



**Intuitions about neuroscientific problems of the cure in Plato:
The communication between soma and psyche in the Charmide
and in the Republic**

**Intuições de problemáticas neurocientíficas acerca da cura no
Cármides e na República: A comunicação entre soma e psyche**

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Abstract

In antiquity, many myths had the function of (re)organizing the psychic life. Starting from subjective elements, myths could directly penetrate one of the most significant and incomprehensible plans of human life: the mind. These elements worked, above all psychologically, for the cosmic and existential (re)organization of human life. Realizing its psychic nuances, the Greeks studied and proposed psychological theories around these images and sought to understand how the mind sustained itself and reorganized practical life from these nuances. Plato not only indicated psychological principles around this issue, he also developed a theory that pervaded, although intuitively, neuroscientific problems. Plato therefore substantiated a theory that sought to support the idea that the *psyche*, when able to deeply understand these mythical images, starts a kind of somatic communication and may unleash a healing process. In this work, this duality *soma* and *psyche* will be deepened under the notion of immune mind and psychic mind.

Keywords: Plato, *katabasis*, *psyche*, *soma*, neuroscience.

Resumo

Muitos mitos, na antiguidade, tinham a função de (re)organizar a vida psíquica. A partir de elementos subjetivos, os mitos conseguiam penetrar diretamente num dos planos mais incompreensíveis e significativos da vida humana: a mente. Tais elementos funcionavam, sobretudo psicologicamente, para a (re)organização cósmica e existencial da vida humana. Ao perceberem suas nuances psíquicas, os gregos estudaram e propuseram teorias psicológicas em torno dessas imagens e buscaram compreender como a mente apoiava-se e reorganizava a vida prática a partir dessas nuances. Platão, nesse sentido, não apenas apontou princípios psicológicos em torno dessa questão, como também desenvolveu uma teoria que perpassou, embora intuitivamente, problemáticas neurocientíficas. Platão fundamentou, portanto, uma teoria que buscou sustentar a ideia de que a *psyche* é capaz de dar início a um tipo de processo de cura, que só é possível a partir de sua comunicação adequada com o *soma*.

Palavras-chave: Platão, *katabasis*, *psyche*, *soma*, neurociência

Introduction

In antiquity, the psychic life is rather imagery and therefore mythical. This enables human knowledge to arise from other states of consciousness (Kingsley 1999, p. 144). And it is precisely in this sense that Plato incorporates mythic elements in his philosophical theories, changing and sometimes replacing them in order to support his theories about the *psyche*. In this regard, the philosopher used mythical images as signs of the existence of the human *psyche* itself imbedded in human history.

A first example is the allusion that Plato makes of a myth of a well known resurrection in the ancient world: the Thracian myth of Zalmoxis, "a divine spirit" (Hdt. *Hist.* IV, 94, 1.)¹, who presents itself to his fellows as a way to

immortality: an image which sustains itself, in the originating report of Herodotus², by the descent to the underworld³, like a dead person, followed by a return to the ordinary world, resurrected. The fundamental belief of the originating myth is that his return implies the possibility of healing the recurring harm in the life of their fellows. In this sense, Plato proposes in the *Charmides* changes and substitutions of elements of myth of Zalmoxis, in order to substantiate a theory about the healing capabilities of the human *psyche*.

A second example is the myth of autochthony that Plato launches in the *Republica*: a recreation of the image of the five races reported in Hesiod⁴. The fundamental belief is linked to a type of

² See Herodotus (*Hist.* IV, 95, 3; 95, 4 – 96, 1).

³ The Greeks called this type of descent *katabasis* (κατά = down; βαίνο = go to/going). The *katabasis* in Zalmoxis is objective, since he, in the original myth, "went down into the underground chamber and he lived there for three years": καταβὰς δὲ κάτω εἰς τὸ κατέχουον ὄχημα διατέτο ἐν ἔτει τρία (Hdt. *Hist.* 4, 95, 4), and it is mourned as a dead man, by the guests (Hdt. *Hist.* 4, 95, 3-4).

⁴ See Hesiod (*Works and days* vv. 109-201).

¹ The original expression is *Zalmoxin daimona* (Σάλμοξιν δαίμονα), indicating that Zalmoxis actually is an intermediate between god and man, in other words, a divine spirit.

cyclic formation of the cosmic eras⁵. In the *Republica*, Plato draws an analogy with the hesiódic myth in order to substantiate a theory of a formative constitution of the human *psyche*.⁶ This is, among many others⁷, a small indication of a *psyche* integrated and participatory with the *soma*, and not transcendental as the platonic and neo-platonic tradition wish for.⁸

This paper does not aim to discuss whether or not Plato believed in the immortality of the soul. What is expected is to demonstrate that it is not possible to

reduce the whole theory of the philosopher, with regards to the *psyche*, to a belief in the immortality of the soul. In other words, it is intended to demonstrate how the philosopher had neuroscientific insights about a *psyche* that is integrated and inseparable from the *soma*, and about a type of communication that takes place internally between these two parts of the man as a whole. Finally, we try to show to which extent it is possible to relate these insights with neuroscientific trends of the present time.

The psychosomatic process

The dialogue *Charmides* begins with the character Socrates declaring he would learn an "enchantment", (*ἐπωδή*) (Pl. *Chrm.* 155e5) with a doctor disciple of Zalmoxis⁹. However, soon after, this "enchantment" shall be referred to as "beautiful arguments" (*λόγους τοὺς καλοὺς*)

⁵ See Vernant (2008: 27-59).

⁶ In this respect, this is not an analysis of the tripartite *psyche* – rational, irascible and concupiscent (R. 4, 439d4-441a3.) – nor of its function in the *polis*, but it's an analysis of Plato's theory about the constitutive formation of the *psyche* from internal elements: it is from genetic and other elements that Plato, although unknown, perceives the inherent, perhaps, "congenital" existence (*σήμερον*) (R. 10, 609a3).

⁷ Still in the *Republica*, to give just one example, there is the theory of the perceptions of the *psyche*, whose realization is only possible through the *soma*: see (R. 6, 509e1-511a8). Another example can be found in the *Parmenides*, in which the theory of ideas is linked to the natural, sensorial plan: "Forms are in the nature as a paradigm" *τὰ μὲν εἶδη ταῦτα ὡσπερ παραδείγματα ἐστάναι ἐν τῇ φύσει* (*Prm.* 132d1-2) – regarding the translation of *τῇ ἐν φύσει* as "in the nature" and not "of the nature"; see (Iglesias & Rodrigues 2008); (Fowler 1925).

⁸ There are at least three major historical issues in this regard: 1) Aristotle (*Metaph.* 1039a25) uses the term "substance" (*οὐσία*) to indicate the "ideas" (*ἰδέαι*) of Plato as "separate" (*χωριστάς*) entities of the objects of the sensorial plan, understanding the ideas in a transcendent way; in this regard see Mesquita (1995: 106), who seeks to demonstrate the error of this kind of understanding and draws attention to the participatory separation between the intelligible ideas and the sensorial objects; 2) Augustine, to substantiate Christianity, even transmigrates the Platonic ideas to the head of god (Reale & Dario 2003: 95), crystallizing the association of the *psyche* as "soul", and establishing its place in a metaphysical world, the world of Yahweh; 3) Plato's beliefs were widely confused with the Orphic beliefs that underpin the notion of cyclical reincarnation of the *psyche* (as soul) or of its sojourn in paradise; in this regard Bernabé (2011) has been able to demonstrate that the Orphism, in Plato, is distinct from the Orphism(s) itself, as can be seen in dialogues as the *Phaedo*, *Meno* and the *Republica*, to give some examples; – this process of recreation is quite common for the Athenian philosopher and demonstrates that he does not believe in the *psyche* in an orphic sense, he rather searches for a type of verification of signs that the human *psyche* itself left behind in the myths. In Plato, these three issues made the *psyche* appear a substantially transcendent entity, and not a psychic part of human being, in which notions such as consciousness, unconsciousness and "I" arise participatively with the *soma*.

⁹ Socrates reveals to have met a Thracian physician and disciple of Zalmoxis in the battle of Potidea, who had taught him about a "drug" (*φάρμακον*) (*Chrm.* 155e6), which actually is a "herb" (*φύλλον*) (*Chrm.* 155e5) associated with an "enchantment" (*ἐπωδή*) (*Chrm.* 155e5) that would be able to initiate a healing process.

τὸς) (Pl. *Chrm.* 157a4-5) which, processed by the *psyche*, would bring somatic consequences for the sick person.

These "beautiful arguments" are actually a proposal for understanding the Thracian enchantment on a psychic level. Plato seeks to understand the psychic process that is behind the "enchantment".¹⁰ He realizes that there is something in the human *psyche* that can change the outcome of his bodily and mental life. In other words, the philosopher realizes that there is a language between *soma* and *psyche* that is not only crucial to the balance of health, it is also effective in curative measures, as well as it carefully perceives to be responsible for certain types of infirmity.

The theoretical intuition of psychosomatics, centuries prior to the psychoanalysis¹¹, takes a big step for future discoveries about the human mind.

This intuition, determined by the change of the zalmoxian "enchantment" into philosophical "beautiful arguments", gives rise to a scientific discussion of the communicative process between the unconscious forms of *soma* and *psyche*. The *psyche* leads to the perception that human nature keeps in itself a mechanism that converts sensations into images, and from this confluence arise psychosomatic consequences. The proof is that his character Socrates says that it is not enough to just say the zalmoxian "enchantment" in order to achieve the cure of an infirmity, it's necessary to understand it in its entire philosophical beauty¹².

Thus, the zalmoxian descent in Plato is replaced by a subjective notion made in and by the *psyche* itself: the objective descent of Zalmoxis to the

¹⁰ See Entralgo (1958: 163-180).

¹¹ See Robinson (2007: 41); Robinson (2010: 67).

¹² Therefore, Socrates proposes that "without the enchantment, however, there is no effect from the herb" *ἀνεῖν δὲ τῆς ἐπωδῆς ὄφελος οὐδὲν τοῦ εἶη φύλλον* (*Chrm.* 155e7-8). The valuation of the drug is in the "enchantment" which, transformed into "beautiful arguments", presupposes the need to understand the beauty of its words, that is the beauty of the "arguments" of the "enchantment".

underworld, illustrated in Herodotus, is changed into an image of subjective descent, where the mythical and divine element is no longer the curing agent. The human *psyche*, in its deep, inner subjective journey, would have healing ability that the rationality, for itself, does not control. Shamanic ecstasy¹³ would become a kind of psychic ecstasy, and a deep journey inside the *psyche* would establish means to seek healing from an infirmity. Thus, Plato not only presupposes a kind of psychosomatic theory, he also intuitively raises a thematic that is important to neuroscience: the communication between immune mind and psychic mind, without wanting to incur an anachronism, since such expressions were not used by the philosopher, although they were some of his principles.

¹³ Although Zalmoxis is not a shaman in the anthropological sense (Eliade 2002: 425), his symbolism significantly and unavoidably refers him to the shamanic culture. Thrace was largely influenced by shamanic culture (Dodds 2002: 143-144), and shamanism is present in the originating myth of Zalmoxis in Herodotus, in several elements: the most significant of them is the ecstasy of the soul to the underworld, followed by the concept of resurrection.

Soma and psyche: the hypothesis of monism

The healing process in the *Charmides* is not an act of magic "enchantment", as the Thracian doctor disciple of Zalmoxis suggests to Socrates, neither a type of psychopathological action – for making a mention of the Thracian *daimon* – that gives the shaman a powerful domain arising from demonic knowledge of the underworld, result of an ecstasy of the soul, as in the case of the "large shamanism"¹⁴.

The philosopher proposes a recreation of the Thracian myth, not to void his central idea, the cure, but to demonstrate that this process occurs through psychological perspectives, in which the *psyche* is assumed as an internal curing agent, which perceives in depth the

¹⁴ Ohlmarks (Eliade 2002: 37-38, cited) points to two types of shamanism: 1) the "big shamanism" originating from the Arctic, whose neophytes could, for a certain degree of mental illness, induce a feeling of ecstasy, by their own will and as a real catalepsy, distinguishing them from epileptic who can not induce this, by their own will; 2) the type originating from sub-Arctic regions, in which the neophytes, without entering into real trance, are obliged to induce a semi-trance with the help of narcotics" or are taken to represent dramaturgically what would be a journey of soul.

beauty of the "beautiful arguments" and transmits its more intense meaning to the *soma*, initiating what would be a healing process.

The expression "beautiful" (*καλούς τούς*) resizes the imagistic field of the mythical "enchantment". Associated with the expression "arguments" (*τούς λόγους*), "beautiful" (*τούς καλούς*) alters the magical action to a psycho-imagistic action. The beauty of the enchanted words would act as good feelings, but in the form of a psychic image. Plato has the intuition of a process of communicative translation between somatic sensations and psychic images: 1) in the first case, the *psyche* could communicate with the *soma* by means of a type of translation of somatic sensations in the form of psychic images; 2) in the second case, the *soma* could communicate with the *psyche* by means of a type of translation of psychic images into somatic sensations. Depending on what the *soma* or the *psyche* make from the

reception of the transmitted message, this would result in the health or infirmity of a man as a whole, or parts of him.¹⁵

Thus, In the *Charmides*, the *psyche* is presented as the source of good and ills of the parts of the body and the man as a whole (Pl. *Chrm.* 156e6-157a3). There is a notion that psychic life interferes in somatic life. Plato does not deny the reverse path: the interference of somatic life in psychic life. Hence, it is possible to understand that the *psyche* is a result of the kind of *soma* that composes, and that the *soma* is also a result of the kind of *psyche* that composes. In such a way, the *psyche* is the man as a whole as the system of the existential and extension recognition from the *soma* itself, because that is (inside the body) where the *psyche* recognizes itself associated with and represented in the sensory world.

¹⁵ It is the "healing" process (*ἰᾶσθαι*) (*Chrm.* 156e1) of the integral parts of man to which Zalmoxis refers, in the words of the Thracian doctor, that Plato works on as a philosophical process in the course of the dialogue, since many diseases develop because Greek physicians overlook the whole: *τοῦτο ἄλλὰ καὶ αἴτιον εἶη τοῦ διαφεύγειν τοὺς παρὰ τοῖς Ἑλλησιν ἰατροῦς τὰ νοσήματα πολλὰ* (*Chrm.* 156e2-4).

In this perspective, the sensory objects are starting points for understanding the intelligible plan, in which, with due philosophical preparation, one can see the authentic beauty of the Thracian "enchantment", substantiating the Platonic principle that the *psyche* realises itself from the *soma*. What Plato does, in a different way, is to intuit that the sensations are given in the context of images in the *psyche*, and vice versa.

Psyche: part or man as a whole?

To demonstrate that *soma* and *psyche* are linked and interrelated, and not just the somatory arithmetic, Socrates mentions, still in the *Charmides*, the inseparability of the "eye", the "head" and "body as a whole".

“As (the enchantment) is so powerful that it not only makes the head healthy, but it also does what you have surely heard from good doctors when they are approached by someone who has problems with the eyes; they say you can not only cure the eyes, instead it’s necessary to treat the head in order to improve the eyes. And, in turn, believing that treating just the head, without the body as a whole, is a sovereign foolishness. Therefore, emanating from this principle and applying certain diets to the whole body, it is desirable to treat and cure, with the whole body, a certain part (*Chrm.* 156b3-156c5).”¹⁶

¹⁶ ἔστι γάρ, ὃ Χαρμίδη, τοιαύτη οἷα μὴ δύνασθαι τὴν κεφαλὴν μόνον ὑγιᾶ ποιεῖν, ἀλλ’ ὥσπερ ἴσως ἦδη καὶ σὺ ἀκήκοας τῶν ἀγαθῶν ἰατρῶν, ἐπειδὴν τις αὐτοῖς προσέλθῃ τοὺς ὀφθαλμοὺς ἀλγῶν, λέγουσὶ πού οὐχ οἷόν τε αὐτοὺς μόνους ἐπιχειρεῖν τοὺς ὀφθαλμοὺς ἰᾶσθαι, ἀλλ’ ἀναγκαῖον εἶη ἅμα καὶ τὴν κεφαλὴν θεραπεύειν, εἰ μέλλοι καὶ τὰ τῶν ὀμμάτων εὖ ἔχειν· καὶ αὐτὸ τὴν κεφαλὴν οἶσθαι ἂν ποτε θεραπεύσαι αὐτὴν ἐφ’ ἑαυτῆς ἀνευ ὄλου τοῦ σώματος πολλὴν ἄνοιαν εἶναι. ἐκ δὴ τούτου τοῦ λόγου διαίταις ἐπὶ πᾶν τὸ σῶμα τρεπόμενοι μετὰ τοῦ ὄλου τὸ μέρος ἐπιχειροῦσιν θεραπεύειν τε καὶ ἰᾶσθαι.

If the head needs the eye to complete itself as a head, or at least the idea of the completeness of a head that exists, one can not tell that the head is the junction of the head with the eye, but that the head is, and can only be, together with the eye. In the same perspective, if the eye is part of the head, it can only perform its role within the context of head; separate from it, it is still not an eye, in so far as its function is lost.

Likewise, a head can not be a head without eyes¹⁷, in the way that a human head, in the evolutionary scale as we know it, shows traces of the existence of the eyes. After all, a head without an eye would only continue being a head without any functional properties of what we perceive as a human head in its evolutionary completeness, turning merely

into head that would always be incomplete.

It is exactly these properties of the eyes, and other parts, which determine the head as a whole head. Thus, although it seems secondary, the eye is so vital to the head that without it one can not think of a complete head. There may be eyes that don't see, or even an empty space where there used to be an eye. But even before their absence and mutilation, there is always a space that proves their former existence, or at least their evolutionary signs of existence, even in case they have never been there, from birth, but still, it remains the space that constitutes its evolutionary architecture, to indicate that it always was there.

Thus, the analogy serves to indicate that the "body as a whole", as well as its parts, and the *psyche* are not merely somatory arithmetic. Therefore one can not consider that, in the dialogue, the *psyche* emerges as an entity ghost with substantial

¹⁷ For Robinson, the parallelism is not perfect, though adequate, because "eye" still remains "eye" even without head (Robinson 2010: 69). However, we are inclined to understand the "organs" of the Platonic metaphor from their functions on the whole, and not from their isolated physiological anatomies.

existence added to the body (Robinson 2010, p. 69).

This way, Plato brings together his parts "head" and "eyes" in the "body as a whole" as integral parts, in order to support the theory that the *psyche*, as the equivalent of the "body as a whole" in the analogy, is the man as a whole, and thus symbolizes a whole that has integrated the *soma* and his parts.¹⁸

Leaving the analogy, the *soma* would be the receiver of external information, and the *psyche* responsible for the processing of the information captured by the *soma*. The first is the channel for capturing information, and the second, the *psyche*, is the result of this information transformed into images. Thus, the *psyche* would be the result of what the body receives and produces as sensitivity translated into conscious or unconscious images. The images, whether or not

understandable to consciousness, would be the result of the translation of somatic information and its physic-chemical flow.

Plato hereby seeks to elucidate the principle that the *psyche*, being the imagistic result of somatic information, is also the cause of "how" this information will be understood by the man as a whole, becoming, to some extent, the actual agent of health or infirmity, since the *psyche* is the man as a whole, as a system of existential and of extensional recognition of the *soma* itself.

If the *soma*, which receives the information, can change the "I" processed by the *psyche*, it, the *psyche*, could also change the result of the *soma* itself. This pun serves rather to demonstrate the following result: if the somatic sensations changed the image processed by the *psyche*, the latter could also change the somatic sensations of what the *soma* would feel.

¹⁸ With regards to the symbolism that leads to an understanding the *psyche* as "man as a whole", from the analogy between "eye", "head" and "body as a whole". See Robinson (2010: 68).

The formative-constituent state of the psyche

Besides having pointed to a kind of psychosomatic communication in the *Charmides*, Plato also intuitively perceives a formative-constituent state of the *psyche* in the *Republica*. That is, Plato realizes that the *psyche* consists of two fundamental principles: 1) external: cultural and educational factors; 2) internal: genetic factors and other factors of birth¹⁹.

To present this theory, the philosopher (re)creates another story: he presents a myth of autochthony (*R.* 3, 414b8-415a7). The character Socrates assumes the role of a tyrant in this dialogue, and raises the hypothesis that this type of myth should be introduced to the citizens, so that, meeting the principle of nobility by birth, each one could put himself in the appropriate place in the *polis*.

The myth of autochthony has two basic functions in the dialog: 1) the first is to denounce the system of power that a polis develops from the beliefs imbedded in the *psyche* of each person; 2) the second, which requires greater attention, is the attempt to point out abilities of the human *psyche* that are determined by internal factors: firstly, by genetic factors, but also by other factors that Plato, although having been aware of their existence, can not develop in his myth of autochthony that we could associate with congenital factors.

If seen in the light of the first function proposed, the myth of autochthony evokes the notion that each citizen is of noble birth descent, represented by the value of the metals that constituted its *psyche*. From this myth, Socrates illustrates an idea of a political tripartition of the polis into three classes of men, whose qualities are associated with three metals: the rulers (gold); the

¹⁹ See expression *σήμερον* (*R.* 10, 609a3) which Plato does not use in the presentation of the myth of autochthony, but in the theoretical conclusions about the *psyche*.

guardians (silver); the craftsmen (bronze and iron)²⁰. Based on that, Socrates reinforces the real possibility to print²¹ a certain belief in the *psyche* of each individual. In this respect, Plato not only denounces the political manipulation in a *polis*, but also reinforces the notion of the constitutive formation of the *psyche* from external factors such as culture and education.

If seen in the light of the second function proposed for the use of the myth, Plato makes a startling revelation: the material-formative value (gold, silver, bronze/iron), surprisingly, does not determine the hereditary nobility of birth, but rather is the basis for recognizing the psychic abilities of each individual within the *polis*. The textual element that proves this subtle inversion is the idea of class

change. Socrates draws attention to the fact that it is natural for parents to beget children with the same genetic traits, but parents formed of gold could possibly have an offspring of children formed of silver, as well as parents formed of silver could have an offspring of children formed of gold, and so on. In this sense, Socrates mentions the need for vigilance in relation to the mixture that forms the *psyche* of each child. After all, from its formation it should be encouraged to pursue what is it entitled to, in the *polis*. In this sense, children of parents formed of gold may be craftsmen and not rulers, and so on.²²

What Plato theorizes is more than a revolutionary system of social class change. His intuition goes beyond this aspect and establishes the notion that the *psyche*, besides being a result of external interference, such as culture and education, and it is also the result of genetic factors and other internal factors of birth.

²⁰ In this function, we have a speech that is well-known and widely used by many institutions who pretended domination by power. Using a race or a co-blooded offspring was an art and has been one since.

²¹ See Socrates who says that it is much easier to "mold the proper *psyche* with the *mythoi* than the body with the hands" *καὶ πλάττειν τὰς ψυχὰς αὐτῶν τοῖς μύθοις πολὺ μᾶλλον ἢ τὰ σώματα ταῖς χερσίν.* (R. 2, 377c3-4).

²² See Plato (R. 3, 415a7-c5).

Such factors are not guaranteed by genetic inheritance, like the right of autochthony makes believe that – Because it justifies a mythical discourse of maintaining power and not exactly on a question of genetic inheritance – but by principles that remove the expected genetic dominance and therefore it also removes the guarantee of hereditary nobility of birth. In other words, these principles develop with each individual, and they can originate from two causes: 1) from the constitutive-genetic mixture of his ancestors; 2) from other, probably congenital factors of birth. Both influence the formation of the human *psyche* from birth. Still in other words, it means that the human *psyche* carries with it fundamental factors of birth that predispose certain typical characteristics to it.

The Platonic theory is apparently limited, for two reasons: 1) there is no explanation for the distortion of the formation of the child that has changed the

dominant genetics of the parents in its genotype; 2) there is an extremely small chance of characteristic types, which are determined by the three social classes, establishing, in principle, only three types of the *psyche*.

There are no reasonable arguments to challenge the first reason, only the acceptance of the limitation of Plato's fundament, but still there is his brilliant perceptive intuition about the possibility of the change of dominant genetic factors. But for the second reason, one must pose the question in combinatorial scales.

If we placed the combinations that possibly could arise from mixtures of these materials (gold, silver, bronze/iron) on a probability scale, we would get a frightening quantity of possibilities of the *psyche*. If we changed the scale to percentage levels, we would attain astonishingly extensive calculations, removing Plato's analogy from the

apparent limitation. If we still wanted to play with the scale of grandeur and add to that the external influences of culture and education in the formation of the *psyche*, we would attain infinitesimal numbers of existential probabilities of the human *psyche*. Not to mention such other factors that Plato misconceives, but whose existence he realizes.

To use current expressions, what Plato intuitively is beyond existing probabilities of human *psyche*: it is in the notion that the human *psyche* is the result of a set of internal factors that determine the neural architecture of a brain; and it is also in the notion that it is the result of a set of external factors that influence the internal activities of this neural architecture.

Going further still, Plato is able to intuit that this whole range of existing probabilities of the *psyche* does not take human to indiscriminate behaviour, adding an unprecedented relativism to it.

Conversely, he perceives and allegorizes the existence of a psychic system that sets standards of behaviour. To demonstrate this, he uses the image of the three classes of polis exposed by his character Socrates, as outlined above, seeking to represent categorizations of human *psyche*, even facing the whole possible variability.

The communication between soma and psyche

Regardless of his belief or disbelief in the soul, Plato was able to recognize the intrinsic link between the *psyche* (as processor of psychic functions) and the *soma*. Therefore, these functions of the *psyche* can't be confused with notion of the soul

Based on this confusion, many theories about the human mind have originated throughout history. Already in the twentieth century, two different lines of neuroscience research began to discuss the question of the relationship between body and mind. 1) "The cognitive science

emerged from the Macy Conferences" (Russo & Ponciano, 2002; p. 352), called cybernetics by Norbert Wiener between 1946 and 1953, proposed a comparison between the functionality of a machine and a human brain, which resulted in a computational structure; 2) the proposal of a cognitive humanization of nature, from the 70s onwards of the same century, intended to eliminate the separation between body and mind of the cybernetics line; the mind is now seen as a natural extension of the body and no longer as an internalized entity of it.

The basic model of the *psyche* as a distinct entity that is separated from the body was designed in the systemic computational model in the form of software and hardware, insofar as the software has linguistic and grammatical sequences to generate the information that is processed in the hardware, a kind of physical body that enables the manifestation of the information from the

software, the *psyche*. This model, incidentally, seems to have been a projection of religious and philosophical tradition that thought of the human being as divided into body and soul.

In this context, the mind is linked to the notion of soul. It is as if the mental capacity was an ability of the soul, hence the knowledge, from this point of view, is not attached to the body, but to a metaphysical entity: the soul. Against this kind of view, Plato supports, in his theory about the perceptions of the *psyche* in *Republica*, the notion that the *psyche* can only understand the reality through images, from the *soma* itself²³.

²³ At the beginning of Book VI, Socrates makes a pre-announcement of what would be the idea of "good" as a "modello di riferimento, il *paradeigma*, riferendosi al quale chi ha il compito del potere deve riordinare (*kosmein*) la *polis*, i suoi cittadini e se stesso" (Vegetti 2003: 254-255). The comparison made between those who have no vision - the blind in the sensory plan - and those who do not have the "paradigm" of "good" in the *psyche* (*μηδὲν καὶ ἐναργὲς ἐν τῇ ψυχῇ ἔχοντες παράδειγμα*) (R. 6, 484c8.), in the intelligible plan - serves to introduce the notion that both can not "focus on looking at the manifested truth" (*ἀληθέστατον τὸ ἀποβλέποντες*) (R. 6, 484c9.) because they are both blind: one in a sensory sense, the other in an intelligible sense. The expression *τὸ ἀληθέστατον* in this work is understood as synonym of believable, since the "manifested truth" occurs by means of something. In other words, the sight needs to try to see farther and in addition to what the sensory objects present, but may do so only by looking at such objects.

The belief in the ability of a shaman making ecstatic travels, detaching himself from his body towards other worlds, of a medicine-man healing through magic formulas, of a transference magic of a formula for the sick, of a body being taken over by a demonic entity, among many other manifestations, are thought structures that gave foundation to the computational system.

The other neuroscientific line, in turn, seeks to tackle the problem from the idea that the mind is inseparable from the body. In this sense, the cybernetic model can not be compared with the nervous system of the human mind. The “Psychophysical basic practice” is an exercise that seeks to align the psychic mind, or “intellectual mind”, “with the autonomic nervous system, thereby establishing the simplest form of mind-body association” (Zahn 2005).²⁴

Thus, at the end of the second millennium, neuroscience has been fighting what was entitled disengaged reason, an old concept that still survives in various forms of belief and that implies the separation between *psyche* and body.²⁵

In this perspective of neuroscience, the mind is seen as a part that is embedded and integrated into the body, as Varela and his colleagues seek to demonstrate, at first hand, in the work *The Embodied Mind: Cognitive Science and Human Experience* (Varela, Thompson, & Tosch, 1991). The scientific epic searching to produce an artificial and effective intelligence is a clear demonstration of how the notion of the bipartition of *soma* and *psyche* interfered and became an inductive model for the confirmation of the feasibility of this theory. The hardware and the software would show that separation. In this way, a new concept emerges with regards to the human being: the concept

²⁴ “Psychophysical basic practice”; “intellectual mind”; “with the autonomic nervous system, thereby establishing the simplest form of mind-body association”.

²⁵ See Russo & Ponciano (2002: 350).

that its software program, or rather its *psyche* can not be thought to be outside the hardware, or outside the *soma*.

Humberto Maturana, a leading neurobiologist, draws attention to the need to think of the mind as an integral part of the body. Therefore, he points out the need to look at the dilemma mind-matter from a biological bias, and not from the model of traditional religions that see the body as a limitation of the soul.²⁶

Maturana aims to combat the religious thought that perceives the body as the limiting element of the soul, and seeks to demonstrate that the body legitimizes the knowledge of the observer. In other words, as Plato contends, the *psyche* determines the type of body that composes, just like the *soma* also determines the kind of *psyche* that composes.

The way the *soma* captures reality is vital to the health or the lack of health of the *psyche*, and the man as a whole. And even when a certain information is badly received, could the *psyche* proceed in a healing way in relation to the man as a whole? Could the *psyche* (re)process the information captured by the *soma*? Can *psyche* (re)process the negative way in which it received and perceived the somatic information?

Regarding these questions, the prominent biologist Francisco Varela opens an interesting debate with the Dalai Lama, establishing a dialogue between science and religion. Trying to answer the question of the Dalai Lama if the immune system could possibly heal the body, since it can also attack its cellular family, Varela explores a perspective of cure through a kind of communication between the immunological and the psychological mind, in that there would be a way that one

²⁶ See Maturana (2001: 39-40).

mind incorporates the messages from the other and intelligently regulates the body.²⁷

It is evident that Plato did not put his theory about the healing process in those terms. He didn't even raise hypotheses about these two minds. But his philosophical reflection, more than to intuit a psychosomatic process, presented a theory about the internal communication between *soma* and *psyche*.

Although science is not aware of this "smart" regulation process between the psychic mind and the immune mind, Varela holds the possibility that messages from one to the other are first transmitted and then understood, hence resulting in a possible corporal regulation. What has been resized in Varela's response is partly similar to the principle that everything originates from the *psyche* (Pl. *Chrm.* 156e), but with the addition that there is a somatic mind that works through the

immune system²⁸, and that it is not possible that one mind regulates the other without any kind of communication.

In the *Republica*, Plato seems to contradict the *Charmides* by proposing that the *soma* does not suffer because of the *psyche*, nor does the *psyche* suffer because of the *soma*, but each one only for its own cause (*R.* 10, 610a5-8). However, the apparent contradiction only accentuates the theory that there must be a communication between *soma* and *psyche* for the whole process of illness or healing to be triggered, completing in this way the theory expressed in the *Charmides*.

By exposing the problem, the character Socrates exemplifies in detail the fact that the poor quality of food is the reason for the corruption of the *soma*, which suffers from its own evil, the disease, but not because of the food (*R.* 10, 609e1-610a3). In other words, the cause of the suffering of the *soma* is the infirmity.

²⁷ See Goleman (1999: 78).

²⁸ See Goleman (1999: 65).

The poor quality of the food is only the reason for reinforcing its illness. Similarly, the *psyche* does not suffer from evils originating from the *soma* (*R.* 10, 610a5-8.), not even from its vices - injustice, temperance, cowardice, ignorance (*R.* 10, 609b11-c1.) – but only because of its own poor condition (*R.* 10, 610a7). In other words, the vices are only the cause for corruption, but it is the *psyche* itself that can trigger its true evils.

Every thing presents "congenital" factors (*R.* 10, 609a3)²⁹ which make it predisposed to a certain evil, or disease – such as, for example, the disease for the whole body, the mildew for the grain, the rottenness for the wood, the rust for the bronze and iron (*R.* 10, 608e6-609a4). Resuming the myth of autochthony, it seems that the latter example makes an analogy with the evils congenital of the *psyche*: composed of bronze and iron, the *psyche* shows a high degree of

corruptibility, hence the image of rust as its evil.

If both the *soma* and the *psyche* are responsible only for their own evils, it means that *psyche* can actually not become sick or heal the *soma* and vice versa. Yet without contradicting the *Charmides*, what Plato does is to demonstrate that both can affect the state and the degree of health or infirmity that they are in, as in the example where the poor quality of food only helps to corrupt the *soma*, but its suffering will come from its own state of good or evil.

In this sense, the *psyche* neither cures the *soma* nor makes it sick, the *psyche* only gives it some images that will make it produce emotions equivalent to such images, thus enhancing its (the *soma*'s) health or somatic evils. Likewise, the *soma* neither cures the *psyche* nor makes it sick, the *soma* only gives it some feelings that will make it produce images equivalent to such emotions, thus

²⁹ σύμφοτον.

enhancing its (the psyche's) health or mental evils³⁰.

Final considerations

In antiquity, Plato – perhaps the philosopher who most influenced the thinking in the Occident – already had this notion and took possession of traces and signs of the human *psyche*, which were widespread in myths and images, in order to try to understand this object of study that was fairly new to his time: the human *psyche*. Thus, Plato not only anticipated the research about human psychology by many centuries, but also anticipated issues that are fundamental for the neuroscience of the twentieth and twenty-first century.

Thus, even without empirical observation techniques in the laboratory, Plato managed to systematize, in myths

about the soul, the signals that the human *psyche* left during its evolutionary formation. He made his observational laboratory, based on the actual comportment of the belief in the soul. Hence, Plato developed theories that exceeded the psychosomatic notion, raising neuroscientific hypothesis of a possible communication inside the man as a whole, whose interlocutors would be the *soma* and the *psyche*, for formal and not for metaphysical-supernatural reasons.

This participative separation basically sought to sustain the idea that the psychic language, consisting of images, is the result of somatic information translated by the *psyche*. Thereof finally results health or infirmity of the man as a whole.

Therefore, we already know that the *psyche* is the result of somatic information. We already speculate that the somatic information is received from the own constitutive formation of the *soma*

³⁰ In this step, the *psyche* is directed to its use as "soul" in another myth presented by Socrates, at the end of book 10: the myth of Er, a direct reference to orphism. However, even here, we believe that its use is the consequence of a moral principle in Plato, which supports the notion that the fate of the *psyche* is the result of its own choice, given its vices, and not the consequence of the desire of the gods. Thus the fate of "every soul" (*ἕκασται ὡς ψυχῶν αἰ*) (R. 10 619e6-620a1) in the transmigratory continuity, was "chosen" (*ἠροῦντο*) (R. 10, 620a1) "after the intercourse of the habits of life" (*κατὰ συνήθειαν τοῦ γὰρ προτέρου βίου τὰ πολλὰ αἰρεῖσθαι*) (R. 10 620a2-3).

and the *psyche*. Two questions remain before finishing this work.

- 1) The first one, in the pharmaceutical-neurologic context, would be: how is it possible to influence the selection of somatic information and, once such information is internalized, how can it be directed to the *soma*, to thereby influence the imagetic translation of the *psyche*?
- 2) The second one, in a psycho-neurological context, would be: how is it possible to influence the psychic image and, once the desired reality is selected, how can its translation be directed to the *soma*, so that the translation can influence the somatic sensations and feelings?

The answers to these questions, although they seem to be ahead of us, given the latest state of the art technology, are actually very complicated and daunting, given the virtually countless probability of neurological architecture that we face. Regardless of the formal structure that the human brain has – morphological, syntactic and semantic – his digital structures, amidst this architectural structure, are probably infinite. This leads us to believe that, one day, we can only deal with structural problems, but never with individual problems in particular. That means that some somatic or mental illnesses will

always be an active and integral part of our evolution.

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