**Chapter (6): New perspectives on consciousness: What should a theory of consciousness (TC) look like?**

I shall now suggest several intriguing perspectives on CΨ. These are based on interesting observations/interpretations, which have been discussed to some extent in the professional literature and the preceding chapters. The innovation here is in the “*proposed* CΨ-*perspectives”*, which are conclusions I have drawn from these observations/interpretations in line with my worldview related to science in general and the complicated subject of CΨ in particular. I drew these conclusions with the help of a process called “inference to the best explanation” (e.g., Lipton, 2005). (However, it seems that the process is much more complicated than it sounds in the literature.) These new perspectives do not constitute the foundations for developing a new theory of consciousness (TC). Unfortunately, I am unable to do this. They should be seen perhaps as guidelines for the future development of a successful TC or as sub-goals. In short, these new perspectives may help identify certain interesting requirements for developing TC.

I will first explicate the selected observations/interpretations of CΨ, and then I will explain how I arrived at the *proposed CΨ-perspectives*.

 **Observations/interpretations of CΨ: clarifications and reasoning**

I will now list those observations/interpretations of CΨ, which were discussed in one way or another in the previous chapters. As seen below, this list does not include any direct objective empirical concept of observation. It is true that there are no pure observations, observations that are not influenced by certain theoretical approaches. In other words, observational concepts are “theory-laden” (e.g., Rakover, 1990). However, I offer much broader concepts than observational concepts in the following list. They are empirical generalizations, conclusions, and theoretical constructs related to empirical observations of the phenomenon of CΨ. This set of “observations/interpretations” seems extremely important for understanding CΨ.

1. *Evolution*: CΨ is a certain crucial quality that has been developed in accordance with the theory of evolution.
2. *Generality*: CΨ is not connected to any specific mental state (MS), behavioral phenomenon, stimulus, or response;
3. *Measurement*: CΨ has no natural units of measurement as there are for distance, weight, and stimulus and response;
4. *Meaningfulness*: Without CΨ stimuli in the world have no meaning;
5. *Energy field*: CΨ is similar to an energy field (e.g., electromagnetic) because CΨ includes many mental states (representations) that have fulfilled a particular predetermined condition (these will be specified later, in Chapter 7);
6. *Unconscious states*: While relatively few mental states are conscious, this does not mean that the rest of them are unconscious.
7. *Live-creatures’ correlation*: CΨ is associated with live creatures, not inanimate entities and plants.

I will now justify and elaborate on each of the seven viewpoints.

(1) *Evolution*. Many researchers believe that CΨ developed according to the theory of evolution (the Darwinian process of natural selection). The main debate in the literature is about when CΨ originated in animals (e.g., Blackmore, 2013, 2018; Feinberg & Mallatt, 2016; Merker, 2007). Many researchers believe that CΨ emerged with the evolution of the cerebral cortex; Feinberg & Mallatt (2016), on the other hand, suggested that sensory CΨ began much earlier and therefore applies to vertebrates, cephalopods, and arthropods. In a similar vein, Merker (2007, p. 80) reviewed evidence and functional arguments he claimed were “not easily reconciled with exclusive identification of the cerebral cortex as the medium of conscious function.”

Be that as it may, it seems to me that sensory (primary) CΨ developed through an evolutionary process and was somehow created by the brain (probably in its most rudimentary form). Therefore, it can be researched using the methodology of the natural sciences. This approach rejects ontological dualism and sees the fundamental problem of CΨ as follows: What mechanism creates CΨ in the brain? This question remains unanswered.

(2) *Generality*. Consciousness is not related specifically to any particular idea, thought, object, stimulus, or response. Individuals are aware of what they perceive, of what is happening in their external and internal worlds, at the same level of CΨ more or less.

 Furthermore, given the generality of CΨ, one may propose that there is *no* correlation between CΨ and intelligence, level of education, or degree of knowledge. One may *not* suggest that intelligence increases as a function of the level of CΨ or vice versa. A highly educated person and an ignorant one have similar levels of CΨ when they wake up in the morning (see Koch, 2019). In addition, Doering et al. (2021) suggested that it is difficult to distinguish between changes in CΨ and changes in cognitive processes because these two appear together. Therefore, it is possible to attribute the cause of a behavioral change not to a change in CΨ but to a change in a cognitive process or MS.

(3) *Measurement*. The empirical measurement of distance has all the mathematical properties of that theoretical concept. Everything that is said theoretically about distance can be verified by precise and empirical measurements. For example, if it is predicted that a bullet will travel 100 meters in a given time, the empirical measurement will show that this bullet has indeed traveled exactly 100 meters in that period. The theoretical units of measurement (meters) are the same as the empirical units of measurement (meters). Yet units of measurement have not been discovered for CΨ. While stimuli or responses can be indexed objectively (e.g., number of correct responses, reaction time), CΨ cannot be measured in this way. Even the concepts of reaction time and verbal reports are problematic as indexes of CΨ since they do not reflect it exactly. Reaction time, which is used to indicate the duration of a conscious cognitive process, is not reliable because, among other things, it is very difficult to distinguish between conscious and non-conscious processes using this index. Verbal reports cannot guarantee that they precisely reflect the speaker’s inner world, the content of their CΨ (e.g., Ganez, 2014; Irvine, 20213a,b). For example, a verbal report cannot exactly describe a visual image, and CΨ is often influenced by the reporter’s desires.

A human’s state of CΨ may regard thousands of stimuli, reactions, thoughts, and feelings. In many cases, while a stimulus and response can be measured (e.g., light intensity, speed of response), it is not possible to measure degrees of CΨ of these concepts. The individual may say that the light is blinding, but they may find it hard to separate their perception of the light (as blinding) from their CΨ of this, their awareness of the intensity of the light. Given this state of affairs, it is no wonder that the measurements used in psychology do not relate to CΨ itself. These measurements are devoid of any element of CΨ. For example, when measuring the number of correct responses given by a participant in a study (by pressing the appropriate key), this measurement does not express the subjective conscious feeling of the individual but rather records a motor movement (or a verbal report): pressing one key or another.

The fact that to date no measurement units for CΨ have been discovered makes it very difficult for experimenters to manipulate this variable directly. We know that levels of CΨ vary according to the context, for example when a person is awake, asleep, alert, tired, under the effect of anesthesia, or in a coma. Still, it is difficult to find independent variables that can be manipulated experimentally with direct effects on CΨ. Therefore, it could be suggested that changes in behavioral states result from changes in MSs or appropriate cognitive mechanisms, not changes in CΨ itself. Furthermore, even if we were fortunate enough to discover variables that affected CΨ itself (e.g., through the administration of drugs or magnetic pulses directed to the brain) it would still be difficult to distinguish between their effect (a) on certain neurophysiological-cognitive processes in the brain, which are connected somehow to CΨ, and (b) on CΨ itself. In this respect, one may suggest that changes in levels of CΨ are just a reflection of changes in neurophysiological-cognitive states.

(4) *Meaningfulness*. Rakover (2021a,b) suggested that CΨ is a necessary condition for understanding and having a sense of meaning of life. Rakover (2021b) proposed that without CΨ an individual simply cannot understand their own actions. One can build a robot that can be used to teach students classical physics most efficiently. However, the robot has no understanding of what it teaches; it comprehends neither the students’ questions nor its answers. It simply matches questions to answers stored somewhere in its mechanical memory.

 Rakover (2021a) suggested that CΨ endows mental representations with life-meaning. He distinguished between two types of life-meaning: innate and acquired. The innate meaning is related to the perception of sensory stimuli, such as those linked to sight, hearing, feeling, pleasure, pain, and fear. When a person sees, for example, a landscape, they are conscious of the landscape along with the innate feeling of being alive. I call this the “aliveness-feeling”. Without CΨ the feeling of being alive disappears. The basic argument is that perceiving sensory stimuli consciously is what gives the individual the aliveness-feeling, which is natural and inborn. (However, note that people do not constantly say to themselves “How wonderful, I am alive!”, just as they do not constantly say to themselves, “How wonderful, I am breathing air!”.)

 The acquired life-meaning refers to customs, values, traditions, and norms that society transfers to its members. The ordinary meaning is related to all the usual modes of conduct that each member of a given society must learn to function well within that system. The extreme meaning is related to extreme modes of conduct appropriated by an individual from an early age in special emotional rituals, perhaps linked to the learning of religious, social, and political doctrines. While sensory perception gives the individual the basic meaning of life (the sense of being alive), the acquired meaning offers the individual a way of integrating into the society to which they belong.

Consciousness enables understanding and gives meaning to life. It also attributes meanings to stimuli in the world. For example, a red rose is not just an object like any other in the world but something that carries meaning: it really exists in the world and has unique properties. It has a particular shape, color, smell, and function. Above all, it is something real.

(5) *Energy field*. The perspectives of *generality* and *meaningfulness*, as described above, suggest that CΨ may be illustrated by analogy with an energy field. In this way, one can understand how CΨ is unrelated to any specific phenomenon, and how CΨ induces meanings and understanding of certain mental states. Thus, I adopt the *metaphor* of CΨ as an energy field, similar to an electromagnetic field (e.g., Jones & Hunt, 2023; Van Gulick, 2022, subsection 2.3.) However, it should be emphasized here that I do not accept that any electromagnetic theory presents a successful explanation of CΨ (for a critique, see, e.g., Jones & Hunt, 2023; Uttal, 2005). Given this, the following question arises: In what ways can CΨ be likened to an energy field?

First, as the previous chapters showed, theories proposing that certain processes in the brain produce CΨ have been severely criticized. Therefore, it seems that another theoretical proposal has to be considered and I believe the idea of an energy field may be useful and effective.

Second, many observations suggest that CΨ applies to a vast diversity of cognitive representations (e.g., stimuli, responses, sensations, feelings, and thoughts). However, it is difficult to see how a particular type of brain mechanism could produce or constitute CΨ of such a huge array of cognitive states. Intuitively, it seems easier to comprehend that under specific conditions any cognitive representation that appears within the sphere of the “energy field” of CΨ is illuminated by the individual’s awareness.

Third, without CΨ a person loses almost all their functions (and in many cases, loss of CΨ means death). It is difficult, though, to accept that consciousness can be reduced to physics by pointing to a certain brain region; in that case, damage to a specific mechanism in the brain supposedly responsible for CΨ would completely incapacitate a live person. Interestingly, humans can be conscious even if they lack a cerebral cortex. Review articles by Doerig et al. (2021) and Merker (2007) described cases where humans without a cerebral cortex were conscious, even though several neurophysiological and cognitive functions were impaired. Furthermore, research has shown that the oldest part of the brain, the limbic system, which other animals have too, handles functions related to CΨ such as memory, emotions, and sexuality (e.g., Blackmore, 2013).

Finally, while it is possible to manipulate an individual’s brain processes and obtain results based on their subjective reports, it is not clear what such reports indicate. Changes in brain processes could affect the report or CΨ itself or both. On the other hand, the idea that CΨ is like an energy field may allow for the possibility of finding some measurement of CΨ, which in principle would make it possible to check the relationship between changes in brain processes and changes in the “energy field” of CΨ.

(5.1) *The contra-zombie argument*. If the energy-field analogy to CΨ is correct and if this analogous energy field is required for the operation of various systems that keep an individual alive, it would be difficult to accept the idea of a philosophical zombie. Why? Because such a creature cannot exist and function exactly as a living human without CΨ. Without CΨ a large number of normal human systems stop functioning, such as the ability to stand on one’s feet and experience the feeling of being alive. (As mentioned earlier, in most cases a complete loss of CΨ means death.) According to Chalmers (1996), a zombie is defined as: “someone or something physically identical to me (or to any other conscious being), but lacking conscious experiences altogether”, p. 94.) Many researchers believe that the conceivability of zombies (which entails their possibility) is a threat to physicalism and supports a dualistic approach (e.g., Chalmers, 1996; Kirk, 2023).

The above considerations lead to the following contra-zombie argument, which shows that zombies are impossible since the conceivability argument is based on an internal contradiction:

1. A zombie is a human without CΨ, a creature that imitates human behavior perfectly; it performs all the actions of a live human such as walking, talking, eating, and sleeping. A zombie is an *active* human without CΨ;
2. Without CΨ a human is *inactive* (in most cases this situation indicates

death).

**Conclusion:** A zombie is an *active* creature. However, since a zombie is a human without CΨ, then a zombie is *inactive*. Thus, a zombie is *active* and *inactive* at the same time.

This self-contradictory conclusion invalidates the conceivability of zombies; it is not rational thinking.

 (6) *Unconscious states*. For the sake of simplicity, I will use “SmR” as a unit to indicate the relationship between a stimulus and the appropriate explanatory mechanism and the corresponding response. An SmR unit suggests that a particular response can be predicted and explained by the appropriate stimulus and explanatory mechanism. The use of the SmR unit makes it possible to distinguish among the unit’s parts of which the individual may or may not be aware. As we will see, the distinction between the concepts of being conscious of a certain behavioral unit and being unconscious of it is too simplistic. Here is why. (a) An individual may be completely unaware of all three aspects: stimulus, mechanism, and response. (b) An individual may be aware of a stimulus and response but not the mechanism. (c) Sometimes the individual is aware only of the response or the stimulus. Given this proposal, one may suggest that most SmR units of the neurophysiological-cognitive mechanism do not reach CΨ. (In many cases, the individual is aware of the reason for their action, for example, their desire to achieve a certain goal. However, even in these cases, the individual is not aware of the mechanism that makes it possible to realize this desire.) The appropriate mechanism is to be discovered by careful research. Thus, one may conclude that awareness of SmR can only ever be partial. Here are some examples (for reviews, see Blackmore, 2013; Dehaene et al., 2021; Hassin, 2013).

(a) Unawareness of SmR units: many neurophysiological processes that occur in one’s brain and elsewhere in the body are permanently unconscious.

(b) Awareness of S and R in SmR units: In most cases in daily life an individual is aware of the stimulus and response but not the appropriate mechanism, for example when a driver approaches a red traffic light (the stimulus) and brake (response) to stop the car and avoid a collision. When a person enters a restaurant, they check the menu (stimulus) and order a meal (response) to satisfy their hunger. In both cases, the individual is aware of the stimulus and the response but has no idea of the mechanism responsible for creating the appropriate response to the stimulus.

(c) Awareness of S or R in SmR units: In many allergic reactions such as sneezing, the individual is aware of their reaction to a stimulus but unaware of both the stimulus and the appropriate mechanism. In many experiments where subliminal cues are used, participants are unaware of the stimulus and the corresponding mechanism; they remain nevertheless aware of their responses (given according to the experimental instructions). In such experiments, participants are presented with a ‘below-the-threshold’ stimulus that is not perceived consciously, and the experimenter examines the effects of those subliminal stimuli on several cognitive functions such as perception, goals, reasoning, and decision-making—functions generally considered to be under the control of CΨ (e.g., Goldstein & Hassin, 2017; Hassin, 2013). Often, an individual has clear situational perception (such as being in the middle of an extremely difficult exam or complicated chess game) but does not know what to do. Moreover, in extreme emotional situations an individual may not even be aware of what they are doing (they may be in a state of confusion).

 Considering the above, the following question arises: How do states of CΨ differ from states of unconsciousness (unCΨ)? The professional literature has largely focused on functions that characterize CΨ, not unCΨ. However, many of these conscious functions can be done unconsciously. (Research supporting the claim that unconscious processes can do what conscious processes are capable of doing [let’s call this “unCΨ as CΨ”] sparked a hot debate that I cannot discuss here, e.g., Goldstein & Hassin, 2017; Hassin, 2013; Hesselman & Moore, 2015.) Thus, it seems to me that the fundamental difference between these two states (CΨ and unCΨ) is rooted in the proposition that CΨ is linked to the “aliveness-feeling”, the meanings attributed to stimuli in the world, and the activation of important systems needed for the normal functioning of the individual (see points 4 and 5 above).

This last consideration regarding essential systems for normal functioning requires some elaboration. An important difference between conscious and subconscious processes may concern individual survival. It is highly beneficial that most SmR units do not enter CΨ. If they did, these units would only dramatically lower one’s chances of survival by interfering with the individual’s capacity to adapt to their environment. For example, awareness of all the chemical reactions involved in digestion would impede adaptive responses to the environment. As mentioned above, a person who has lost CΨ cannot stand up; their condition is comparable to that of a plant. In such cases, almost all a person’s functions are blocked and physicians go to great lengths to restore their CΨ and bring the person “back to life”.

Given this approach, how can one understand Hassin’s (2013) idea that unconscious processes function like conscious ones (“unCΨ as CΨ”)? It seems to be overstated. In an experiment involving subliminal stimulation, the participant’s awareness of the experimental procedure and the required response is essential since the experiment cannot be performed without these pieces of information. It could therefore be suggested that consciousness allows individuals to orient themselves in their environment and prepare potential reactions. If this is the case, consciousness is needed for adaptation, otherwise it would be difficult to prepare ready-made responses for all stimuli and situations that appear in a rapidly changing environment. It would be much more effective for an individual to adapt to the multifaceted reality of the world with the aid of CΨ. It is hard to see how a person with an automatic mechanistic system without CΨ could adapt to and survive in a fast-changing environment. A machine cannot understand the relationship between itself and variations in its environment. Rakover (2021b) suggested that CΨ is a necessary condition for understanding. That is, without CΨ the individual has no chance of understanding the world or their actions. For example, consider a person who drives to work every day automatically without even remembering events that occur on the way. If, one day, the road becomes blocked, that person will rely on their CΨ to understand how to get to work via an alternative route.

Following the discussion above, I propose that all the stimuli absorbed by an individual’s sensory system go through several stages of unconscious information processing. Some of the final results of this processing enter the state of CΨ and the individual receives a vivid impression of their environment. In special cases, such as in experiments with subliminal stimuli, it is possible to probe subconscious processes and learn something about their nature. Thus, one may suggest that both conscious and subconscious processes are important for the person’s ability to adapt to a fast-changing environment.

(7) *Live-creatures’ correlation*: This is an empirical generalization, based mainly on my observations and knowledge I gained in my studies, especially from extensive reading. It seems to me that only living beings composed of organic matter and possessing a nervous system (as in humans and animals) have CΨ. In line with previous chapters (4 and 5), it follows that in order to fully explain behavior, one has to take into account both mechanistic and mentalistic explanations (since they are conscious creatures). In contrast, inanimate entities (such as earth, stones, iron, and diamonds) and plants (trees, flowers) are not endowed with CΨ. Therefore, a full and satisfactory explanation of their behavior is mechanistic (and there is no need to complete our understanding of this with a mentalistic explanation).

In the philosophy of mind, this generalization stands in contrast to the approach of panpsychism, according to which the mind, CΨ, and tiny elements of CΨ are basic properties of everything that exists in the natural world. Several variations of panpsychism have developed from different theoretical-philosophical viewpoints, the coverage of which is beyond the purposes of the present book (e.g., Goff et al., 2022). Nevertheless, I will refer to the position of integrated information theory (IIT) on panpsychism since this was discussed briefly in Chapter 2. The following quote from Koch (2014), who contributed to this theory (founded by Giulio Tononi), says it all: “Any system that possesses some nonzero amount of integrated information experiences something. Let me repeat: any system that has even one bit of integrated information has a very minute conscious experience.” That is, a minimal degree of CΨ can be discovered in an inanimate being (a thing) if it shows the slightest degree of integrated information. Koch (2014) concluded his article by saying: “Tononi’s theory offers a scientific, constructive, predictive and mathematically precise form of panpsychism for the 21st century. It is a gigantic step in the final resolution of the ancient mind-body problem.” I do not agree with this and in Chapter 2 I discussed a number of criticisms against IIT. (Anyone who wants to read about criticisms against panpsychism may refer to Goff et al.’s review published in 2022; many other articles and books on this topic are easily accessible through an Internet search.)

***The proposed CΨ-perspectives*: What should a theory of consciousness (TC) look like?**

What is required from a future TC? What important issues must this theory address? Of course, in an ideal world, I would have established the conditions in which a certain neurophysiological system in the brain succeeds in producing CΨ. If I had been able to do that, everything would have looked different and this book would not have been written either. However, as mentioned, I am unable to do that. Therefore, in what follows I will highlight several secondary points that should be considered in the attempt to remove some of the mystery surrounding CΨ. Two main ideas emerged after much reflection on the above seven observations/interpretations, which the future TC has to address: (a) the transition from a state of non-CΨ to CΨ, and (b) the analogical conception of CΨ as an energy field. Below I expand and justify each of these ideas.

1. *The transition from a state of non-CΨ to CΨ*.

The idea of the transition from un-CΨ to CΨ is based on the previous discussion in section (6): *Unconscious states*. The future TC should be able to account for the observation that every stimulus received by the human sensory system (and by the sensory systems of some animals, such as monkeys, dogs, and cats) first undergoes nonconscious information processing, where some of the results of this processing may pass into a state of CΨ. Furthermore, the TC also has to address changes in both directions: the transition from CΨ to un-CΨ. For example, consider the case where a person suddenly remembers an event they had long since forgotten. Information that was previously conscious became unconscious (forgotten) before being recalled back into consciousness (remembered).

1. *Consciousness as an energy field*.

The idea of using the analogy of an energy field to better understand CΨ is based on the above list of observations/interpretations. It is a winding road but it ultimately leads to the conclusion that an energy field seems like a fitting theoretical construct. Let us begin with *generality*. That CΨ is not related to any specific stimulus or response can be accounted for by the assumption that any mental state (MS) that enters the energy field becomes part of the individual’s conscious awareness. All MSs, whether linked to seeing, hearing, feeling, or thinking, enter CΨ as soon as they arrive in the energy field. Thus, the individual becomes aware of diverse phenomena in the world.

Furthermore, CΨ itself is likely indivisible; it can be seen as a uniform field encompassing any MS. The divisions we perceive in a certain visual field, such as facial features in a human face, do not arise from the division of CΨ itself but from the different levels of facial information processing. This comment brings us to the next issue.

*Measurement.* To date, no method has been found to measure CΨ and hence there are no units of measurement for it. Since CΨ is not measurable, it is difficult to manipulate it directly in a laboratory experiment or to observe the changes that occur in it naturally. As stated above, changes in various conscious behavioral phenomena can be attributed to changes in cognitive or neurophysiological mechanisms and not necessarily to direct changes in CΨ itself.

*Evolution.* The energy-field analogy is consistent with the idea that CΨ developed in an evolutionary process. As far as I know, there is no evidence that this idea contradicts what has been proposed scientifically. Therefore, it seems that the phenomenon of CΨ can be studied using the methodology developed in the natural sciences. Furthermore, the current absence of measurement units for CΨ may only be a temporary matter; this could change, depending on certain unknown scientific developments. I suggest that the empirical generalization “*live-creatures’ correlation*” supports the idea that the accepted methodology can be used for research in CΨ because this generalization applies to what exists in our world: those phenomena that need a mechanistic explanation only and those that need both mechanistic and mentalistic explanations.

*Two important properties of* CΨ *as an energy field.* (A) *Minimal energy:* Although I cannot suggest how this energy field is created by the brain and how it functions (i.e., how it makes MSs conscious), it seems to me that its existence is crucial for humans and other animals (e.g., rats, cats, and dogs). As soon as this energy field stops functioning, an individual almost completely ceases to function on behavioral and neurophysiological levels: A person who has lost CΨ is unable to stand on their feet and cannot feel pain or any other sensory sensations (similar to the effects of general anesthesia). Thus, the energy field has to function continuously at some lowest minimum level (since at high energy levels, brain dysfunctions may occur) so that the functioning of many neurophysiological-cognitive processes will continue normally without interruption. I may even speculate that sleep, among other things, regulates the energy field’s levels to this end.

(B) *Meaningfulness:* Consciousness is not only important for the continued normal activity of the individual, but it is a necessary condition for the most important thing in human (and animal) life, namely, the feeling of being alive. The energy-field analogy is consistent with the idea that CΨ gives meanings to stimuli in the world and the behavior of humans and animals. The content of any MS that enters this field becomes part of the individual’s conscious awareness and takes on meaning. There is no meaning without CΨ. I assume that conscious sensory sensations innately include what I have called the aliveness-feeling (e.g., Rakover, 2021a). I believe that even animals that consciously perceive visual stimuli (auditory, etc.) feel a sense of being alive. (However, note that this, for obvious reasons, does not entail that they are constantly saying to themselves, “I am alive, I am alive”. Even a person who has the feeling of being alive does not tirelessly repeat this to themselves.) Furthermore, Rakover (2021a) assumed that social norms, customs, and goals meant to help individuals lead fulfilling lives are not acquired without CΨ. The meanings attached to these ways of living depend on humans being in a state of CΨ.

*In conclusion*: What I have described above are the foundations on which I have developed an outline for a theory that tries to answer the important question: How does a non-conscious MS transform into a conscious MS and vice versa? This will be developed in Chapter 7.

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