’s say that I see a chair and a table. If I want to split this unified consciousness back into its component sub-consciousnesses, will those consciousnesses be one that only sees a chair and one that only sees a table? Why not one for each of the legs of the chair? How do we decide what consciousnesses unified into creating the full visual scene? What are the partitions into which we can split the high-level unified consciousness? The answer is obtained by appreciating what the interplay of contradictory properties in the unformal realm leads to. The answer is: in unification, all the possible combinations of consciousnesses are present. We will take an even simpler example to see how the properties of no-thing and every-thing mutually interact when consciousnesses unify. Let’s say we want to unify 16 consciousnesses that each experiences a square, and we want to unify them such as to obtain a consciousness that sees a 4x4 squares array. What we will see is that upon unification, the newly obtained higher-level consciousness is not anymore a unification of only the 16 initial consciousnesses, but it is at the same time a unification of all the possible combinations of the 16 initial consciousnesses. Let’s look at Figure 4 to see this.

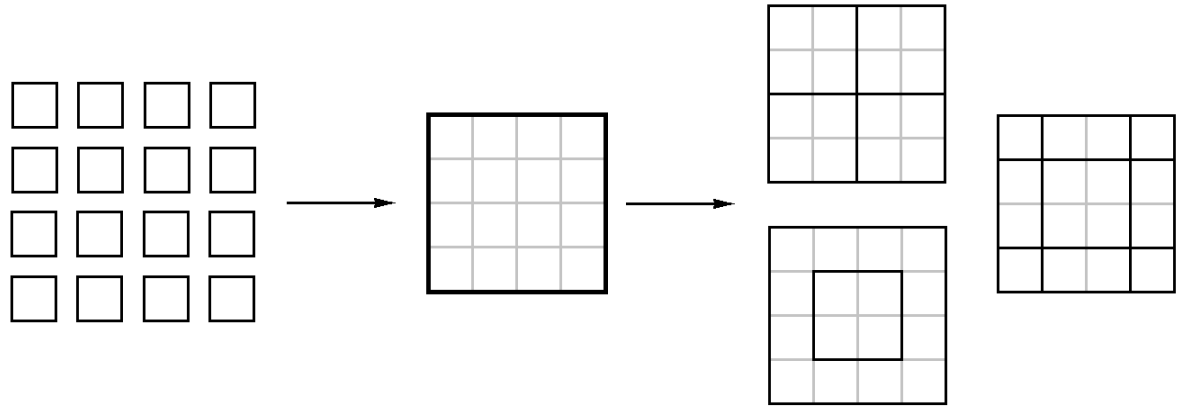


Figure 4. Squares array unification

What we see is that once the higher-level unified consciousness is being created, we can then from the higher level create at our own will sub-experiences, like seeing four 2x2 smaller squares, that wouldn't be possible if the unification of the 16 original squares would only result in a singular 4x4 new experience. By being every-thing, self-reference entails that any smaller manifestations of itself that go into unifying into a larger manifestation of itself can equally unify between themselves as long as the final unification is the same. This 4x4 squares array might not be conclusive of this manifestation of self-reference, because the original 16 smaller consciousnesses that go into unification are identical, thus it might remain unclear that what I just described really happens. Therefore, I will take another example in which the original smaller consciousnesses are distinct and therefore see how they indeed can partake in all the possible combinations that the highest-level unification allows, even at the cost of modifying the highest-level.

A warning to make here is that the example that I am about to give might not be factually correct. As also told from the beginning, this paper doesn't claim to offer all the details of unification. So, there might be some aspects of it that render the example that follows factually impossible. It is only used here as an illustrative case of similar unifications that do happen in real life and to which the reader can relate. The example is a type of error that we all make from time to time, and it happens in the written qualia domain. It is when for example, instead of writing "tight lie", we end up writing "light tie". Once again, this particular example might not actually happen in reality, for reasons having to do with deep workings of unification and its relation to how meaning works. But the reader can recognize in this example a type of error that he made from time to time throughout his entire life. So, taking this case to be representative for this type of errors that do happen in real life, let's try to explain what is happening. The first thing to notice about this particular kind of error is that it is structured, it is not random. We can see that it is a very specific switch of the first letters of the two words, such that the resulting erroneous quale is also meaningful. If the switching of the first letters would not have resulted in a meaningful result, they wouldn't have switched. We can start to spot the workings of the "every-thing" property of self-reference. Let's go into details and see exactly what is happening.

This type of error is a consequence of how unification works based on the unformal properties of self-reference. As we saw in the emergence section, in the written language qualia domain we have the holarchy letters -> words -> sentences. The way in which the transition happens from level to level is by unifying certain elements in a level and then transcending and including them by bringing into existence a new meaning/quale. For the "tight lie" example, the level of the letters is composed of the individual qualia "t","i","g","h","t","l","i","e". Let's call this level 1. Then these individual

qualia are unified into the words “tight” and “lie”, which in turn are unified into the group of words “tight lie”. Let’s call these levels 2 and 3 respectively. This is what would happen in a case in which no error appears. But sometimes, for unknown reasons at the time of writing this paper, something is happening with the unification, and a different final quale of “light tie” is obtained. What we see is that the qualia from the level 1 are unified in different qualia from the level 2. But the reason that drives this erroneous unification comes from level 3. The reason why it comes from level 3 is that level 3 is the one that establishes what the final group of words should be, namely “tight” first and “lie” second. Therefore, what happens is that the highest level scrambles all the unifications that happen on the lower levels. The unifications don’t happen sequentially, but they happen all at the same time. This is also one consequence of the every-thing property of self-reference. There is not a first unification of letters into words and only then of words into group of words. There is not a first unification of “t”,”i”,”g”,”h”,”t” into “tight” and of ”l”,”i”,”e” into “lie” and only then of “tight” and “lie” into “tight lie”. If that would have been the case, then “tight” and “lie” would have been already settled, and the unification from level 2 to level 3 would have only had at its disposal the ability to only unify “tight” with “lie”, so the error couldn’t have taken place. But since the error does takes place, and since we can clearly see that the switching of the first letters is influenced by level 3, then level 3 must have the ability to influence all the levels that are part of its holarchy. Thus, when the final quale “tight lie” is created, all the previous levels are still up for grab and the final level can still scramble them.

This process might sound similar to the superposition found in quantum mechanics, the difference being that in quantum mechanics the superposition happens between elements from “the same level”, while here we are dealing with a generalized version of superposition in which elements exist in superposition both with their peers from the same level and also with elements from higher and lower levels, the process of looking-back “collapsing the wavefunction” and giving a definitive result which depends upon the entire holarchy of levels that are in superposition before the moment of looking-back. I will not pursue this line of thought in this paper, though some readers might find it intriguing to be pursued in their own work.

Having explained in little more detail the process of unification, let’s see now how exactly the “every-thing” (together with the “no-thing”) properties of self-reference come into play in producing the error. To explain better what is happening, let’s remember the question regarding Figure 3. Which of the two diagrams of Figure 3 represents self-reference? The answer is: both (and neither). To get an even clearer picture of this, let’s represent self-reference in a more complex example. Let’s see this in Figure 5.

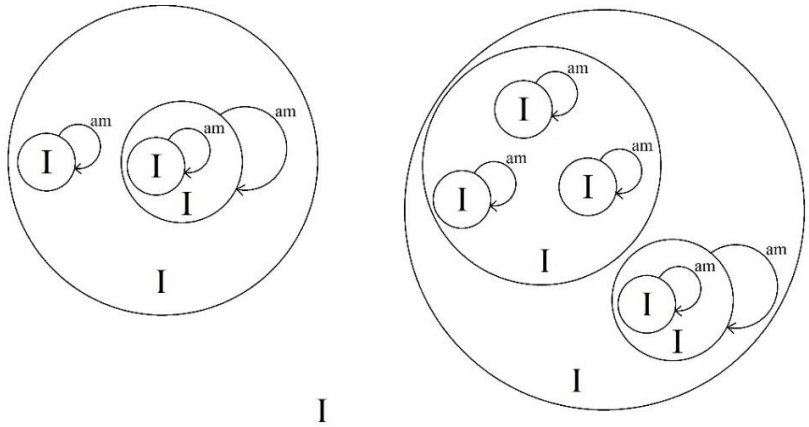


Figure 5. A more complex example of self-reference

The same question: Which of the many elements of Figure 5 represents self-reference? The answer is: all of them and neither of them. We can take the smaller elements to represent the letters in our "tight lie" example, then the medium elements the words, and the 2 big elements the level of the group of words. At each step along the way, each element is self-reference itself. Since each element is self-reference itself, then each element on its own must have the properties of self-reference. Each element on its own is no-thing and every-thing both at the same time. Up until the final step in which a quale is actually experienced, all the levels that go into that final quale are in the undetermined state of being no-thing and every-thing both at the same time. Up until the final quale of "tight lie" is about to be experienced, all its component sub-levels are no-thing and every-thing both at the same time. Therefore, when the error does happen and the final quale "light tie" is experienced, the sub-levels are free to be arranged in any possible way. The sub-levels not having a definite state, the error is allowed to happen, and sometimes is does happen. One aspect of consciousness that might contribute to structuring consciousness in normal cases is attention. Attention might act as a limiting factor in what the outcome will be. If attention is concentrated, then the levels lose their absolute freedom and become restricted into creating the result intended by attention. Of course, other factors might be at play as well. Unfortunately, the complete answer will have to wait to be uncovered by future generations of thinkers. But what this paper propose is that part of the mechanism of how these errors happen and how unification and ultimately consciousness works is by the interplay between the unformal properties of self-reference.

In order to expose the workings of unification as well as possible I will take an even more striking example, an example that did happen to me, so we can be sure that it is factual. At one point I wanted to write "right" and I ended up writing "write". We can see the factor that produced this error, namely the fact that both words sound the same. And in this example, we see that the letters in the erroneous quale have nothing to do with the ones in the intended quale. We are thus in the possession of an empirical example that exposes even better the workings of unification. Let's analyze also this example and see the interplay between the various levels that lead to the final error. The reader already got a familiarity of how this type of phenomenon works, so he is now better prepared to understand this second example.

What we see here is not only a holarchy that is happening solely on the written language qualia domain, but is a holarchy that unifies within itself qualia from different domains, both visual and auditory. We will do this analysis from the highest level now. The first thing that happens is for consciousness to have an intention, like intending to write the word "right". This intention is a state of consciousness that potentially contains an entire holarchy of unifications. There are letters, sounds, shapes, colors and other qualia that unify into giving birth to the intended quale. One such part of the holarchy is its phonetic part, "raɪt". This on its own is independent of the written part. The phonetic part is an independent quale. As long as there is no context to limit or select its meaning, it is all the possible meanings at the same time. Therefore, when self-reference looks-back at "raɪt", it is at the same time every-thing that "raɪt" can be, namely "right", "write", "rite" and others. Of course, they are maintained in the unformal realm by the property of no-thing. They are allowed to exist all at the same time as long as they are maintained as not-things, as formless entities. In the end, when only one of them is to be brought into the realm of forms, then if no particular attention is paid to what the final result should be, any of them can be cast into form, so an error can happen. It's interesting also to consider another part that went into making this particular error. Why did from the many possibilities, my consciousness selected "write" and not "rite" for example? This shows that also the length of words are independent qualia that unify into making the final quale. Since I wanted to write "right", I had in my attention an intuition for how long the final result should be. "Rite" not qualifying for the intended length it was excluded from the

possibilities and only “right” and “write” were left. Since then I didn’t pay any other extra attention, then it was equal if any of them will be cast into form, so it happened that “write” ended up being the experienced quale.

Is worth pointing out at this moment the full implications of the “every-thing” property, in order to give the reader the proper dimensions of the phenomenon. We saw that the phonetic part “raɪt” was all the written parts “right”, “write”, “rite” and others at the same time. It has to be mentioned here that this happens for all the elements involved in the holarchy. For example, the fact that the holarchy is made out of letters, then all the possible letters exist in superposition in the unformal realm. Also, the fact that letters are made out of symbols, then all the possible symbols are part of the holarchy. And so on. It is as in the 4x4 square array. It could be a unification of the 16 small squares or of four 2x2 larger squares. In principle, the final result, instead of “write” in the place of “right”, it could have been anything. Instead of writing “right” I could have written a symphony out of musical notes. Probably what is stopping this from happening is that the further away a potential result is from the intended result, the less likely it is to actually appear. But no matter how small the chances are, they are still larger than 0.

Some readers that are more mathematically inclined might notice lots of structure in these phenomena and so they might wonder if a mathematical theory of consciousness can be constructed. While I highly urge any such attempt to be made, I nevertheless think it is impossible. All this structure only exists in the unformal realm and by its functioning there it is able to bring consciousness into existence in the formal realm. I think that any attempt at bringing this structure in the formal realm will inevitably bring its inherent contradictory nature as well. So, any theories that will attempt to capture this structure will have internal contradictions. And no matter how well those contradictions might be avoided by attempting to bring even more of this structure out of the unformal realm and into the formal realm, that will only push the contradictions farther away, without ever actually eliminating them. Nevertheless, I encourage any reader that feels fit for it, to actually try to do it. This way we will learn more about the exact nature of those contradictions and thus develop more precise theories of consciousness.

On more such example, while I was spell-checking this paper, at some point I wanted to write “from so” and I ended up writing “from some”. We now easily understand what is going on. One part of the intended quale is the phonetic part of “from”. Another part is the phonetic part of “so”. Since the first half of the phonetic part of “from” is similar to the phonetic part of “so”, when “so” was about to be written down, its phonetic part was unified with the entire phonetic part of “from”, so it was also expected from it to contain the “m” part. Therefore, “so” became “some” and the resulted error was “from some”. Of course, the analysis of this error can be spelled into more details. But since the reader already got the feeling for what these phenomena entail, I will leave it at that. Analyzing such errors that happen to us all the time can give us many insights into the inner workings of unification and it is a great source of empirical data for a theorist to construct his theories of unification.

Being now accustomed with basic functioning of self-reference in the phenomenon of unification, we can have a look at yet another case in which we will see not only how different qualia all go into unifying into a singular final quale, but how the intermediary-level qualia have a life of their own and can be shared by different higher-level qualia. This is also because of the unformal nature of self-reference. Because self-reference is every-thing, the intermediary-level self-references are allowed to unify at the same time with multiple other self-references, without necessary knowing one of the other. Let’s analyze telepathy and see how these manifestations are taking place.

Telepathy

Probably the main reason for telepathy being rejected by certain people is that it is not perfect. Because of this, it is said to not be scientific. Since there are at best only similarities between the experiences that people claim to have been telepathic, and not identity between them, some people argue that they are either only coincidences or cherry-picking. If I for example dream of being in an airport and waiting for an airplane, and my partner dreams of being on a snowy mountain and being rescued by a helicopter, to say that the pair airplane-helicopter represents a telepathy is said to be just cherry-picking. From so many elements that the two dreams had, there were high chances that some elements would eventually be similar, so picking those specific similar elements as proof of telepathy is said to be wishful thinking, a desire for the world to be magical and clearly not science. But what if there is actually telepathy happening in such cases? What account can we give for it? What is the mechanism by which consciousnesses get to share certain elements in their experiences? And why such process is not necessarily always perfect?

As we saw throughout this paper, our consciousness is not some indivisible soul, a soul that is like some enduring container in which experiences come and go. Instead, our consciousness is a unification of other consciousnesses, unifications which are forged and broken. Being such a malleable entity, having unification as its core engine, then telepathy becomes just one of the many natural manifestations of consciousness. I thereby postulate that telepathy is a phenomenon of consciousnesses unification and not some kind of signal transmission and reception.

I will start by describing probably one of the best telepathies of my life, being actually unique among my telepathy experiences in that it took place across continents, this being one more factor in showing that the signal transmission/reception theory is unlikely to be the way telepathy happens. At one point I had a girlfriend from India, still my friend today. I am from Europe. We got together on social media because of our common interest in consciousness. After a while we decided to meet. We first met for a couple of weeks in India and then 5 months later another 10 days in Nepal. She clearly was in love with me more than I was with her. Then 4 months later after we met in Nepal, while I was at my home in Europe and she was in hers in India, I had a dream with her. We were travelling in Italy and there was some wedding on the streets and we stole food and people started to scream at us. The next morning, after I woke up, I had some messages from her in which she has telling me about a dream that she had over the night. She dreamed of travelling alone and with her mother in a foreign place where people dressed royally and she was stealing bottles of water and getting on trains with no money or ticket and the foreigners were making fun of her for how she looked. I think the similarities are striking. There are 3 common elements: travelling in Italy/foreign place with people dressed royally, both suggesting Europe, stealing food/water, people screaming/making fun. With so many similarities in one dream, I think this can hardly be rejected for not being a telepathy. Some further points to add. We don't usually tell our dreams, maybe few times a year at most. Also, the random initiative from a girlfriend to tell me her dream also happened to me multiple times in the past at moments when also my dream was similar. It somehow seems that when a telepathy happens in a dream, there is also the desire the next day to tell the dream, without even suspecting that a telepathy took place. Secondly, the dreams didn't happen immediately after our travels, so they cannot be considered an immediate effect of our travels. Also, in the meantime we didn't plan any other trip together, so it also couldn't be influenced by such a discussion.

Even though there might still be people that might reject these events, I will nevertheless go further and take them to have been telepathy. There are 2 reasons why I'm doing this. First of all, I'm

actually convinced by the very experience that it was a telepathy (and by countless other such experiences throughout my life). Secondly, if such phenomena are continuously being rejected, no scientific progress can be made. So, I will take a leap of faith and take telepathy to be real and then move forward in providing a partial mechanism for it. So, taking telepathy to be real, the main question that needs to be addressed is: Why isn't it perfect? Having now the previous discussions about how unification works, we are in the possession of a theoretical framework in which telepathy has a place to fit. Since our consciousness is not an indivisible eternal entity, but rather a unification of countless other consciousnesses, then actually telepathy IS perfect, just that it is not perfect between all the consciousnesses that compose a particular higher-level consciousness. Some consciousnesses from a person unify perfectly with some other consciousnesses from another person, but beyond these unifications, each higher-level consciousness adds on its own other consciousnesses to the unification such that the final higher-level experiences are different, though still sharing obvious similarities. In this process we also encounter unformal properties at work. It seems that a consciousness can unify with multiple different consciousnesses at the same time, without those consciousnesses being unified between themselves, so we don't have transitivity. The idea of "stealing something to eat" was unified with both the idea of "food" and the idea of "water", while "food" was not unified with "water", so 2 different final experiences resulted. Even more so, while the idea of "stealing" was unified in the idea of "stealing something to eat", it was further unified along an yet another branch with the idea of "train tickets". We are spotting here the ramification of emergence, but in a new interesting way, namely this time ramification going its way in distinct independent higher-level consciousnesses.

We see that having the theoretical framework of unification, telepathy turns out to be just one of the manifestations that unification is capable of. Because of the unformal nature of self-reference, consciousnesses are able to unify parts of themselves, while them themselves still keeping their unique identity. This is because intermediary-level consciousnesses that are part of a holarchy have as much independence and power as the highest-level. Since each level of consciousness is self-reference itself, then each enjoys the same properties, provided of course that are not constrained in specific ways by the other consciousnesses from their level or different level.

Conclusions

Starting from the most mundane phenomenology of consciousness, like seeing the colors and objects of everyday life, we concluded that experiences are structured on an emergent holarchy. Then in providing a theoretical framework for the emergent phenomenology we uncovered self-reference and its unformal nature in which apparent contradictory properties are living their lives all at the same time. Then in getting into more details in how the interactions between the unformal properties plays out, we got the ability to explain unification and then even further we provided a mechanism for telepathy. Bringing so many phenomena of consciousness together into a coherent framework can only show that the analysis in this paper is on the right track in bringing a solid starting point for a future science of consciousness.

Some of the main problems that remain open in relation to the subject of this paper, are about what exactly determines consciousnesses to unify. This is seen both in the unifications that happen in everyday life, like how are we able to both see and hear, and also in what exactly determines certain consciousnesses to have telepathy. One such reason appears to be love or more generally, emotional bounding between those consciousnesses. What exactly is about emotional connections that are leading to unifications to occur is a subject on its own right and is beyond the purpose of this paper. But together with other psi phenomena, like precognitions or apparitions at the moment

of death, they all seem to involve things that are meaningful in the lives of the persons having such experiences. Therefore, in moving beyond giving mechanistic-like theories for consciousness, a further step in understanding consciousness is to understand the nature of meaning and how it drives life. This paper does a first step in that direction in showing how the deep workings of consciousness happen in the unformal realm, thus making consciousness more “alive” and not subjected to strict rules in the way present-day science hopes to capture the world. Some of the next steps would be in determining how exactly the unformal properties are constrained such as to not give rise to total chaos but to actually give rise to a coherent and meaningful consciousness. One starting point would be to study more in depth the type of errors that we discussed in this paper, to see how exactly the degree of intending meaningful results leads to them being actualized as intended and not allow unification to falls into disarray and unify randomly.

In the end, even though the unformal nature of self-reference will forever forbidden us to completely understand ourselves, acknowledging this limitation that lies at the core of our being can actually bring us more understanding about reality and who we are than trying to do science in the strictly formal way that has been done so far throughout history.