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ORIGINAL PAPER

Some Eighteenth Century Contributions to the Mind–Body Problem (Wolff, Taurellus, Knutzen, Bülfiger and the Pre-Critical Kant)

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Abstract This work speaks about very special solution of the mind–body problem. This solution based on the so-called *Principle of Co-existence* stands out as one of the most interesting attempts at solving the mind–body problem. It states that substances can only exert a mutual influence on one another if they have something in common. This does not have to be a common property but rather, a binding relationship. Thus, substances co-exist when they remain bound by a common relationship, for instance, to an external subject. *The Principle of Co-existence* played an extremely important role in Kant's philosophy, not only since it provided a framework for solving the mind–body problem, but since it captured the very basis of its existence. The *Principle* found also reflection in the works of Kant's successors, such as Fichte, Schelling, Hegel or Feuerbach. It had significant—though often hidden—repercussions on later philosophy of mind. The notion of force and the principle of its operation became key concepts in resolving the mind–body problem. As a result, philosophy of mind concentrated on the search for a principle explaining the occurrence of two complementary types of phenomena. This established a tradition which, to a greater or lesser extent, has survived to our day.

Keywords *The Principle of Co-existence* · Monad · Mind–body problem · *Theory of Everything* · Pre-critical Kant · Reason · *vis viva* · Centre of forces

I

Various theories have been advanced throughout the history of philosophy to explain the co-existence of mind and body. A solution based on the so-called *Principle of Co-existence* stands out as one of the most interesting attempts at

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solving the mind–body problem. It states that substances can only exert a mutual influence on one another if they have something in common. This does not have to be a common property but rather, a binding relationship. Thus, substances co-exist when they remain bound by a common relationship, for instance, to an external subject.

This is why the *Principle of Co-existence* has a dual meaning in philosophy. First, it denotes the theoretical relationship between two different kinds of substance. Second, it refers to the Principle of Particularity, developed by Kant to assist reflection on the mind–body problem. In European philosophy, the eighteenth century ushered in the search for a unified theory explaining all phenomena (such a theory, to be exact, was proposed in 1756 by Ruđer Josip Bošković[1] who had given its rudiments in his earlier writings, including the treatise *De viribus vivis* from 1745).

Most of the attempts made at the time to resolve the mind–body problem relied on the generic reduction of phenomena. Mental phenomena were thus explained by reference to physiological processes occurring in bodies (the materialist, realist and naturalist schools) or physical phenomena described in terms of impressions or mental states (spiritualists, idealists). These efforts were—so to speak—based on an internal paradigm, presupposing the existence of an analogy between mental and physical occurrences and seeking a process or organ whereby one could be converted into the other.

Meanwhile, a different approach, consisting in the search for a general principle, offered another possible solution. This is the road taken by Kant, whose *Principle of Co-existence* does not seek to integrate phenomena, retaining a dualist framework of reality, but rather views the realms of mind and matter as complementary. Kant's intent was to find a principle so general as to encompass absolutely everything in the universe. His conception can thus be said to involve an external paradigm, renouncing the search for a universal structure and looking instead for a common principle governing the coordinated activity of things.

The *Principle of Co-existence* can thus be understood as:

- A general designation of the relationship between mind and body,
- A group of theories seeking to explain the nature of this relationship, belonging to a specific tradition of thought and considering mind and matter as two independent and complementary realms,
- Finally, as the conception formulated by Kant, proposing a specific definition of the relationship between mind and body.

My aim is to demonstrate that the *Principle of Co-existence*—in a more or less overt way—has come to stand for a specific way—not without its own interest and originality—of defining the mind–body relationship.

[1] Ruđer Josip Bošković (1711–1787) theologian, physicist, astronomer, mathematician and philosopher from Dubrovnik in the Republic of Ragusa (today in Croatia). His most important philosophical works include: *Trigonometriae sphaericae constructio* (1737), *De motu corporum projectorum in spatio non resistente* (1741), *De Viribus Vivis* (1745), *Elementorum matheseos ad usum studiosae juventutis* (1752), *Elementorium universae matheseos* (1757), *Theoria philosophiae naturalis* (1756).

II

The *Principle of Co-existence* was formally articulated by Kant in the following way:

> The difficulties regarding the action of body and soul which arise from the view that body has no other force than *vis motrix*. […]
> The difficulty which similarly arises regarding the action of soul upon body, and how through the introduction of vis activa it can be removed. […]
> We meet with a difficulty when the question is raised how the soul is capable of setting matter in motion. Both this and the above difficulties [regarding the action of the body on the soul] vanish, and considerable light is cast upon the nature of physical influence, when the force of matter is viewed not in terms of motion but in terms of those effects in other substances which we are not in a position to define more precisely. For the question whether the soul can cause motions, that is, whether it has a moving force, now takes the altered form, whether its essential force can be determined to an outwardly directed action, that is, whether it is capable of acting on other beings outside itself, and so of producing changes in them.[2]

In my opinion, this enunciation is not original to Kant's thought and has precedents in the philosophy of Wolff, Taurellus,[3] Knutzen[4] and Bülfinger[5]—thinkers who, in a variety of ways, influenced the thought of Kant.

The history of the *Principle of Co-existence* can be characterized as follows:

- Descartes divided the world into the realm of thinking and extended (material) things;

[2] I. Kant (1929, pp. 19–20).

[3] Nicolaus Taurellus (Nikolaus Öchslin 1547–1606), German philosopher and theologian. His most important philosophical works include: *Philosophiae triumphus seu metaphysica philosophandi methodus* (1573), *Medicae praedictionis methodus* (1581), *Theses Philosophicae, De Ortu Rationalis Animae* (1596), *Carmina Funebria, Quae Magnorum Aliquot, Clarorumque virorum felici memoriae dicavit* (1602), *Emblemata Physico-Ethica, Hoc Est: naturae morum moderatricis picta præcepta* (1617).

[4] Martin Knutzen (1713–1751), German philosopher, teacher of Immanuel Kant. His most important philosophical works include: *Philosophischer Beweis von der Wahrheit der christlichen Religion* (1740), *Philosophische Abhandlung von der immateriellen Natur der Seele* (1744), *Vernüftige Gedanken con den Cometen* (1744), *Systema causarum efficientium seu commentatio philosophica de commercio mentis et corporis per influxum physicum explicando* (1745), *Elementa philosophiae rationalis seu logicae cum generalis tun specialioris mathematica methodo demonstrata* (1747).

[5] Georg Bernhard Bülfinger (1693–1750), German philosopher, mathematician and statesman. His most important philosophical works include: *De harmonia animi et corporis maxime praestabilita, ex mente illustris Leibnitii, commentatio hypothetica* (1723, reprinted. 1984), *Latinum idioma Specimen doctrinae veterum Sinarum moralis et politicae* (1724), *Dilucidationes de Deo, anima humana, mundo et generalibus rerum affectionibus* (1725, reprinted 1982); *In Benedicti Spinosae Methodum Explicandi Scripturas Sacras brevibus notis animadvertit* (1739), *Elementa Physices: Accedunt eiudem Meditationes Mathematico-Physicae in Commentariis* (1742), *Praecepta logica cum ipsius quadam oratione de dicendi regulis et comparatione corporis et animi erutis* (1742), *Sammlung einiger kleiner Schriften und Reden, welche bei unterschiedlicher Gelegenheit verfertigt und gehalten worden* (1745), *De progressionibus localibus commentatio inedita, quam praemissa auctoris vita* (1794).

- Leibniz dynamised this model of reality by introducing the notion of *vis viva*, living force, which, like all other things, is dependent on God;
- Pascal effected a further division and set the world of faith apart from the realm of thinking things;
- Taurellus re-merged the realms of faith and reason and attempted to demonstrate their unity with the world of matter;
- Wolff argued for the independence of force from God, ascribing the former to matter;
- Knutzen and Bülfinger saw force as unconditioned by and independent of any other entity;
- Kant made the notion of force one of his three primary concepts—next to God and matter—while upholding the union of the spiritual and material realms;
- the *Principle of Co-existence*, underpinned by the Law of All Forces, finally emerged as a central concept of Kant's philosophy.

The philosophy of Descartes and Leibniz is well-known—we shall therefore begin by illustrating the thought of Taurellus and Pascal. The former founded his philosophic system on the following definition of being:

> All that exists is a form of being, including both material and spiritual beings.[6]

Taurellus' aim however went beyond providing a unified account of physical and mental phenomena; his ontological system was also to include the order of faith. Having made several attempts at resolving the psycho-physical dilemma of Descartes, Taurellus opted in favor of transcending the Cartesian model of reality. A similar direction was pursued by Pascal, whose conception of the heart likewise diverged from strict Cartesian dualism. The heart, according to Pascal, belongs to the realm of faith, and is something altogether different and separate from reason:

> The heart has its reasons, which reason does not know. […] We know truth, not only by the reason, but also by the heart, and it is in this last way that we know first principles; and reason, which has no part in it, tries in vain to impugn them. […] And reason must trust these intuitions of the heart, and must base them on every argument.[7]

The order of reason and that of the heart were frequently equated with each other on account of their inaccessibility to the senses. Pascal rejected this equivalence, viewing the former as constituting an independent manner of interpreting reality.

Taurellus wanted to develop a general theory subsuming Pascal's sphere of the heart. This required explaining the co-existence of physical, mental and supernatural phenomena. Taurellus concluded that:

> Soul had its abode both: in the brain and in the heart.[8]

[6] Falckenberg (1893, New York 1893, p. 176).

[7] Pascal (1958, p. 80, § 282).

[8] Taurellus (2009, p. 9).

This in turn made it necessary to indicate a common principle governing the co-existence of these spheres. Taurellus' contribution thus consisted in formulating a synthesis explaining all categories of phenomena.

A different view was held by Wolff, who considered substance to have the form of points and to be independent from God.

> The second level of description that Wolff employs when giving his account of bodies is the microphysical level. The occupants of this level are the primitive parts of bodies which Wolff calls corpuscles or material atoms. In §186 of his *Cosmologia*, Wolff provides a helpful contrast between atoms of nature, on one hand, and material atoms, on the other: That is called an atom of nature which is indivisible in itself because it is devoid of parts into which it can be divided. That is called a material atom which in itself is able to be divided, but for actually dividing it, existing causes in rerum natura are not adequate.[9]

According to Wolff, phenomena are subject to the Leibnizian principle of pre-established harmony, but it is matter and not God that this principle operates on. This is because matter is endowed with a force which Wolff describes as *vix motrix*, and which he understands in the following manner:

> Force is inessential because it is communicated to a body entirely from without [and it is something—JSC] in which the body does not participate when in a state of rest.[10]

This scheme however still failed to resolve the mind–body problem, since by attributing force to matter it limited potential solutions to physicalist ones. Moreover, Wolff did not manage to formulate a convincing analogy between physical and mental events. In spite of these shortcomings, Wolff's theory marks an important point in the history of the *Principle of Co-existence*, since what Wolff demonstrated was that the solution of the mind–body problem did not have to derive from the nature of substances themselves, but could be based on concepts common to both mind and matter, such as force.

Science could thenceforth pursue one of the following courses:

- The search for a principle reducing all phenomena to the level of physical phenomena (materialism).
- The search for a principle reducing all phenomena to the level of mental phenomena (spiritualism).
- The search for an analogy between physical and mental phenomena.
- The search for a universal principle governing all types of phenomena.

The concept of force is key to all of these options, since:

- Solution 1 rests on the attribution of force to matter;
- Solution 2 rests on the attribution of force to spiritual substance;

[9] Beck (1966, p. 217).

[10] Ibid. p. 221.

- Solution 3 searches for an analogy between the operation of physical force and free will;
- Solution 4 would require force to be an independent constituent of reality.

Solutions 1 and 2 already had certain precedents in the history of philosophy. Solution 3 formed the basis of the system constructed by Bošković. Solution 4 on the other hand was not yet possible, since it required a change of the accepted paradigm, in which force was considered to be part of the nature of God. New lines of interpretation did not emerge until the doctrine of Knutzen (Kant's predecessor in the chair at Konigsberg), and, above all, Bülfinger.

Knutzen and Bülfinger were deeply influenced by Confucianism and Taoism.[11] They viewed the physical and mental worlds as a harmony of opposites. In this system, force is independent, also from God, but subject to a general law which Bülfinger saw as engrained in the tradition of Leibnizian pre-established harmony.

Bülfinger's conception was to idealism what the School of Chartres was to Medieval thought. According to this school, the Creator had granted the world the appropriate set of laws and had subsequently withdrawn from its existence. This theory led to the de-sacralization of the world and prompted the development of scientific research in the philosophy of nature. Bülfinger, for his part, de-sacralized the notion of force. And yet he failed to make use of the full potential of his discovery. The same type of charge as that brought against Anaxagoras by Hegel could be laid against Bülfinger. Anaxagoras had formulated the concept of reason, bringing about a scientific breakthrough, yet he considered it a separate factor, existing outside the system of nature.

Nevertheless Bülfinger's conception marks the end of a certain search for a definition of the mind–body relationship—a search rooted in two traditions. The first, seeking a general principle governing the occurrence of physical and mental phenomena, the second, focusing on and deriving its solution to the mind–body problem from the principle and the operation of force. Both of these models find an heir in Kant, to whom we owe the expression of the *Principle of Co-existence*.

Kant takes up Bülfinger's idea, especially in his cosmogony, positing the existence of three primary, independent and eternal elements: God, force and primeval matter. According to Kant, primeval matter existed in the form of particles endowed with potential energy. These needed an external impulse to become active. Prior to setting them in motion, force, in a manner which Kant does not entirely clarify, moved all the particles into the vicinity the largest of them—the *central body*. Since this body possessed the greatest reserve of power at the moment of the activation of the world, it—to a greater or lesser extent—was involved in all natural phenomena, thus becoming the center of the emerging world order. This ordering of the world began with the particles nearest to the central body and continued until reaching those at the fringes of the universe.

This vision—though Kant never says it outright—presumes the existence of absolute space. This space he calls a vacuum, although by this he does not mean absolute vacuum, but space filled with ether. The energy activated within particles

[11] Cf. Beck (1969, p. 429).

sets the surrounding ether into rotational motion. The ether spins with such speed that it becomes impenetrable. As a result, matter, defined as rigid body, impenetrable and extended, comes into being.

III

Already in the opening pages of his first work—*Thoughts on the True Estimation of Living Forces* (1749)—Kant undertakes to solve the mind–body problem and introduces several important changes with respect to the theories of his predecessors. In particular, he rejects the Leibnizian notions of pre-established harmony, the synchronization of substances and the principle of sufficient reason. He also opposes the concept of *vis viva*.

Kant's system pivots on the notion of *vis activa.*[12] This force—according to Kant—has the form of potential energy. This is why a particle that is not under external pressure remains at absolute rest. To activate this energy, an external impulse is needed. Released, it acts as an attractive-repulsive force. To this force—following in the footsteps of Bülfinger—Kant attributes the status of a primary concept, independent from God, going as far as to consider it wholly independent, even of matter. It is therefore force that holds the power of creation.[13] Though commanded by God, it is not part of His nature. God is merely—as Kant puts it—its depository.[14]

Thus the existence of force is not conditioned by the existence of substance. Force can exist and operate in the absence of a relation to anything beyond itself. The result of interaction between actuated forces is space.[15] Force is thus a primary quality, creating space and all the content of the universe.[16]

Kant's vision is that of force stretching out inside a vacuum (bearing in mind that the notion refers to ethereal space). Force creates a field within which extendedness appears. At work within this field is a substance made up of a multitude of small, mobile particles—centers of force, revolving around a central body and entering into mutual interaction.

> … Thus, if a point is found in a very large space where the power of attraction of the elements located there exerts a stronger influence than at any other points around it, then the basic material stuff of elementary particles spread out in all the surrounding area will sink toward this point. The first effect of this general sinking is the development of a body at this mid-point of the attraction which, so to speak, proceeds to grow from an infinitely small seed in rapid stages. But as this mass increases, it will, in exactly the same

[12] Hastie (1968).

[13] Cf. Kant I., *Gedanken von der wahren* …, op. cit., p. 201.

[14] Cf. Watson (1978, p. 79).

[15] Schönfeld (1999, p. 27).

[16] Cf. Benda (1940, p. 91).

proportion, with its more powerful force move the surrounding particles to unite with it.[17]

Thus force builds the entire structure of the universe.[18] And so the dynamic expansion of force creates space, while mutual interaction gives rise to structure. The union of force and space is—according to Kant—the driving power of creation.[19]

This conception has a metaphysical foundation. The concept of force gains near-divine attributes since the process of nature's self-constitution unravels as follows:

- Prior to the beginning, there was God, force and matter; these are three different primary concepts,
- God's nature includes the power of reason; God's participation in the creation of the world thus consists in granting an order of laws to govern the existence of the world (*The Divine Order of the World*),
- Included in the nature of force is causal power; force is commanded by God,
- Included in the nature of matter is potential energy; thus an external impulse is needed to set matter in motion.

Since the world came into being on account of different actors (God and force), there must be different types of primary laws governing its existence—a law applicable to the operation of force, and eternal truths conferred by God (*The Divine Order of the World*). This order constitutes a set of relations whose actualization is desired by God. In order to actualize these relations, God creates beings endowed with such properties as to make the desired relations possible. Next, since the order itself is founded on the very idea of relatedness—the capacity for mutual interaction, the beings capable of realizing it have to be simple in nature. It is worth mentioning that in Kant's system the primary principle of being stipulates that "whatever is—is, and whatever is not—is not".[20] The principle of balance between pairs of opposites (a Taoist motif) is thus realized.

Only now can one truly appreciate the full length of Kant's journey towards revealing the basic condition underlying the order of nature, from which the entire structure of the world can be derived by means of the laws of mechanics.[21] So it is that we pass from the laws of metaphysics to the principles of philosophy of nature. And hence the mutual harmony of laws reinforcing the unity of the world.

Kant's vision is that of a substance made up of extra-natural, unextended, indestructible and impenetrable particles, simple (monadic) in nature. Thinkers and scientists in Kant's time found the properties of these particles difficult to define, since they were not compatible with the idea of spiritual matter, being impenetrable, for one. They were also incompatible with 18th century ideas of matter.

[17] Kant I, *Allgemeine Naturgeschichte und Theorie des Himmels*…, in: *Kants Gesammelte Schriften*…op. cit., p. 237.

[18] Kant I, *Allgemeine Naturgeschichte und Theorie des Himmels*…, in: *Kants Gesammelte Schriften*…op. cit., p. 237.

[19] Walford (1992, pp. 154–159).

[20] Kant I, *Allgemeine Naturgeschichte*…, op. cit., p. 240.

[21] Cf. Kant I, *Allgemeine Naturgeschichte*…, op. cit., p. 245.

In many ways, Kant's vision of substance resembles our contemporary definition of matter, made up of particles with a radius of zero, unextended, indestructible and simple. However, according to Kant, these eternal particles, endowed with internal force, radiate a field (Kant does not use the term but speaks of an area within which a particle is present). Radiation is described as particles setting ethereal space into rotational motion. This is how physical monads or matter as we experience it come into being.

The physical monad is the monad's physical representation. There are also mental representations—minds. Nevertheless, the monad as such does not have a precise form and remains wholly unknowable. We may only apprehend its representations.

As a result, Kant came to consider the mind–body problem as springing from an incorrect assumption. This assumption could be summarized as follows:

- Motor force is the only cause of the movement of bodies—when in fact an external impulse is needed to bring about action,
- Only bodies are made to move by motor force, while souls come under a different order—while in fact this force is the foundation of both physical and mental phenomena.

This is why mind–body relations can only be explained by reference to the interaction of bodies. This, to Kant, is apparent already at the moment of creation. God's contribution to the world—as already mentioned—is limited to the granting of an order of laws. This order is a set of relations God wants actualized in the world. The most important of these is that between a simple entity (monad-mind) and its physical representation—the physical monad (body). The monad and the physical monad make up an entity composed of mutually complementary parts. The relationship of these parts is governed by the *Principle of Co-existence*.

Thanks to this unity, the monad is capable of bringing about changes in the internal state of other monads. This is done solely through the intermediary of bodies, as when stones are thrown into water and ripples appear, modifying one another.[22] Impulses originating in the external world reach the monad solely through the intermediary of a field.[23]

Going further, Kant concludes that objective knowledge of the world is impossible. One may only speak of bodily cognitions—knowledge in which the body serves as a link between mind and world. This is the pinnacle of the *Principle of Co-existence*.

The *Principle* states that images of the external world which reach the monad are—on account of the nature of the body—necessarily deformed. The external world is not merely filtered but interpreted by the body, responding to external stimuli—although these responses are in keeping with the existing order of laws. Yet the result of these responses reaching the monad does not carry any immediate information about the external world. Just as a blind man can only differentiate

[22] Schönfeld (1999).

[23] Cf. G. B. Kerferd, E.D. Walford, *Selected Pre-Critical Writings*…, op. cit., pp. 44–49.

between tactile impressions, but cannot tell whether the one touching him is an Englishman, an Ethiopian or a Chinese.

The Kantian theory of a priori forms, which came to dominate the thinker's critical philosophy, is very close at hand now. One can also clearly discern the basis for Kant's statement concerning the impossibility of knowing things in themselves.

The body thus receives and responds to signals from the external world; the monad, on the other hand, feels these responses and—on their basis—forms a picture of external relations. This picture reflects signals coming from the body and is of necessity limited by the nature of the possibilities the body has at its disposal.

Furthermore, since monads co-operate via the intermediary of bodies, they make use of internal force to create both physical and mental phenomena (including perceptions). This is why the concept of force cannot be explained by reference to any thing, but is of necessity related to the very idea of action. This is manifest in the way in which one state changes on account of another. In order to elucidate the concept of force it is necessary not only to ask *how?*, but also *why?*

To do this, we must establish a law governing all physical phenomena. As such, it would be the basic law of nature. And yet it is impossible to point to such a law ("no experience of a thing makes it possible to understand [the existence] of such a force"[24]), although much can be said about it. The basic law of nature is the following:

> In fact, I have rejected with the greatest care all arbitrary fictions. After I place the world in the simplest chaos, I have applied to it no forces other than the powers of attraction and repulsion, so as to develop the great order of nature. These two forces are both equally certain, equally simple, and at the same time equally primal and universal. Both are taken from Newtonian philosophy. The first is now an incontestably established law of nature. The second, which Newtonian science perhaps cannot establish with as much clarity as the first, I here assume only in the sense which no one disputes, that is, in connection with the smallest distributed particles of matter, as, for example, in vapours. From such simple grounds as these, I have produced the system which follows in a natural manner, without imagining any consequences other than those which the reader's attentiveness must observe entirely on its own.[25]

IV

The Principle of Co-existence plays an extremely important role in Kant's philosophy, not only by providing a framework for solving the mind–body problem, but by capturing the very reason for its existence. In the *Physical Monadology* Kant defines being as the union of permanently joined elements. This union (the monad) can exist in both the physical (the physical monad, center of forces) and mental

[24] Kant I, *Allgemeine Naturgeschichte*…, op. cit., p. 277.

[25] Op. cit., p. 365.

realms (reason as the permanent union of the practical and theoretical faculties as well as the faculty of reason).

The *Principle of Co-existence* also found reflection in the works of Kant's successors, such as Fichte, Schelling, Hegel and Feuerbach. It had significant—though often hidden—repercussions on later philosophy of mind. The notion of force and the principle of its operation became key concepts in resolving the mind–body problem. As a result, philosophy of mind concentrated on the search for a principle explaining the occurrence of two complementary types of phenomena. This established a tradition which, to a greater or lesser extent, has survived to our day.

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