Summary of the
Theory of the brain function

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Translated from the original in Spanish

The theory of the brain function that I have proposed and tried to summarize here, represents the culmination of a long personal search to deduce an organic inference that likely causes the phenomena usually attributed to mind.

This project started naively, since initially we only wanted to find a simple conceptual explanation, from a biological point of view, on what could be the determining factors in the emergence of human capacity to generate belief factors. But considering the variables it became clear that it was necessary to review previous steps, increasingly distant from what I set out at first, even to consider the existence of some evolutionary mechanisms that maybe they were passed overlooked by other thinkers or not sufficiently understood.

Finally the project was transformed into something much larger, complex, and ambitious, since eventually it encompassed (conceptually) the majority of brain processes related to the generation of behaviors, among which are the formation of memory, thought, the formation of ideas and beliefs, and finally as a byproduct, consciousness.

The arguments used to develop the theory and the evidence that supports it has been obtained using a very different deductive approach used in previous studies, since we start from scratch, considering the human being as we really know it an organic system, nothing more, not from the end, as indeed happens when we begin by assuming that human abilities should have a very special and even extraordinary origin. In our work this means that we assume no previous explanations of many of the properties or characteristics of the supposed mental faculties of humans. We simply followed the possible organic tracks and were tying ropes in the end nothing and we encountered had some resemblance to the dominant beliefs about it.

Theory of brain function (abstract)

To explain this theory in a nutshell or make a brief description of it, it is difficult; since the concepts used to designate specific neuronal processes, such as memory, thought, or consciousness, have little to do with what is meant by them in other theories or common language. Thus, in the absence of platitudes or easy parallels between the contents of this and other theories, his thorough understanding will only be possible reading all the arguments set out in the full text.

This summary only covers the description of the principles on which it is based. These are basically two, the first search and the beginning somatic significance. They allow determining the origin of the formation and function of neural networks associated with acquired memory, which will derive all other related phenomena, such as thinking, the formation of ideas and beliefs and ultimately consciousness.

Principle of search

It is very interesting to note that the first principle on which this theory is based is not related to the human species in its particular specificity, but with the living beings in general.

The search as a dynamic process is what allows an individual of any species to interact with their environment, since any movement or physiological process of interaction with the outside world responds to the operation of mechanisms whose specific function is to get something that, it being essential for the implementation of the metabolic processes, is independent of the system itself. Consequently, a search wouldn't be a search, if the biological function that depends on obtaining certain substances or environmental conditions could obtain directly, mechanically and automatically as part of the process performed systemic, such that the outside there of, where are these substances and conditions, would represent nothing more than an extension or projection of the organic system itself, like happens to breathing air, we must not look simply. However the reality is actually organic systems have evolved mechanisms as search intermediaries, more or less independent of the basic system functions, and whose specific function is to link the system with the environment, providing an advantageous position.

The searches will be activated by the system when any of the processes required to obtain something from the environment (such as water, food, family, etc.), or modify an external condition (like scratching, away from sunlight, etc.). Consequently, states that are systemic processes will identify and activate the mechanisms for the type of search to be executed.

Search mechanisms are those that provide the system with the ability to generate interaction with the environment, such as those of (sensory) recognition; translation, various movements and even the orientation of growth as in the case of plants; positioning mechanisms (equilibrium location), apprehension or absorption, etc. This interrelated act sequentially allowing the system advantageously positioned to maintain and prolong their existence. However being intermediates for the basic system functions, not essential for viability in absolute terms, the system as a whole. Proof of this is that you can have different degrees of motor disability, and even almost total lack of mobility and still survive (albeit assisted), the same applies to other mechanisms such as sensory, i.e., they can be blind , deaf, mute, partially insensitive to touch, you can lose memory, etc. and also survive. This means that the mechanisms are added intermediaries evolutionary search, which have been previously developed around functional homeostatic systems.

Understanding the search processes as expressions of a basic principle, can clarify the relationships between certain physiological processes that are normally considered or considered separately or independently. Thus we can understand that each individual behavior, executed by any agency, will always be part of a wider sequence within the context of a search. Therefore, behaviors cannot be considered isolated, random or chance events, however, its implementation will be framed within a coherent continuous sequence, which eventually helps to meet some purpose or organic condition, and otherwise nothing would prevent, for example, the sudden, simultaneous activation of different chaotic and disjointed movements. Let's say that while it may seem that animals "out there" can do this or that, this is not exactly true. Any conduct by more pointless or strange it may seem, is part of a larger sequence, determined by a search type.

Each type of search with your specific behavioral sequences has been refined through natural selection, as the most advantageous for the objectives in a given context form. The adaptability and dynamic process then depend on the specific way in which each individual or group of individuals to use the potential offered their search mechanisms to identify and exploit opportunities enabling them to achieve those goals. Since, except for the breathing of air, getting others depend on a probabilistic relationship where any small variation in the use of skills, or changes the context in which they are used, can mean a significant difference in the results.

We believe that evolution will operate mainly in the use of emerging, non-specific, or "emerging" mechanisms (perhaps by mutation), but when used promptly (or opportunistically), as should have happened, for example, the first photo sensitive cells, can generate a systematic advantage over the use of specialized prior gradually becoming new specializations, such as vision. The use of the advantage becomes systematic, not random, but because the mechanism that provides it will be used again and again in the same type of search that proved effective, making consistent competitiveness body operating such resource search (behaviors associated with successful searches tend to be repeated by all organisms, from ants to humans).

In our theory the basic behavioral sequences will consist on genetically neural networks and subnets structured so that its activation is automatic or instinctive. This is particularly evident in species with simpler nervous systems (such as insects), in which it is easy to observe the fate of each individual behavior within the context of the search you performed. However in more complex organisms we will see increasingly dispersed or seemingly inconclusive behaviors regarding a specific systemic objective.

The greater dispersion and diversity of behavior in more complex species, particularly in humans, should a new mechanism (evolutionarily speaking) conduct training, learning or memorization.

The evolutionary emergence of the ability to memorize or learn does not imply a new mechanism in the interaction with the environment, different from the searches. Systemic requirements remain as the initial cause, and instinctive behaviors, the only possible at the beginning of the relationship of all organisms with their environment. The difference is that species with the ability to learn new behaviors phased in throughout his life, however without these never become fully replace instinctive, even in the case of humans.

To the extent that some species evolutionarily acquire greater capacity to learn, will be interested in increasingly perceptible elements not directly related to systemic objectives, being human beings who spend, by far, most of time to search things that have nothing to do with systemic goals and yet, as discussed below, are caused by the operation of the same mechanism that allows memorization.

Then, if it is true that instinctive behaviors are structured in a neural network base on the genetic, and are automatic activated, learned behaviors must also be structured in a different type of neural network, which gradually collected through direct sensory perception, noticeable effects experimentation with the environment.

However, for a new neural network to be formed it is necessary, first, the existence of neurons (brain) "free" or not genetically linked together (such as instinctive behaviors), and which are capable of gradually link according to what is experiencing sensory provides, which is what we know we can remember. Second, the structure of these networks must

replicate the order in which we perceived objects and situations during journeys search; therefore, they are literally conformed as memory routes, the registration of relations stored parallels what is in the reality. These routes and sub-routes constitute memory memories formed during each particular way, each related in sequence to the next, very similar to how they were perceived and how they later recovered.

Again we see the search mechanism involved in memory formation, providing sequential and order (syntax) at the memorized event is precisely why all memory can be recovered within a spatio-temporal context defined.

Somatic principle significance

In our theory the set of networks and neural subnets, the activation trigger instinctive behaviors, constitute what we call genetic memory **specific** responses, since all instinctive behavioral response has evolved to produce a specific effect of the body to an external condition, hence the name. In contrast, the set of neurons that has the potential to react to direct sensory perception, forming networks for the new memories, we call genetic memory **nonspecific** responses, this because you cannot know what each person will remember or the individual sense of the behaviors associated with those memories. These neurons are a potential memory formation; however everyone builds their own according to their own experiences, so the networks they materialize will be strictly individual and unique.

Acquired memory shall consist of all the networks actually formed, or memories built by the activation and binding of neurons in the genetic memory of nonspecific responses of each individual.

These neurons will be activated for the first time when a sensory signal generated by the perception of, until then, an unknown object match the genetic value of reaction of each neuron in particular. The organic response to that reaction will be to produce a change of state in the system, or somatic alteration, or sensation, caused by glandular issue of stimulants. The sensation is produced in turn, one of two possible behavioral responses (generic): approach (acceptance) or away (rejection), compared to the object that triggers the sensory signal. Consequently, the principle of somatic significance lies in the ability of the organism instinctively and automatically generates a behavioral response to the perception of a previously unknown object (the "active ingredient" in memory formation).

The information that makes the neuron respond with a value of somatic significance to an object, or equivalently, the value of representation of an object to a particular individual is in the genetic programming of that neuron. This value basic representation is irreducible, since it cannot be explained or due to any other process than evolution itself, and all that the individual has, in the first instance, is to react to the object. Neurons activated by direct sensory perception during the search paths, they will be linking together to form the corresponding neural network to route followed the path memory and can be retrieved from that moment, by thought, in the form of memory (cannot remember what has not been experienced).

If the neurons provide the information, then knowledge or knowing is given by the causal relationship between the perception of object that triggers the feeling, and behavior it causes. It may not sound much, but the unit is simpler and more elementary knowledge, whose complexity increases exponentially when literally new memories and behavioral responses join.

An example, a baby sees an object that causes a pleasant feeling that leads him to approach, also say that the object is hot, well, the baby after touching quickly remove his hand, after feeling a sense of avoidance (discomfort , pain). We then have a behavioral sequence associated with two noticeable features of the same object. Question: what can be learned or memorized by the baby about that object, for nothing more than the sequence sensation-sensory perception conduct has caused her, that's all and is sufficient to avoid touching it again, that is the knowledge or skill that you have acquired. If to the previous situation we add the possibility that his mother insistently repeat the word hot while she comfort him, it will be added to the memories network the sound of the word. Then we can say that thanks to the causal relationship between sensation and associated behaviors, the body can know what is what comparatively (relative to others), but cannot know why neurons activate these reactions and also if that knowledge is more than the feeling itself. No one can know or explain why an object that has never seen before striking him nor understand the intrinsic nature of it, from the feelings that cause you.

The concept of feeling collects perfect and unequivocally the somatic effect produced by neurons in the genetic memory of nonspecific responses when activated, however the same concept does not indicate as clearly and precisely, the direction and sense of behaviors that activation may occur. However there is another, much more widely used than sensation that specifically refers to the behavioral assessment of somatic effects caused by activation of these neurons, tastes.

The concept of taste can represent (explicit) by different categorizations (also conceptual), the magnitude and direction, a posteriori, behaviors that effectively result of sensory perception of an object or situation. So a "beautiful" or really

desirable object will cause approach behaviors, such as: prolonged observation, physical contact such as touching, kissing, handling, possession, etc. Then any conceptualization regarding peer-sense behavior is back to perception. Tastes are therefore not an organic phenomenon in itself, but only the assessment (subjective to the observer and objective for the percipient or "feel") the effect of feeling-behavior organic processes. Therefore it is very difficult to define (and understand, particularly those of others).

Like all memories will be structured in networks that bind a large number of neurons, each will also be constituted by different values of significance, or simplifying, values of taste, since the same memory may be associated with very different perceptible elements together, such as in the case of a landscape, which may include aspects pleasant and unpleasant. The interesting thing is that the values of taste will be added (or subtracted) within the network that contains them, since each has a "weight" within that network; therefore all memory will be worth all tastes corresponding to the partial sum tastes. The greatest value of taste (positive) of a memory or set of memories is the organic active assessment first choice among the various route alternatives memory necessary for continuing or completing a search. Example, given the need to go to the bathroom always think and seek the most pleasant, comfortable option, but if not available a place, will continue with the option of lesser value of taste and so on. Moreover, according to the context, the first option could also opt for the cleanest bathroom in a group of possibilities, either by proximity, etc. Anyway, if there are choices to make, we will automatically attempt an election, and all based on the values of taste.

Humans believe we can decide the margin of biology, however all knowledge is made of values of taste, which origins are in the genetic information. So when we decide on something, all you do is explicitly express what we like or dislike least, among the many options offered by the set of memories we have. Even the ideas constructed by thought represent values of taste, since whatever it's content, all without exception have formed from the combination and recombination networks memories or fragments thereof and of course all represent some value of taste. If someone has an idea they consider "very good" they will insist on it even if is impossible, because tastes have nothing to do with material reality of things in themselves. The sum of values of the neural network like a good idea built by thought, usually given a value greater taste or much higher than can be obtained from neural networks formed by direct sensory perception. So often, humans will prefer the fiction of ideas than reality itself. In fact, they constantly modify the elements of that reality to achieve the greatest possible satisfaction (cutting, pulling, putting, decorating, arranging, etc. etc.).

However, the most important effect caused by the mechanism that generates the acquired memory, which is capable, by itself, enabling searches for the sole purpose of obtaining sensations, and, bearing in mind that the memory acquired as a search mechanism has some systemic autonomy, then search that will enable distinct and independent (although usually complementary) of systemic therefore this second causal search will allow you to find not only the necessities of life, but mainly that which produces satisfaction. In short, the infinite possibilities that offers the ability to seek what is not essential for living is what characterizes the human species.

Conclusions

In this brief summary, we have shown how the proposed principles allow the understanding of the direction of the organic processes, in a way that besides supporting life, may at the same time be capable of generating functions typically attributed to mind. Then, unlike all theories and hypotheses we know, ours doesn't requires assuming the existence of a separate mental entity's own brain functions, nor depends on emergent processes or epiphenomena. In our explanatory model there is no chance for the Cartesian dualism mind brain, and in this sense this theory is radically different from all that has been said and written about it.

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Agosto 2014