

CAN NEUROLOGICAL EVIDENCE REFUTE FREE WILL?

The failure of a phenomenological analysis of acts in Libet's denial of «positive free will»

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ABSTRACT: In a first part of this paper I expound briefly the essential characteristics of free will. The second part deals with the objections of Benjamin Libet, allegedly based on brain-scientific foundations, against «positive free will». The third and main part shows that Libet's anti-positive-free-will-position is due to an almost complete failure of a phenomenology of the conscious acts that precede, accompany and follow voluntary movement. The fourth part defends the thesis that Libet's experimental results, far from supporting his philosophical stance, contain strong empirical confirmations of human free will, which, apart from a phenomenology of human acts, becomes further clear upon noticing striking philosophical deficiencies and contradictions in his distinction between 'positive' and 'negative' free will. The conclusions summarize the results, according to which positive free will and causality through freedom exist and are confirmed by Libet's and other test results. Free will is the primary and model case of an efficient cause, instead of contradicting or challenging the principles of causality and of sufficient reason.

KEY WORDS: neurology, free will, libet, free acts, free causation, indeterminism, determinism.

¿Pueden las evidencias neurológicas refutar el libre albedrío?:

La falta de un análisis fenomenológico de los actos en la negación del «libre albedrío positivo» en Libet

RESUMEN: En una primera parte de este ensayo expongo brevemente las características esenciales de la voluntad libre. La segunda parte se ocupa de las objeciones de Benjamin Libet, pretendidamente basadas en fundaciones científicas, contra el libre albedrío «positivo». La tercera y principal parte demuestra que la posición de Libet es debido a una falta casi completa de una fenomenología de los actos conscientes que preceden, acompañan y siguen el movimiento voluntario. La cuarta parte defiende la tesis que los resultados experimentales de Libet, lejos de apoyar su postura filosófica, contienen unas confirmaciones empíricas fuertes del libre albedrío del hombre. Aparte de una fenomenología de actos humanos, un análisis de deficiencias y contradicciones filosóficas en la distinción entre el libre albedrío «positivo» y «negativo» corrobora adicionalmente la existencia de una «voluntad libre positiva». Las conclusiones resumen los resultados, según los cuales la voluntad y la causalidad por actos libres «positivos» existen y son confirmadas por Libet y otros resultados empíricos. La voluntad libre es el caso primario y modelo de una causa eficiente, en vez de implicar una contradicción desafiador a los principios de la causalidad y de la razón suficiente.

PALABRAS CLAVE: neurología, voluntad libre, actos libres, causalidad libre, indeterminismo, determinismo.

1. EXPERIENCE AND BRIEF PHILOSOPHICAL ANALYSIS OF FREE WILL, FREE ACTS, AND FREE CAUSATION

When we speak of a free act, we mean first that a given act is caused by the person herself who possesses the power of free will, and not by any material or spiritual cause outside of her, neither by chains of electrical and chemical causes in the brain, nor by society and education, nor by God, who would predetermine and force, or determine in a softer way without experienced «coercion», a person to act in a certain manner. The person herself as cause of free acts refers furthermore to the person as conscious agent

who engenders a free act consciously through an inner «fiat» (which is not to deny that the originally conscious act can give rise to different senses of super-conscious or also subconscious will, of which we do not always have conscious, let alone reflexive awareness). To say that the person causes a free act does therefore not only exclude that her free acts have a sufficient cause outside of her, but also prohibit that the cause of a free act could be situated *in* her pre-given nature or her physiological or chemical-electrical makeup or the «unconscious brain», over which she has no dominion and control; in other words, calling a person's will free means, among many other things, that she can determine herself to will, causes her free acts consciously from herself and is herself lord over her willing or not willing, over the being or non-being of her acts, as Aristotle formulates in a most impressive metaphysical characterization of free will¹.

Thus we understand in this paper free will in the sense which is often called today, in some abuse of language, «libertarian». Using this term here, we disassociate ourselves from many elements of this view as it is defended by some analytic philosophers and philosophical circles, but do retain its essential tenet that we are in a sense the prime mover of our will, its ultimate or first cause and that it therefore truly is «up to us» what we will or do².

This characteristic of free will is denied by so-called «compatibilist» views of human free will which maintain that an action can be both completely caused by a cause outside the person and her control and still be free. I consider such a compatibilist notion of free will, in contrast to a straightforward incompatibilist determinism that simply denies free will (which I consider a grave error but not an absurd position) a contradiction in terms³, and therefore will in the following consider and defend, against Libet's objections, a non-compatibilist («libertarian») conception of free will according to which the person truly has the capacity to engender free acts and be their ultimate cause, therefore being, in a true and ultimate way, responsible for them. In other words, calling a person's will free means, in the last analysis and among many other things, that she can determine herself to will something or be herself cause of her free acts, which is what determinists and, in a special soft variety of it, Libet, deny.

Robert Kane defends in a recent book, in which he distinguishes «five freedoms», such a «libertarian view», the position that the person truly possesses free will and that

¹ See ARISTOTLE, *Eudemian Ethics*, II.vi.8-9; 1223 a 3 ff.: «*hoon ge kurios esti tou einai kai tou mee einai*» («and he is lord of their [his actions'] being and non-being»). See also ARISTOTLE, *Nichomachean Ethics*, III; and *Magna Moralia*, 87 b 31 ff., especially 89 b 6 ff. The moments of self-dominion, self-governance, and self-determination have also been investigated in fine analyses by KAROL WOJTYŁA in his *The Acting Person* (Boston: Reidel, 1979).

² «Libertarian» has in ordinary language completely different senses and its relatively recent philosophical meaning deviates from the ordinary usage of the English or German language and associates quite a few additional elements to the strong defense of free will. For both of these reasons, as a philosophical term, it is an artificial creation. Robert Kane expresses, mainly for the second reason, similar misgivings about the term and proposes to call his «libertarian» position better «free willist view». See ROBERT KANE, *The Significance of Free Will* (New York/Oxford: Oxford University Press, 1996/1998), pp. 3 ff. See also the defense of 4 major positions for and against free will in JOHN MARTIN FISHER, ROBERT KANE, DEREK PEREBOOM, and MANUEL VARGAS, *Four Views on Free Will* (Oxford, etc.: Blackwell Publishing, 2007, 2010).

³ For a vociferous defense of such a compatibilist position see JOHN MARTIN FISHER, *The Metaphysics of Free Will* (Oxford UK and Cambridge USA: Blackwell, 1994/1995, reprinted 1997). Statements like the following one (*ibid.*, p. 159). «There is simply no good reason to suppose that causal determinism in itself... vitiates our moral responsibility». I regard absurd in the strictest sense: they contradict an absolutely necessary and indubitably given state of affairs: responsibility necessarily presupposes free will that is *not* determined by any cause outside the conscious center of the person, outside the person herself and her capacity of self-determination. Another defense of a compatibilist position is presented by DANIEL C. DENNETT in his book *Freedom Evolves* (London, etc.: Penguin Books, 2003).

particularly the latter's moments of «free self-determination» and «free self-formation» are truly incompatible with determinism. He points out that merely to have «alternative possibilities» and acting in an indetermined way is not enough to explain free will, because both of these moments could be attributed to animal behavior as well as to random events of subatomic nature which certainly neither possess consciousness nor free will⁴. Kane insists that the free will that includes, besides AP (alternative possibilities)⁵ also UR (ultimate responsibility), cannot be reduced to the three kinds of «freedom» that Kane calls «compatibilist freedoms»⁶, because he holds them to be compatible with determinism.

His speaking of «compatibilist freedom» is, I believe, only correct for the first one of these three meanings: freedom from coercion. For this freedom can no doubt exist also in an animal or a human being who would lack free will⁷. Moreover, while Kane is undoubtedly correct that ultimate responsibility (or simply moral responsibility) necessarily presupposes freedom, «ultimate responsibility» does not seem to me to constitute the essence or an indispensable mark of free will as such, but rather a moral and legal *consequence* of free will that enters the stage of human life only when the free subject is faced with, and acts towards, morally or legally relevant goods or evils, and therefore is not found in Libet's experiments or in the freedom of a chess player and countless other uses of free will that move as it were outside the legal and moral sphere and hence do not entail responsibility properly speaking⁸.

⁴ He supports this by examples from J. L. AUSTIN'S, «Ifs and Cans» (1961), G. ELIZABETH M. ANSCOMBE, FILIPPA FOOT, and his own. See his «Some Neglected Pathways in the Free Will Labyrinth», in: ROBERT KANE (Ed.), *The Oxford Handbook of Free Will* (Oxford: Oxford University Press, 2002), pp. 406-437, pp. 409-411.

⁵ See also JOHN MARTIN FISHER, ROBERT KANE, DEREK PEREBOOM, and MANUEL VARGAS, *Four Views on Free Will*, cit., pp. 16 ff.

⁶ See his philosophically fascinating and well-written book: ROBERT KANE, *A contemporary Introduction to Free Will* (New York/Oxford: Oxford University Press, 2005), especially pp. 13 ff., and pp. 163-174.

⁷ (1) The first one of these, which Kane calls somewhat misleadingly «freedom of self-realization», consists in not being coerced. It is the kind of «Skinnerian freedom» that is praised in Skinner's novel *Walden Two*. At least as long as this type of freedom is no more than the absence of external coercion, also the water that is unconstrained by a riverbed, or the lion who escapes from his cage and roams around in the desert possess freedom, which of course does not imply that they possess free will and hence to recognize this freedom is no doubt logically compatible with determinism. Nonetheless, I would not call it «compatibilist freedom» because also this freedom receives an entirely new and proper sense only in persons who possess free will. (2) The freedom of «reflected self-control», while differing also in a fictional «determined person» (which I consider a *contradictio in adjectu*) from the unlicensed freedom of the «wanton» who gives in into every desire that crops up, would seem to be misnamed «compatibilist freedom» because without authentic free will it would be nothing than an «illusion of reflected self-control». (3) The same applies even more strongly to the «freedom of self-perfection» which includes moral perfections and would be wholly undermined, reduced to a sheer illusion, if a person who strives for perfection, were not to possess free will but would be determined to do so by some causes outside his control. In that case, his moral values would entirely collapse and be a mere illusion.

Kane in his generally speaking superb analysis of free will relates all five aspects of free will either to the second perfection of the will as cause of acts, on the one, or to self-perfection, self-formation, etc. on the other hand, thereby failing to analyze the first perfection of free will in the response to objects and values different from the self and the capacity to affirm things and especially persons *for their own sake*, in a response *due to them*, an analysis we owe to DIETRICH VON HILDEBRAND, *Ethics*, 2nd ed. (Chicago: Franciscan Herald Press, 1978), ch. 3; 17; 20-25. It would be most valuable to take into consideration here also the many contributions Antonio Millán-Puelles has made towards a philosophy of free will, for example in his *El valor de la libertad* (Madrid: Rialp, 1995), or in his *El interés por la verdad* (Madrid: Rialp, 1997), particularly his reflections on the ethical dimensions and importance of the interest in truth, those of Xavier Zubiri or those of Juan-Miguel Palacios. The narrowness of our topic does not allow us to discuss these and many others of exceeding importance here.

⁸ On the distinction between morally relevant goods and values from moral values and also from goods that are not morally relevant see DIETRICH VON HILDEBRAND, *Ethics*, cit., ch. 19. See also my discussion

On what Kane attributes as the «second mark» to free will: alternative possibilities, I would say the following: alternative possibilities in one sense belong to the essence of free will, but they do not belong to it in every sense of the word, as Augustine has pointed out in his *Retractions* of his earlier definition of free will in terms of the choice between good and evil, and as more explicitly Anselm of Canterbury (Aosta) has insisted on⁹. Therefore, we cannot understand «libertarian free will» just in terms of *AP* but must «dig deeper»: Free will indeed presupposes, at least theoretically, and clearly in all cases of the «arbitrary actions» Libet investigates, that a person could also perform other acts and realize alternative states of affairs and hence that her acts are not necessarily performed, although this does not exclude that there can exist an objective «necessity of meaning» and a related «necessity that follows from an inherent goodness or from an evil attitude of a person», which constitute no opposites to freedom of the will¹⁰. But even here the abstract possibility of willing something else or of realizing the opposite state of affairs belongs to the essence of free will, at least if the free will is only considered from the point of view of the «power» of the person and not from that of the meaning and value of its object and of a preexisting free attitude of the subject of a free act. This free power of the will that is the opposite of being forced to act by a cause foreign to the person is in no way suspended by what we call the «necessity of meaning» which precisely appeals to freedom and presupposes it, nor by the «necessity that flows from the lasting goodness of a person» which itself proceeds from prior free acts of the good person who «cannot commit certain evil acts» *not* because she would lack the power to do so but because her free will is so fixed in the good that she «can» no longer act against her own lasting goodness and victorious free attitude¹¹. Therefore there is also an ultimate responsibility for having taken the free stances from which others and certain actions follow with a type of necessity without any of the single acts that flow «necessarily» from the good attitude or virtue losing its character of a free act¹².

of free will, causality, and necessary rules in chess in JOSEF SEIFERT, *Schachphilosophie* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989), ch. 2.

⁹ See AUGUSTINE, *De libero arbitrio*, Books II-III; Anselm of Canterbury (Aosta), and *Retractionum libri duo*. In his *On Freedom of Choice (De libertate arbitrii)* Anselm rejects the earlier Augustinian definition that freedom is the faculty to make the choice between good and evil, and defines freedom of choice instead in a purely positive way (that also applies to heavenly and divine freedom) as «the power to preserve rectitude of will for its own sake» (*DLA* 3). See also the references to these teachings in ROBERT KANE, *A contemporary Introduction to Free Will*, cit., pp. 170-171.

¹⁰ See on this HANS-EDUARD HENGSTENBERG, *Grundlegung der Ethik* (Stuttgart: Kohlhammer, 1969); the same author, *Philosophische Anthropologie*, Stuttgart 1957, 3. Auflage (Stuttgart: Kohlhammer, 1966); see also the partial critique of his view in JOSEF SEIFERT, *Was ist und was motiviert eine sittliche Handlung? (What is and what Motivates a Moral Action?)* (Salzburg: Universitätsverlag A. Pustet, 1976); ¿*Qué es y qué motiva una acción moral?*, presentación de Alfonso López Quintás, traducción y ensayo introductorio de Mariano Crespo (Madrid: Centro Universitario Francisco de Vitoria, 1995).

¹¹ See on this the notion of self-forming freedom in Robert Kane's many writings on the subject, as well as the fine distinctions and analysis of the relations between free inner responses, free external actions and free attitudes in DIETRICH VON HILDEBRAND, *Moralia*. Nachgelassenes Werk. Gesammelte Werke Band 5 (Regensburg: Josef Habel, 1980), and his earlier ethical writings.

¹² The basic point made here is also made by ROBERT KANE in his «Some Neglected Pathways in the Free Will Labyrinth», in: ROBERT KANE (Ed.), *The Oxford Handbook of Free Will*, cit., pp. 406-437, especially p. 408. In JOSEF SEIFERT, *Was ist und was motiviert eine sittliche Handlung? (What is and what Motivates a Moral Action?)* (Salzburg: Universitätsverlag A. Pustet, 1976); ¿*Qué es y qué motiva una acción moral?*, presentación de Alfonso López Quintás, traducción y ensayo introductorio de Mariano Crespo (Madrid: Centro Universitario Francisco de Vitoria, 1995). I have tried to show that the interesting way in which Hans-Eduard Hengstenberg conceives of the freedom of the will belonging *only* to the fundamental free attitude and not to the single acts that flow from it, is incorrect. See also HANS-EDUARD HENGSTENBERG, *Grundlegung der Ethik* (Stuttgart: Kohlhammer, 1969); the same author, *Philosophische Anthropologie*, Stuttgart, 1957, 3. Auflage (Stuttgart: Kohlhammer, 1966).

Free will has two dimensions or perfections; one consists in the capacity to respond meaningfully and intentionally to some object endowed with some kind of importance, speaking a free 'yes' or 'no' to it, be that object or value outside or inside our own person, a dimension of free will wholly ignored in Libet's experiments which test brain events solely in connection with totally unplanned, unmotivated and senseless voluntary movements, in which practically any meaningful response to an object (except to the expected scientific value of the test) is absent and therefore such a wholly arbitrary voluntary action is a sample of the lowest (namely arbitrary) use of free will.

There is a second dimension of free will: not that of taking a stance to an object but that of being able to cause changes and initiate chains of causes, thereby realizing states of affairs outside the act of willing itself. Libet only tests this second dimension of free will, divorcing it wholly from the first and more important one of giving free and meaningful responses to values and goods, and reducing it, as we shall see, to «negative freedom».

Both purely inner free acts and responses, and free actions that realize states of affairs outside themselves and normally (apart from wholly arbitrary acts) are based on some inner free response to a person or object, entail the primary «causality of free will itself», in virtue of which the person can engender free acts: either the free response to an object of the act, or the free willing and commanding of an external action.

Free actions, however, that aim at the realization of states of affairs outside of us entail a further causality that causes not only free acts *in the person* but also changes *outside the person*. Such actions, especially bodily actions in which we interfere in the world such as when we save a child in a burning house, are truly free and responsible actions only if the free agent in some sense is the ultimate or first cause not only of his willing itself, but also of the further changes or events inside or outside himself. In such free actions we realize new states of affairs that would not exist without the person's willing but which we cannot engender like our will itself, but can realize only by the conscious use of bodily movements and strength, as well as by using causes that rule the physical universe and by the unconscious use or mediation of neurological events in the brain that in some way proceed from our conscious willing. Since free will is not a free-floating accident or «trope» (that cannot exist at all) but a power of the *acting person*, we can speak here of *agent-causality* in contradistinction to event-causality, or to any causality exerted by purely physical or impersonal living beings.

This agent-causality of the free person is first of all found in the relation between the free agent and his inner free act itself, which he *engenders*: here the causal bond between my conscious free center and the act it engenders is immediately experienced and evident, as could be shown¹³. But agent-causality also extends to the dominion the person has over her bodily actions and through them over their effects in the world, a causality that is exerted by the free agent through acts that he, possessing free will, immediately engenders, but is mediated through many physiological and physical «secondary causes» whose being caused by the free will is linked to the unconscious and not directly experienced connections between mind and brain, brain and nerves, nerves and muscles

¹³ See JOSEF SEIFERT, *Leib und Seele. Ein Beitrag zur philosophischen Anthropologie* (Salzburg: A. Pustet, 1973); the same author, *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989); the same author, «To Be a Person – To Be Free», in: ZOFIA J. ZDYBICKA et al. (Ed.), *Freedom in Contemporary Culture. Acts of the V World Congress of Christian Philosophy. Catholic University of Lublin 20-25 August 1996, Vol. I* (Lublin: The University Press of the Catholic University of Lublin, 1998), pp. 145-185.

in the whole body, as well as to the countless causes that operate in the inanimate and living things outside of us.

And while our freely and consciously bringing about changes in the world outside us and in our body is overwhelmingly clearly experienced and recognized by all of us (for example when we have shot another person dead or when we blame some person and hold her responsible for the consequences of her actions), the psycho-physical causality of human acting as such is not given with the same indubitable and immediate evidence with which we know that we cause our own willing. Because of the mediation of this free agent-causality through all kinds of unconscious physiological events and causes the occasionalist views and negations of this causality, claiming for example that God moves our bodies «on the occasion of our free will» or «according to a pre-established harmony» between our wills and natural events, as Geulincx or Leibniz held¹⁴, do not stand in an absurd contrast to the experience of our agent-causality, however oddly they contradict our impression of acting ourselves.

«The phenomenon of a causality exerted by free agents through free acts that are not uncaused but caused by the person who initiates causal processes is wholly different from randomness and chance with which, particularly since Heisenberg's discoveries and philosophical interpretations of them¹⁵, some scientists seek to explain free will. The insufficiency of this «explanation» of freedom through chance or uncaused wanton events is evident if we consider that free acts are not uncaused or random events but are caused by the free center and by agents, and if they are caused for rational reasons, they do not occur by chance at all¹⁶. Moreover, agent-causality essentially presupposes conscious personal subjects and cannot be thought simply to occur in nature, like the chance events would do that modern physicists postulate in microphysical realms¹⁷. Furthermore, free acts may be performed in a lasting and permanent as well as meaningful way and thus differ wholly from random occurrences in the microcosm»¹⁸.

¹⁴ See ARNOLD GEULINCX, *Ethics*, trans. Martin Wilson, Brill, 2006, and his *Opera philosophica* Edited by J. P. N. Land, The Hague, Martinus Nijhoff, 1891-1893 (3 vols.); III, 17; III, 222. For a more brilliant development of this view in the theory of preestablished harmony see G. W. LEIBNIZ, «Essais de Theodicée sur la bonté de Dieu, la liberté de l'homme et l'origine du Mal», in: G. W. LEIBNIZ, *Die philosophischen Schriften*, ed. by C. J. Gerhardt (Hildesheim: G. Olms, 1965), in 7 vols., vol. VI, pp. 21-471. See also *Philosophische Abhandlungen*, in G. W. LEIBNIZ, *Die philosophischen Schriften, ibid.*, Nr. XI, *Die sog. Monadologie*, Vol. VI, pp. 607-623. See also my discussion of these positions in JOSEF SEIFERT, *Leib und Seele. Ein Beitrag zur philosophischen Anthropologie* (Salzburg: A. Pustet, 1973); *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989).

¹⁵ See WERNER HEISENBERG, *Physics and Philosophy. The Revolution in Modern Science*, first Harper and Row edition (New York: Harper and Row, 1962).

¹⁶ To recognize this fact has, however, immense consequences which Kornhuber and Libet may fail to appreciate fully but which especially Libet clearly hints at and even developed a theory to explain speculatively, by reference to quantum mechanics. BENJAMIN LIBET, «Do we Have Free Will?», pp. 561 ff. A concise and very clear fourfold argumentation why the admission of chance events in modern physics has nothing to do with arguments in favor of free will is found in ROBERT KANE, *A contemporary Introduction to Free Will*, cit., pp. 7-10; 34 f.; 64 f.

¹⁷ I think that absolute chance is impossible, holding on this matter the same opinion defended by Aristotle on the basis of his superb distinctions between different things that we call «chance» or fortuitous events. See ARISTOTLE, *Physics*, Book II, ch. 4-7; 8.

¹⁸ Also the important phenomenological philosopher Hans Jonas seeks to accomplish this complete impossibility: to explain free will through chance events; see his HANS JONAS, *Macht oder Ohnmacht der Subjektivität? Das Leib-Seele-Problem im Vorfeld des Prinzips Verantwortung* (Frankfurt a.M., 1981). Another application of modern physics and the uncertainty relation to free will is proposed by KARL R. POPPER and JOHN C. ECCLES, *The Self and Its Brain* (Berlin/Heidelberg/London/New York: Springer-Verlag International, 1977; corrected printing 1981). They insist on the «openness of the brain towards the free will and mind».

Regarding the second dimension of free will, namely its discussed role as cause and «king of free actions», we can further distinguish «positive actions» that realize a state of affairs in the world and «negative free acts» of omission, of refusing, or of stopping to act, a distinction Libet makes and whose critical aspects and claims will occupy some of our major attention.

2. LIBET'S BRAIN-SCIENTIFIC CHALLENGE TO «POSITIVE FREE WILL» AND SOME COUNTER-CHALLENGES TO HIM

The brain scientist Benjamin Libet takes a partially deterministic position on the question of free will, based on what we might call his «empirical experiments with human free will». Libet denies «positive free voluntary acts;» these would be pure illusions; the free acts which they seem to be would in actual fact be nothing but results of cerebral causes, a thesis Libet seeks to prove by his test results according to which a «readiness potential» (RP), i.e. a markedly increased electro-chemical activity in the brain, precedes both voluntary movement and the conscious decision to act. Nonetheless, according to him free will can exist in the form of «negative free will», i.e., of an effective vetoing, interruption or abruption of voluntary actions; and as such free will seems even to be «empirically demonstrable». He formulates:

«I have taken an experimental approach to the question of whether we have free will. Freely voluntary acts are preceded by a specific electrical change in the brain (the “readiness potential”, RP) that begins 550 msec. before the act. Human subjects became aware of intention to act 350-400 msec. after RP starts, but 200 msec. before the motor act. The volitional process is therefore initiated unconsciously. But the conscious function could still control the outcome; it can veto the act. Free will is therefore not excluded»²⁰.

The openness of the material universe of the brain as well as of the physical material world which is part of the brain and also of the external physical world with respect to the mind, insofar as all these parts of the physical world are subjected to free deeds of human persons, is a completely new and different form of «openness» of matter to the mind. It is an openness of the physical world for influences from reason and from freedom, not the mere commonly assumed fact that the laws of the physical universe, at least in the micro-physical world, are only statistical and not absolute, or that chance has a place in nature.

The relationship between the brain and free subjects is completely new and different in comparison to the «openness» of matter in the sense of statistically calculable exceptions from general rules. For chance is just as different from freedom as causal determination. A statistical gambling with chances is not less far from the openness of matter with respect to mind in freedom than a strictly deterministically closed material universe. Cf. also similar criticisms of explaining free will in terms of microphysical chance events in ROBERT KANE, *A contemporary Introduction to Free Will*, cit., esp. pp. 8 ff.; 133-135.

¹⁹ Unlike most of his colleagues who are pure determinists.

²⁰ BENJAMIN LIBET, «Do we Have Free Will?», in: ROBERT KANE (Ed.), *The Oxford Handbook of Free Will* (Oxford: Oxford University Press, 2002), pp. 551-564, p. 551. The same article is also reprinted in WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, (New York: Oxford University Press, 2011), pp. 1-10; for the quote the p. 1. See also: BENJAMIN LIBET, «Time of Conscious Intention to Act in Relation Onset of Cerebral Activity (Readiness Potential)», 106 *BRAIN* 623 (1983). See also BENJAMIN LIBET, ANTHONY FREEMAN and KEITH SUTHERLAND (Ed.), *The Volitional Brain: Towards a Neuroscience of Free Will*, Imprint Academic, 1999 (Cambridge, MA: Harvard University Press, 2004); BENJAMIN LIBET, *Mind Time: The Temporal Factor in Consciousness* (Cambridge, MA: Harvard University Press, 2004); BENJAMIN LIBET, *Mind Time: The Temporal Factor in Consciousness* (Boston, Mass.; London: Harvard University Press, 2004); BENJAMIN LIBET, «Time Factors in Conscious Processes: Reply to Gilberto Gomes», *Consciousness and Cognition* 9 (2000): 1-12; BENJAMIN LIBET, «Timing of Conscious Experience: Reply to the 2002 Commentaries on Libet's Findings», *Consciousness and Cognition* 12 (2003): 321-31; BENJAMIN LIBET, «The Timing of Mental Events: Libet's Experimental Findings and Their Implications», *Consciousness and Cognition* 11 (2002): 291-99. For a solid philosophical critique of Libet's ideas about timing see ALFRED

Now it is clear that Libet's thesis, and that of other researchers who have introduced refined methods of exploring different layers of the *readiness potential*²¹, «neuroimaging signals»²², and other such, is not a purely empirical scientific but primarily a *philosophical one*: the notion of free will itself, the distinction of a vetoing or controlling power of free will from «positive voluntary actions», the question of adequate methods of verifying the point in time of events and a million others cannot be known by empirical tests per se but only by methods of philosophical reflection on these.

This remains true even if Libet neither recognizes the dependence of empirical tests of freedom and of any inductive empirical knowledge on philosophical premises nor the autonomy of philosophical knowledge and of the methods of philosophy, which chiefly investigate highly intelligible *necessary essences* and evident facts²³.

Many criticisms have been launched against these influential theses on free will: that they contain logical contradictions; that they are based on an epistemology unfit to obtain these results; that Libet confounds empirical scientific with philosophical methods, and many others.

We shall mention here only briefly some objections of epistemological nature concerning precise temporal measurements of the occurrence of inner free decisions and stances²⁴, partly seen as problems by Libet himself²⁵. These problems have only apparently, but not

MELE, *Effective Intentions: The Power of Conscious Will* (Oxford: Oxford University Press, 2009), esp. pp. 57-59. See also BENJAMIN LIBET, «Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action», 8 *Behavioral & Brain SCI.* 529 (1985); «The Timing of Subjective Experience», 12 *Behavioral & Brain SCI.* 183 (1989).

²¹ See Trevena's *et al.* studies quoted below.

²² See JOHN-DYLAN HAYNES, «Beyond Libet: Long-term Prediction of Free Choices from Neuroimaging Signals», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 85-96. The author, a radical determinist who regards the experience of free will as an illusion that contradicts the (dogma of) a «causally closed physical universe» reports on his successful use of predicting the that and what of decisions and movements up to 5 seconds before the movement took place and claims that this method is far more precise than the EEG's Libet employed. However, he admits that in almost half of the observed cases (40%) the predictions were incorrect. See *ibid.*, p. 93/1.

²³ See on this DIETRICH VON HILDEBRAND, *What is Philosophy?*, 3rd ed., with a New Introductory Essay by Josef Seifert (London: Routledge, 1991); *Che cos'è la filosofia?/What Is Philosophy?*, English-Italian (Milano: Bompiani Testi a fronte, 2001); the same author, «Das Cogito und die Erkenntnis der realen Welt», *Teilveröffentlichung der Salzburger Vorlesungen Hildebrands: 'Wesen und Wert menschlicher Erkenntnis'*, *Aletheia* 6/1993-1994 (1994), 2-27; see also JOSEF SEIFERT, *Back to Things in Themselves. A Phenomenological Foundation for Classical Realism* (London: Routledge, 1987); the same author, «Was ist Philosophie? Die Antwort der Realistischen Phänomenologie», *Zeitschrift für philosophische Forschung* 49 H 1 (1995), 92-103. See likewise JOSEF SEIFERT, *Discours des Méthodes. The Methods of Philosophy and Realist Phenomenology* (Frankfurt / Paris / Ebikon / Lancaster / New Brunswick: Ontos-Verlag, 2009); *Discurso sobre los métodos. Filosofía y fenomenología realista* (Madrid: Encuentro, 2008).

²⁴ For example, how can we determine in terms of milliseconds when exactly a conscious deliberate act begins – such as wanting to exclaim at the exact point in time at which a fast-moving second hand of a clock reaches 12:10:04:09? Perhaps we can measure by milliseconds the moment of the actual onset of physical movement, but the conscious act is wholly different from the physical movement, which is easy to see if we are not behavioristically confused. See my detailed critique of Gilbert Ryle's and many other less sophisticated forms of behaviorism in JOSEF SEIFERT, *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989).

²⁵ Measuring the exact time of initiation of the will and of the conscious act in which we decide to move is imprecise and could easily explain the few milliseconds of the RP's preceding the physical action and the time the examined person gives as the time of her conscious will to act. Also the enormous variance between different test persons' accounts as to the time they intended or began to move and the distinction of the movement-specific «lateralized readiness potential» (LRP) that is reported to occur only after the decision to move call Libet's conclusions into question both philosophically and empirically. See JUDY ARNEL TREVENA

really been overcome by Libet's using in his experiments clocks (oscilloscopes) that have a sweep-second hand that moves 25 times faster and is much longer than the hands of usual clocks and shows, instead of the normal second-units, 40 millisecond units, and by other devices he has introduced in order to overcome these problems²⁶.

As has been pointed out by many of his critics, Libet takes examples of wholly senseless and arbitrary hand- or finger-movements that have no goal and no underlying motives, actions in which neither what nor when we are performing them has any significance above and beyond themselves; they lack any intended goods or evils personal acts normally intend to achieve and thus are divorced from what we have called «first perfection» of free will²⁷. This is the lowest and a wholly uncharacteristic use of free will, exercised in total arbitrariness.

Moreover, Libet treats, generally speaking, free acts as if their mode of being and the measurability of their occurrence in time were on the same level as purely physical and electrical occurrences in the brain. But not only do they have a completely different structure of temporality by a synthetic element of time-consciousness that combines the just-past held in readiness by retention and anticipating in some fashion the immediate future in protention²⁸, but these acts themselves take place on «an island of the present» and cannot be dissolved into sequences of events that succeed each other rapidly, last only tiny fractions of seconds and begin at an exact temporal 'location' measurable in terms of milliseconds. Because of their different ontological mode of being and temporality their beginning and end cannot be measured in the same way in which purely physical occurrences or brain events can be measured²⁹.

and JEFF MILLER, «Cortical Movement Preparation before and after a Conscious Decision to Move», *Consciousness and Cognition* 11, 162-190 (2002): «Although the Readiness Potential was usually present before all of the decisions to move, consistent with the findings of Keller and Heckhausen (1990) and Libet *et al.* (1983), we found that many reported decision times were before the onset of the Lateralized Readiness Potential, which measures hand-specific movement preparation. The latter finding is consistent with the conclusion that the LRP always started after the conscious decision to move. We conclude that even though activity related to movement anticipation may be present before a conscious decision to move, the cortical preparation necessary for the movement to happen immediately may not start until after the conscious decision to move...». *Ibid.*, p. 188: «Therefore, albeit with some reservations, we conclude that the results of Libet *et al.* (1983) do not unambiguously demonstrate that movement preparation begins unconsciously. In particular, the distinction between the onset of the RP and the LRP before a spontaneous voluntary movement seems crucial. Our finding that reported decision times are always after the onset of the RP but often before the start of the LRP suggests that actual preparation for movement – as opposed to contemplation of it as a future possibility – may not begin until after a conscious decision to initiate the movement immediately». Even Libet confesses with reference to such exact measurements of the performance of conscious acts: «Initially that seemed to me an impossible goal». See BENJAMIN LIBET, «Do we Have Free Will?», p. 553.

²⁶ See BENJAMIN LIBET, «Do we Have Free Will?», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 1-10, p. 2/2. How could the use of such clocks allow an exact temporal measurement of so many free and conscious acts which neither the person in the experiment nor Libet distinguished? See BENJAMIN LIBET, *ibid.*, pp. 553 ff.

²⁷ This distinction was introduced in DIETRICH VON HILDEBRAND, *Ethics*, 2nd ed. (Chicago: Franciscan Herald Press, 1978), ch. 17; 20-25. WALTER SINNOTT-ARMSTRONG makes a similar distinction in his «Lessons from Libet», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 235-246; see p. 239/2.

²⁸ See EDMUND HUSSERL, *Zur Phänomenologie des inneren Zeitbewußtseins* (1893-1917), *Husserliana* 10, hrsg. v. Rudolf Boehm (Den Haag: Nijhoff, 1969); *The Phenomenology of Internal Time Consciousness*, ed. Martin Heidegger, transl. James S. Churchill, intro. Calvin O. Schrag, 4th printing, Bloomington and London: Indiana University Press, 1971. See also JOSEF SEIFERT, *Essere e persona. Verso una fondazione fenomenologica di una metafisica classica e personalistica* (Milano: Vita e Pensiero, 1989), ch. 10.

²⁹ See on this BENJAMIN LIBET, *Mind Time: The Temporal Factor in Consciousness* (Boston, Mass.; London: Harvard University Press, 2004); and the fine critique of ALFRED MELE in his *Effective Intentions: The Power*

This is elucidated by pointing out another philosophical ambiguity in Libet's basis for interpreting the results of his investigations: he reduces the bodily parts of human actions to events that characterize the body taken purely as *Körper*, inasmuch as it is indeed of a similar nature as any other physical thing in life-less nature. But while such a consideration of the body as mere physical thing does justice to a certain *real level* of the human body in which it just *is* another physical thing of a certain extension, weight, color, etc., such a perspective fails to take into account the fact that in feeling pleasure or pain, in being a medium of human perception and an instrument of human action, the human body is much more than a physical object. The human body is also a lived body (*Leib*) that partakes deeply in the conscious life, perceptions and actions of persons. Therefore bodily human actions cannot be reduced to mere material things and sets of physical behaviors and events that take place in them at a point in time that would be measurable in terms of milliseconds.

The serious inexactitude of Libet's alleged measuring the onset of personal acts is particularly and further evident when we consider that Libet partly fails to distinguish a great variety of conscious acts found in the context of any volitional movement, and partly, while distinguishing some of them, does so in a seriously insufficient way. We shall therefore concentrate in the following primarily on some phenomenological objections that are devastating to Libet's views³⁰. They touch one key reason why the philosophical basis of his experiments is quite insufficient: He neglects almost entirely a phenomenological analysis of human acts, to which we shall turn in the major part of this essay and which per se is sufficient to demonstrate many flaws of Libet's conclusions and experiments with free will³¹.

3. A PHENOMENOLOGY OF DIFFERENT CONSCIOUS AND FREE ACTS THAT PRECEDE INTENTIONAL MOVEMENT AS BASIS OF A CRITIQUE OF LIBET'S INTERPRETATIONS OF HIS EXPERIMENTS

Let us then briefly analyze the following series of entirely distinct conscious acts that precede, accompany or follow the voluntary bodily movement and the correlated brain events which Libet explored³²:

of Conscious Will, cit., esp. pp. 117-130. Daniel C. Dennett, who defends a materialist and evolutionary philosophical anthropology that is hard, and in my mind, incapable to be reconciled with free will, not only defends free will and makes a large number of mostly highly perceptive criticisms of Libet's interpretation of his test results but introduces fine points and additional difficulties for Libet's experiments. See DANIEL C. DENNETT, *Freedom Evolves* (London, etc.: Penguin Books, 2003), pp. 228-265. I tried to interpret lived time and the time of personal acts in JOSEF SEIFERT, *Essere e persona. Verso una fondazione fenomenologica di una metafisica classica e personalistica* (Milano: Vita e Pensiero, 1989), ch. 9-10.

³⁰ Trevena *et al.* have shown that the reports of different test persons as to when their free act to move began differ widely, and hence there is no way of substantiating the claims of the exact temporal sequences Libet maintains to exist, based on his averaging out the widely varying reports of test persons and on his methodological bias.

But with this inevitable *inexactitude* of measuring the arising of human actions by milliseconds, Libet's whole philosophical interpretation of his experiments collapses because it measures entirely different conscious and physical acts without distinguishing them and without being aware of the clear impossibility of such a temporal localizing them in terms of milliseconds. The beginning of the first of the described conscious acts could exactly lie at or before the beginning of the build-up of the RP! See references below.

³¹ We could say that he commits an ontological and epistemological category mistake in Gilbert Ryle's sense, and believe that an authentic understanding, quite opposed to Ryle's, of category-mistakes must be phenomenological. See Gilbert Ryle, *The Concept of Mind* (London, 1949).

³² Traces of much simpler distinctions are found in BENJAMIN LIBET, «Do we Have Free Will?», p. 560: «We should also distinguish between *deliberations* about what choice of action to adopt (including planning of when to act on such a choice) and the final intention actually "to act now" ...».

1. There are first the purely inner reflections and *deliberations* that normally precede free acts³³; while they too are freely carried out; they neither are free actions that aim at realizing states of affairs outside themselves nor are they intentions to realize them; they are primarily intellectual acts even though free acts are present in them, as in all intellectual acts which presuppose many free acts or act-elements. Such reflections and deliberations, while they no doubt have some echo in brain activity that has been studied in other experiments, for example in chess players, do not seem to have direct noticeable effects on the emergence of the kind of brain activity examined by Libet that precedes voluntary acts, because these deliberations (to stick to Libet's experiments) precede the decision to move the wrist by a long span of time, and hence exist long before the onset of the «readiness potential».

Nonetheless, they play the role of necessary conditions for the concrete movement that would never take place without these preceding deliberations, as for example, when we deliberate about whether we want to make time for Libet's experiments, whether it will be worth it, whether by partaking in them we might contribute to the philosophical confusions of his interpretations, etc. We would not participate as responsible moral subjects without having conducted and concluded these deliberations and having taken our decisions based on their results. It can even not be entirely excluded that these deliberations themselves, or more precisely their outcomes which underlie the carrying out a voluntary action, do even play a more direct role for the emergence of those brain events (RP) that precede voluntary action by roughly half a second; for the results of our weighing up different aspects that are preserved in memory, do not only motivate the later actions whose execution they have recommended, but may likewise co-cause what Libet takes for «unconscious beginnings of positive volitional acts in the brain».

These brain events of RP, instead of just being «unconscious brain events», could then partly be co-determined by the intellectual outcome of these deliberations which may have their effect on our brains even before we become reflectively aware of their influencing the initiating of a movement or of acting and could, in according with the entirely new order of «causality» found in the life of the spirit and motivation, have «delayed effects» on our brain.

2. There also exists at the end of such deliberations in those who are ready to have tests taken the superactual conscious act of free *intention* to collaborate with these experiments, and hence the decision to move the wrist or flex a finger under such and such conditions in a possibly distant future. Since also this act precedes the build-up of the readiness-potential (RP) by a long time³⁵, it likewise seems to fail to have any noticeable effect on the brain activity that precedes a voluntary movement in the *immediate past*. Nonetheless, this distal and superactually existing intention clearly is not only itself a free act and precedes the action as well as the build-up of the RP, but – unlike intellectual, though morally or legally relevant, deliberations – the lasting and superactual intention³⁶

³³ For their careful analysis see ADOLF REINACH, «Die Überlegung: ihre ethische und rechtliche Bedeutung (1912/13)», in: ADOLF REINACH, *Sämtliche Werke. Kritische Ausgabe mit Kommentar*, Bd. I: *Die Werke*, Teil I: *Kritische Neuauflage (1905-1914)*, Teil II: *Nachgelassene Texte (1906-1917)*, pp. 279-311.

³⁴ Superbly analyzed in PAOLA PREMOLI DE MARCHI, *Etica dell'assenso* (Milano: Franco Angeli, 2002).

³⁵ See on this BENJAMIN LIBET, «Do we Have Free Will?», p. 560.

³⁶ For the investigation of this superactual consciousness and its different forms and fundamental role for actual consciousness see DIETRICH VON HILDEBRAND, *Sittlichkeit und ethische Werterkenntnis. Eine Untersuchung über ethische Strukturprobleme. Jahrbuch für Philosophie und phänomenologische Forschung*, Band 5. Halle: Niemeyer. 1922. S. 462-602; 3, durchgesehene Auflage (Vallendar-Schönstatt: Patris Verlag, 1982); also in Spanish *Moralidad y conocimiento ético de los valores* [presentación y traducción de Juan

to carry out voluntary movements or actions in the future (an intention that persists in our conscious life «superactually» even when we do not consciously think of it), aims explicitly at a future free action in the form of *intending it*. Thus such a consciously lived or superactual *intention* certainly is a distant cause for the coming to be of voluntary movements, because, according to Libet's own admission: without this preceding intention neither the movement nor the RP in the brain would occur. Even more than the deliberations as such in their «purely intellectual character», this *intention* (that can last for many hours and days in us and, in the limited context of Libet's experiments, become actually conscious and concretized in the laboratory test situation) could very well be co-responsible for the arising of the RP preceding our movement and our concrete «decision to move».

3. Once the person, in our example, has begun the test, she performs the far more concrete free act of planning to move the hand in the proximate future, i.e., as soon as she either experiences an inner urge to do so or as soon as the clock will have indicated a certain 40 millisecond unit and therewith the time when the person has decided actually to move her limb; she can also choose a wholly arbitrarily moment for her movement. *These concrete plans, when to move the hand*, or simply, if an arbitrary moment without any pre-planning is chosen, as Libet wanted in his later experiments, the concentration necessary to take *simultaneously* note and remember the exact position of the clock and the time when we experience an «urge» to act³⁷, or become aware of our ensuing direct act-intention, concretize the preceding general intention to cooperate with the experiment but may still occur a few minutes before acting. Also this planning, which Libet in his later experiments discourages, but which always will remain part of human acting, at least in the form of attending to the clock in order to take note when we carry out an arbitrary movement, is part of getting ready and in some ways concretizes the preceding free intention to flex the index finger or to turn our wrist.

A concrete act of planning when to move may precede the build-up of the RP by far. However, although it is *a)* clearly a free act, *b)* an act that precedes the build-up of the RP, and *c)* an act without which the act of moving and the build-up of the RP would never occur, also this concrete planning might fail to produce any remarkable physiological effects on the brain. Nonetheless we can of course not absolutely exclude that, like an act of (auto-) hypnotizing or an intention to wake up at a certain time the next morning, also this act of concrete planning could produce or at least influence, as its delayed effect, the build-up of the RP.

4. Speaking of the «un-planned» movements Libet prescribes, we cannot fail to note the paradoxical nature of demanding them for the sake of testing «free will»: How can I

Miguel Palacios], Madrid: *Cristiandad*, 2006); see also the same author, *Ethics*, 2nd ed. (Chicago: Franciscan Herald Press, 1978); *Ética*, trad. Juan José García Norro (Madrid: Ediciones Encuentro, 1983), especially chs. 26 ff.; and his *Das Wesen der Liebe*; DIETRICH VON HILDEBRAND, *Gesammelte Werke III* (Regensburg: J. Habel, 1971), 2e Aufl., italienisch-deutsch (Milano: Pompiani, 2003); *La esencia del amor* (Pamplona: EUNSA, 1998), ch. 2.

³⁷ Daniel C. Dennett makes us well aware of the problems connected with this. Particularly interesting is his insistence not only on the incomparable forms of temporality of conscious decisions and brain events and the frequent misjudgments of persons of the time of occurrence of single conscious acts, but also on the additional difficulties of having to note simultaneity between the perceived position of a clock and the beginning of our decisions, which coordination, being far from easily achievable or of negligible difficulty, poses many serious problems that can explain the results of Libet's experiments without taking any refuge to a denial of positive free will. Dennett makes these criticisms and proposes defenses of free will even though, as compatibilist, he ultimately is also a determinist and materialist. See DANIEL C. DENNETT, *Freedom Evolves* (London, etc.: Penguin Books, 2003), pp. 228-265.

test the effect of free intentions on the brain if I forbid the tested person to have them? Does this test requirement not precisely impede any empirical test with «free will» and investigate instead unfree impulses to act which the subject follows? At any rate, it is decisive not to confuse the suddenly arising «urge to move» (for example because we cannot hold the hand still too long) with a free act³⁸. If Libet means in his interdiction of pre-planning that we should simply allow a spontaneous physiologically compelling movement to take over without blocking it, which he undoubtedly does at times³⁹, then this urge and possibly the ensuing movement is more like a reflex and no free act at all and therefore can of course be preceded and caused by some brain events⁴⁰. Hence Libet's experiments would, if such a requisite (that seems to contradict the very nature and psychology of human acts and whose real occurrence in rational and awake persons in a normal state of consciousness may reasonably be doubted) could be heeded, be a test of «urges to act which we suffer passively» rather than of anything that could qualify as free acts. At any rate, although Libet *prescribed* a radical renouncement of any pre-planning, he did not examine whether this command actually was or even *could* be fulfilled. It would seem clear that such an examination that may even turn out more difficult than his original tests would show that this goal of «wholly unplanned human acting» cannot be achieved, because, in one way or another, some pre-planning is inseparable from human acts⁴¹.

5. Once the attentively observed clock approaches the pre-agreed or intended position, or the time when the test person feels an urge to move, she will far more concretely *get ready to move the hand imminently*. There is then this further distinct *act of starting concretely to prepare to move the hand* (getting ready to act) in an extremely short time. This act, even when the movement is carried out spontaneously, resembles what occurs in a runner when he hears the count-down «one, two, three... Go». And why could this free act of *getting*

³⁸ This confusion has been pointed out by a number of critics of Libet, for example by ALFRED R. MELE in his *Effective Intentions: The Power of Conscious Will*, cit., especially pp. 55 ff.; by ELISABETH PACHERIE and PATRICK HAGGARD, «What are Intentions?», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 70-84, p. 71 ff.; by SUSAN POCKETT and SUZANNE C. PURDY, «Are Voluntary Movements Initiated Preconsciously? The Relationships between Readiness Potentials, Urges, and Decisions», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *ibid.*, cit., pp. 34-46, particularly *ibid.*, p. 39/1 ff.

³⁹ See BENJAMIN LIBET, «Do We Have Free Will?», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., p. 2, where he describes his experiment in this way: «In the actual experiment, then, each RP was obtained from an averaged electrical recording in 40 trials. In each of these trials the subject performed the sudden flick of the wrist whenever he/she freely wanted to do so. After each of the trials, the subject reported W, the clock-time associated with the first awareness of the *wish to move* [emphasis mine, JS] (Libet, Gleason *et al.*, 1983). See especially Mele's quotes from Libet in ALFRED R. MELE, «Libet on Free Will: Readiness Potentials, Decisions and Awareness», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 23-33, p. 25/1.

⁴⁰ An analogous critique has also been developed by ALFRED R. MELE, *Effective Intentions*, cit., ch. 6, pp. 50 ff. See also ALFRED R. MELE, «Libet on Free Will: Readiness Potentials, Decisions and Awareness», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 23-33, especially 24 ff. See likewise an even stronger version of the same objection in ADINA L. ROSKIES, «Why Libet's Studies Don't Pose A Threat to Free Will», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 11-22.

See Susan Pockett's very minute report on Libet's experiments, in her «The Neuroscience of Movement», pp. 16 ff., available on Internet: <http://mitpress.mit.edu/books/chapters/0262162377chap1.pdf>, and also her interesting distinction of different meanings and possible misapprehensions of the term «intention» there.

⁴¹ See also *The Blackwell Companion to Consciousness*, Banks, W. P. and Pockett, S. (2007) Benjamin Libet's Work on the Neuroscience of Free Will, in *The Blackwell Companion to Consciousness* (eds. M. Velmans and S. Schneider), Blackwell Publishing, Malden, MA, USA. doi: 10.1002/978047051466.ch. 51.

ready to act in the immediate future not precede, for example by one half second, the actual hand movement? And why should not precisely *this free act* of «getting ready» cause the *readiness potential* (in exact correspondence to its name)?⁴².

6. There is furthermore, as a clearly distinct moment, the free act of the *concrete decision* to act within the next half second, for example the decision of actually carrying out the chess move (already decided on just before) on the chess board, or to execute (in the next half second) a wrist-twisting after seeing the second-hand of the oscilloscope indicate the previously decided position on the clock in which exactly we intended to start to act, or after having to our satisfaction convinced ourselves to have noted at this moment an inner urge to move. This concrete decision to act in the next moment and the decision what to do, for example flexing the finger, since it involves a free energy geared towards moving, likewise precedes the action and could easily contribute to the build-up of the RP or the action-specific «lateralized readiness potential»⁴³, as likewise feelings of anguish in the face of threats etc. do? And as the latter give rise to changes in brain activity, why should then not the concrete decision to act that not only precedes the action and relates to it, just as a shyness or fear to act do, but determines the person to act, contribute to a *Bereitschaftspotential (RP)*? Saying with Wittgenstein that the decision «causes the action of lifting my arm» seems to merge the act of moving itself with the decision to act which seems false since the carrying out the action occurs in the present, while the decision makes up one's mind to perform a future action⁴⁴.

7. Besides the concrete *decision to act in the next moment*, there is likewise the act of *concentrating very hard* from the time on when the clock's hand shows the preceding seconds or milliseconds, in order not to miss the previously decided upon moment for acting, or to concentrate simply in order to discern an (probably non-existing) urge to move the hand in a certain way, or simply to prepare for choosing an arbitrary moment to act⁴⁵. Why should not, even in the absence of a premeditated movement at a certain

⁴² See JUDY ARNEL TREVENA and JEFF MILLER, «Cortical Movement Preparation before and after a Conscious Decision to Move», *Consciousness and Cognition* 11, 162/190 (2002), p. 188.

⁴³ See on this the quoted study of Trevena and others.

⁴⁴ The philosopher Elisabeth Pacherie and the cognitive neuroscientist Patrick Haggard make very similar distinctions between three phenomena that can be called intentions. They introduce a «three-tiered hierarchical model of intentions» (Pacherie, 2008), distinguishing (1) «distal or prospective intentions» (that might be similar to what we termed superactual intentions, while we must distinguish the distal and the superactually real character of these intentions), (2) «proximal or immediate intentions», and (3) «motor intentions». See ELISABETH PACHERIE and PATRICK HAGGARD, «What are Intentions?», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 70-84, especially p. 70. It is not quite clear whether the third one of these signifies the actual carrying out of the action or corresponds to our «intention to act in the immediate future». At any rate, their distinctions are in many respects parallel and lead them to a critique of Libet similar to ours, pointing out the need to take into account, in every experiment with free will, this whole range of phenomena that we call decisions; they give even more potential weight to the distant decisions in the build-up of the RP than I, writing: «A discussion of free will must at least include not only the inclusion of intentions to the final process of action initiation itself, but also the anterior decision processes that take place at the level of prospective intentions».

Pacherie and Haggard propose to include also a model developed by Shaun Gallagher (2006) according to which one should distinguish the (1) «decision whether to act», (2) «what to (and how)», and (3) «when to act». Their «definition of decision» through the two moments of being accessible to consciousness and bearing a relation to «bearing a relation to future action» (*ibid.*, p. 70/2), seem insufficient given that also such a different act as desire or fear to perform an act have the same two characteristics.

⁴⁵ At least I have never noted such an urge. Susan Pocket points out very cleverly how Libet's instruction not to pre-plan may have precisely resulted in acts of concentration, pre-planning and getting ready. See Susan Pockett's very minute report on Libet's experiments, in her «The Neuroscience of Movement»,

time, this act of *concentration* have brain effects? Encephalograms of chess players while they reflect on their next moves clearly confirm the increase of brain activity in consequence of intense concentration, which we might describe as a more distinctly intellectual preparatory side of «getting ready», an act that combines intellectual and volitional elements and is so important for running races or other sports.

8. Besides such concentration, there are other states of mind and feelings that can precede a voluntary act and could be responsible for the build-up of RP without having anything to do with the voluntariness or involuntariness of the act, for example anxiety or tension that frequently precede voluntary acts, particularly in test situations where a person asks herself: «Will I perform the test well? Just as it was prescribed? What will happen if I fail? Will I have to pay back my fee then, etc.?»⁴⁶.

9. Distinct from all these free acts is the reflective consciousness *that I now want to move my hand, or, a bit later, that I indeed just decided to move my hand*, which is an entirely different cognitive act that bends back on, and becomes aware of, my first order intentional act, the intention to act. And this cognitive act of reflection⁴⁷, at least at a time at which I become fully consciously aware of my decision, is preceded in time by the inner free acts themselves – which may take place and be experienced *from within before* I become *reflectively aware of* and am able to *name them*⁴⁸. Also this distinction and its implications for the time-measurement of the act-intention go unnoticed by Libet.

10. Different from all these acts is the conscious deliberate concrete action itself of *actually flexing my finger or turning my wrist* (a free act which itself unfolds in, and takes some, time but differs from intentions as well as from decisions to act). This act can of course not be reduced to a bodily movement which could occur, for example in sleep, without any conscious act of moving being involved. The conscious and intentional bodily movement envelops simultaneously body and mind and obviously occurs much more at a certain short-lived «point in time» than, for example, a long-standing or distal, let alone a superactual, intention to act. Nevertheless, also this movement unfolds and lasts during a certain span of time and «fills out», both as bodily movement and as conscious act, though in different ways, some period of time, depending on how slowly or fast our movement is (if it is a specific kind of movement such as turning our wrist, the «same movement» can be accomplished during a larger or lesser time-span, depending on the speed at which it occurs). The duration of a movement that depends on when we start and when we stop moving, makes it clearly possible that one identical movement can

available on Internet: <http://mitpress.mit.edu/books/chapters/0262162377chap1.pdf>, p. 14 f. Also many other critics have pointed this out.

⁴⁶ Alexander suggests, in a third of three possible interpretations of Libet's experiments that he distinguishes, that the RP may have nothing to do with the voluntary act and thus would not touch the questions of criminal law and ethics about free responsible acts at all, but be products of such tension and anxiety. See LARRY ALEXANDER's short but interesting paper «Criminal and Moral Responsibility and the Libet Experiments», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 204-206; p. 205/2. He concludes «I see nothing in his [Libet's] experimental results to warrant revising the standard picture of morally and legally responsible acting or revising the standard view of the frequency with which it occurs» (*Ibid.*, p. 206/2).

⁴⁷ Karol Wojtyła has shown that *reflective consciousness* is again quite different from the *reflection* properly speaking. See JOSEF SEIFERT, «Karol Cardinal Karol Wojtyła (Pope John Paul II) as Philosopher and the Cracow/Lublin School of Philosophy» in: *Aletheia* II (1981), pp. 130-199.

⁴⁸ This point is also made by TERRY HORGAN, «The Phenomenology of Agency and the Libet Results», in: WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility*, cit., pp. 159-172, on pp. 161/2 f.: 168-169.

last for many hours, for example in a marathon, or just for the fraction of a second, for example flexing a finger⁴⁹.

11. No doubt not earlier than milliseconds after having begun to move I begin to become *aware* in reflection *that I have begun to move* or *that I have finished* executing a voluntary movement, such that we cannot uncritically equate the time at which the conscious act of voluntary movement begins with the time at which we become aware of this act, on which, by the way, there exist widely different reports of test persons, as many brain scientists and psychologists have shown.

12. Even less may we equate the time when we begin to move consciously and freely with the time at which we express this awareness through some words or signs. The acts of expressing this reflective awareness through some motion of the hand or some word, in which I communicate my free acts to others, certainly are preceded by the movement of the hand itself.

If these different conscious acts, which partly follow, partly accompany, each other in time, are not clearly distinguished, how should a person identify exactly the time when she began to act freely, and how should a scientist design experiments that seek to establish the respective time spans or moments during which these different free acts took place? Libet et al. do not make these distinctions and hence fail to design their experiments with free acts as precisely as possible so as to take into consideration this wealth of different acts any or all of which might contribute to the RP. Therefore, new experiments ought to be designed based on a precise philosophical analysis of different acts and on a corresponding rigorous instruction of the persons who design, administer and who take these test about what they should attend to and report. Moreover, these tests should have as their object clearly free and planned acts instead of reflex-like sudden movements due to «urges».

If there is approximately half a second (550 milliseconds) from the start of the build-up of the RP (*Readiness Potential*) in the brain to the actual motion – an action that is preceded in time by so many free and cognitive acts – and 200-250 milliseconds from the moment in which I become reflectively *aware of the fact that I intend to act* to the actual motion, and certainly at least as much time filled by the voluntary acts that immediately *precede that awareness*), then how can Libet's experimental results be construed to contradict the freedom of the positive initiation of these acts?

Thus Libet's opinion that the results of his experiments refute positive freedom are entirely unfounded, for many reasons, not the least of which is that he precisely ignores the many conscious acts that precede the reflective awareness of a person that she actually intended or started to act. Instead, in the light of a refined phenomenology of human acts associated to voluntary movement we cannot fail to recognize that Libet discovers many important empirically supported pre-philosophical insights into freedom⁵⁰.

⁴⁹ See on all this the fascinating analyses of the essence and kinds of motion by ADOLF REINACH, «Über das Wesen der Bewegung», in: ADOLF REINACH, *Sämtliche Werke. Textkritische Ausgabe in zwei Bänden*, Bd. I: *Die Werke*, Teil I: Kritische Neuausgabe (1905-1914), Teil II: Nachgelassene Texte (1906-1917); hrsg.v. Karl Schuhmann Barry Smith (München und Wien: Philosophia Verlag, 1989), S. 551-588.

⁵⁰ Alone the difference between a pre-reflective and a reflexively given acting (which latter precedes the action by only 200 milliseconds), let alone the possible effect of the intense free concentration and psychological getting ready to act that certainly precede the actual doing and could very well be responsible for the build-up of the readiness potential, could easily suffice to account for the antecedence of the RP by 350 milliseconds.

4. LIBET'S EXPERIMENTS AS EMPIRICAL CONFIRMATIONS OF HUMAN FREEDOM
AND SOME PHILOSOPHICAL DEFICIENCIES AND CONTRADICTIONS IN HIS DISTINCTION
BETWEEN 'POSITIVE' AND 'NEGATIVE' FREEDOM

In addition, there is a big problem regarding the meaning of 'negative' and 'positive' freedom and the describing of the vetoing power of the mind in terms of some type of negative use of freedom. Why? It seems clear first of all that Libet has in mind only one single kind of free vetoing acts that interrupt or impede physical activities rather than looking at the wide spectrum of free acts of vetoing or disavowing, as he should in order to do justice to the problem of whether there are positive free acts and how these are related to «vetoing free will». Proceeding from a very narrow perspective of just considering free «physical movements or actions», he calls negative freedom the act of *not moving*, and positive freedom the carrying out of physical movement. In so doing, however, Libet to some extent remains a pure behaviorist who identifies the observable positive physical *behavior* (of moving a limb) with the free act, and therefore defines the freedom of *not moving* as mere negative and vetoing power of freedom. But if we consider the inner life of the free person, we see that the decision *not to act* is not comparable to the mere absence of moving in the physical world. Rather, we encounter *equally positive* free acts of omission as of commission of actions. For example, the decisions of the seven brothers described in the book of the *Maccabees* not to sacrifice to false gods, taking upon themselves the cruel death they suffered in consequence of this veto, is a far harder and more positive free act than a blind obedience to an evil king to do so. Or why should the Prophet Daniel's refusal to proclaim the king to be God, notwithstanding his being thrown into a lions' den, be a «less positive» free act than to proclaim cowardly and foolishly the Persian king as God? Only a pure behaviorist who understands nothing of free acts can hold that the Maccabees or Daniel did not perform a positive free act, speaking an inner yes that led them to a perfectly free 'No!' to the actions they refused to take even under pressure, not to mention the countless free acts of bearing patiently such torture without giving up that accompanied their martyrdom⁵¹.

Here we also come to see a logical contradiction in allowing for negative freedom and disallowing positive one. For if Daniel and the Maccabees had not been free to sacrifice to the gods, an action that would according to Libet have been forced on them by brain processes, how could they have been free to veto these acts? And if we can at any time modify voluntary movements, as Libet notes, why should this giving our movement another direction not be «positive freedom»?

All of this makes Libet's claim that his experiments allow only the admission of a negative veto-role of freedom both confused and unfounded. Libet himself implicitly recognizes this in a number of places in which he attributes to free will a «triggering function» without which the urge to perform a positive action would never be completed, thus also ascribing to free will a controlling function regarding the actual outcome and performance of a «positive act»⁵². Moreover, Libet says that the conscious will selects «which of these [unconsciously prepared] initiatives may go forward to an action»⁵³.

⁵¹ Likewise, the evil decision of the greedy man *not to give an honest and truly poor beggar some alms* is not a mere lack of acting (a pure absence of giving something to him) but a *free decision not to give*. Hence, as free act, it is as «positively» a free act as giving alms.

⁵² See BENJAMIN LIBET, *Mind Time: The Temporal Factor in Consciousness* (Boston, Mass.; London: Harvard University Press, 2004), p. 139.

⁵³ See Benjamin Libet, *ibid.*, p. 139.

Notwithstanding his recognition of all of this, Libet seems to fail entirely to see the *basic point* of his experiments that have been so much better understood and explained by Popper and Eccles⁵⁴. The central evidence of Libet's experiment precisely shows that⁵⁵ the free *decision to act at a certain time and the actual acting at this time*, or also the preceding and accompanying free acts, make burst forth a tremendous new energy in the brain. And if the person suddenly decides *not to act* at all, or not at the given or previously decreed time, nothing happens and no physiologically and physically wholly unexpected energies will emerge in the neurons, a fact Libet fully recognizes and on which he bases his thesis of the veto-power of freedom.

Thus all empirical evidences only corroborate the opinion that the modular patterns of motion occur in form of a sudden appearance, quite independently of any preceding brain-states and precisely, only, and exactly then when the person on whom the experiment is performed *wants* to become active and does not veto her acts. And while the conception of Libet that the conscious intention to act happens in a definable millisecond, coupled with the alleged proof that the RP precedes that conscious intention, would give some plausibility to the claim that the conscious intention itself be caused by brain processes, both the evidence of the many other acts that precede physical movement and are ignored by Libet, as well as the Veto-power of free will and its act-aborting effects, as well as the logical implication of «free veto power», and other arguments and evidences that entirely undermine Libet's claims, prove that «positive free will» exists, something which we can also know with evidence from our inner experience of free will and from many arguments exposition of which has to be reserved for another work.

5. CONCLUSIONS

A) *Causality Through Freedom Exists and is Confirmed by Libet's and Other Test Results*

In sum, we have reached on the basis of critical philosophical investigations and distinctions the exact same conclusion which Eccles' and a commonsense interpretation

⁵⁴ Therefore, Wegner's condescending remarks about Eccles's enthusiastic reaction to these experiments as an empirical «verification of the power of the will over the brain» are quite unfounded and no way justified by Wegner's dubious claim that in the experiments Eccles cites the conscious subjects were never queried. See DANIEL M. WEGNER, *The Illusion of Conscious Free Will* (Cambridge, Mass./London, England: MIT Press, 2002), pp. 52 ff. See also KARL R. POPPER and JOHN C. ECCLES, *The Self and Its Brain* (Berlin/Heidelberg/London/New York: Springer-Verlag International, 1977; corrected printing 1981), pp. 364, 257-362. The same applies even more to the confused objections which Honderich raises against Eccles' claims of an empirical confirmation of free will. See TED HONDERICH, *Mind and Brain. A Theory of Determinism*, vol. I (Oxford: Clarendon Press, 1988, reprint 2007), pp. 301-304, which basically amounts to nothing but a mere assertion that Honderich asserts without any intelligible reason whatsoever that the fact that neither in the environment nor in preceding brain activity, nor in the strict dependence of the RP on free decisions there is no «conflict whatever between the Correlation Hypothesis and what is said to be true of electrical activity in the cortex». Honderich's objections are based on 3 determinist and materialist hypotheses (the «hypothesis of psychoneural nomic correlation»: *ibid.*, pp. 106 ff.), which is an unclear version and mixture of a brain/mind/identity/theory and a Spinozean parallelism), the «hypothesis on the causation of psychoneural pairs» (*ibid.*, pp. 163 ff.), and the «hypothesis on the causation of actions» (*ibid.*, pp. 244), and a unitary theory of the mind in relation to neural events, which he regards as an improved successor-theory to mind-brain identity theories. See HONDERICH, *ibid.*, pp. 89 ff. On other critics of Libet's, Wegner's, Honderich's and other determinists' conclusions see WALTER SINNOTT-ARMSTRONG and LYNN NADEL (Ed.), *Conscious Will and Responsibility* (New York: Oxford University Press, 2011).

⁵⁵ Within whatever temporal preceding by milliseconds!

of Libet's experiments asserted, namely: these experiments confirm in a fascinating manner that on the level of the brain exactly that happens which we should expect from the experience and philosophical understanding of conscious life: namely that on the occasion of each volitional movement an objectively existing and also experientially noticeable «breaking in» of the order of the mind and volition into the world of the body takes place and that the source of such bodily and physical-physiological changes does not lie in the brain itself but in the will of the person, in the spontaneous activation of the free center of the person. Empirical brain science thus confirms the most natural experience of a free dominion of the mind over the body, a phenomenon Kant recognized, calling it «causality through freedom» or «causality from freedom», but which, for quite invalid reasons and confusions in his notion of causality, Kant believed had to be denied for the world of appearances⁵⁶. Had he known the newest empirical results of brain research, and at the same time freed himself more entirely from the philosophical grounds of his «physical determinism» (for the sake of a «transcendental doctrine of freedom»), Kant might have been delighted over such an empirical confirmation of «causality through freedom», of the power of the subject over the body⁵⁷. Similar empirical evidences for freedom were presented when persons were observed when they spoke, when they solved mathematical or chess problems, or when they were asked to remember certain past events, etc.⁵⁸.

In all of these cases of activities it seems to emerge clearly as an empirical fact of brain-science that in consequence of voluntary acts of diverse kinds an eruption of physiologically completely inexplicable spatio-temporal patterns of motion in the modules of the brain takes place, an eruption of energy that is completely inexplicable through the preceding physiological events or causes and that can only be explained as an irruption of the power and freedom of the mind into the world of the brain.

This is not true for other, unfree conscious experiences which are clearly determined by physiological and neurological processes. For example, in the case of experiencing pain because of having cut one's finger or in the sensation of feeling ice-cold an explanation of brain events developing from outside causes, and of the consequent conscious and unfree feelings of pain or freezing, through physiological causes is possible and, at least partially, even the only reasonable explanation. Here no irruption of new immaterial causes into the order of the brain takes place but the reverse: immanent physiological causes clearly give rise to the respective events in the sense organs, nerves and in the brain, and to the succeeding conscious feelings caused by them. Even the form of these conscious experiences (feeling headache, for example) gives witness of the fact that these experiences originate from a source outside the free center of the person or even outside the body. Physical pain and other experiences frequently are the consequences of preceding nerve and brain events (although such a causal explanation cannot exhaustively do justice to physical suffering or provide a sufficient understanding of the many types and directions of body-mind relations distinct from a mere causal interaction, such as the lasting or

⁵⁶ IMMANUEL KANT, *Kritik der reinen Vernunft*, in: Kants Werke, Akademie-Textausgabe (Berlin: Walter de Gruyter & Co., 1968), Bd. III, B 566 ff.; B 472 ff.; B 560 ff.

⁵⁷ In this case he might also have recognized his various philosophical confusions which prevented him from recognizing the causality through freedom in a single real world, relegating freedom to a world of the transcendental ego and things in themselves, and attributing complete determinism to the world of appearances and experience. For a critique of this view see JOSEF SEIFERT, *Überwindung des Skandals der reinen Vernunft. Die Widerspruchsfreiheit der Wirklichkeit – trotz Kant* (Freiburg/München: Karl Alber, 2001); *Superación del escándalo de la razón pura. La ausencia de contradicción de la realidad, a pesar de Kant*, Biblioteca filosófica «El Canto Alado», traducción Rogelio Rovira (Madrid: Ediciones Cristianidad, 2007).

⁵⁸ See POPPER-ECCLES, *The Self and its Brain*, ch. E 4, E 8.

individual *experiences* of the body and its different parts, intentional perceptions, actions, bodily expression of mental acts and feelings, etc.)⁵⁹.

In the light of a phenomenology of freedom the mentioned empirical facts also are a good demonstration of the experientially and philosophically knowable link that exists between the free and self-conscious center of the person and her body.

The truth of the inner experience of voluntary movement, of really initiating bodily movements, and thereby the truth of «causality through freedom»⁶⁰, can be verified, or at least corroborated, through the empirical brain research of the newest date⁶¹. If nothing in the brain explains the overwhelming excitation and the newly arising patterns of motion that occur suddenly and in complete dependence on the person's decision and will to act now rather than later or earlier, then it seems to be also from a purely scientific standpoint the most reasonable assumption to assume exactly what our conscious experience has always taught us: namely that as free subjects we are indeed the cause of voluntary bodily movements; that the mind here truly has an effect on matter.

B) *The Immense Consequences of Human Free will for Understanding the Mind/Body Problem and Physio-Psychic Causality and Interaction – Socrates' Insights and Libet's Experiments*

With Eccles and Popper we have then to assume that, as they express themselves, there exists a fundamental openness of WORLD 1 for WORLD 2⁶². The brain is open with respect to receiving input and influences from the mind and thereby the matter of the brain is open to communicate with a reality that is distinct from the brain and which the brain does not only influence but from which it also can receive influences⁶³.

Modern natural science thus reconfirms the words Socrates spoke in Plato's *Phaedo* about the reasons why his limbs and nerves remained in jail: namely because of his knowledge and free decision to do justice, and not for physiological causes (98b ff.). These Socratic words sound just like the newest scientific findings.

⁵⁹ See JOSEF SEIFERT, *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989).

⁶⁰ As Kant describes this fact quite fittingly, which, however, he believes to be empirically absolutely indemonstrable and impossible, since in the world of appearance strictly causal determination would rule.

⁶¹ Of course, such a «verification» always presupposes certain philosophical insights and cannot be gained entirely without their help, for example not without various insights which refer to the essence of freedom, of causality, of their mutual relationship and of the subject of freedom.

⁶² We reject the reduction of body-mind relations (implied to some extent by Eccles-Popper) to mere causal interaction. See JOSEF SEIFERT, *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989), and JOSEF SEIFERT, *Leib und Seele. Ein Beitrag zur philosophischen Anthropologie* (Salzburg: A. Pustet, 1973).

⁶³ This is particularly evident from modern technology operated immediately through human thought and will operating on the brain and chips implanted in the brain. See *Deutsches Handelsblatt* Freitag/Samstag/Sonntag 16./17./18. 4. 2004 – Nr. 74, «US-Firma will Chip im Gehirn implantieren». The article reports on research carried out and planned new devices by the US-based company *Cyberkinetics, Inc. plant* (to be ready by 2007-2008), which seeks to implant a tiny chip in human brains which would allow a person to use computers and cursors by mere thought and free intentions, which would engender brain events and impulses which then are transmitted *onto* a chip implanted in the brain (Braingate). From this chip the electric impulses received would be transmitted to the outside world.

This chip would not only allow the paraplegic to switch on and off machines and lights but to steer computers, type letters, use Internet, etc. Also Stephen Hawking, the famous scientist confined to a wheelchair, uses such technologies. See http://en.wikipedia.org/wiki/Stephen_Hawking, and <http://en.wikipedia.org/wiki/Cyberkinetics>; and <http://www.braingate.com/>.

«... as if in the same way he should give voice and air and hearing and countless other things of the sort as causes for our talking with each other, and should fail to mention all the real causes, which are, that the Athenians decided that it was best to condemn me, and therefore I have decided that it was best for me to sit here and that it is right for me to stay and undergo whatever penalty they might order. For, by the dog, I fancy these bones and sinews of mine would have been in Megara or Boeotia long ago, carried thither by an opinion of what was best, if I did not think it was better and nobler to endure any penalty the city may inflict rather than to escape and run away»⁶⁴.

Thus what many regard as the revolutionary character of Eccles' and Popper's concept of the openness of WORLD 1 with respect to WORLD 2 is only revolutionary if you see it in the light of the deterministic philosophical foundation of much of the philosophy of modern scientists (science itself cannot be «determinist» or «libertarian» because it is unable to confront the problem of free will without an intermediate philosophical step). For in the quoted Platonic text and in many other authors after Plato, including Kant, this concept appears to be a guiding principle. Plato refutes, through the mouth of Socrates, the materialists' negation of freedom by pointing out that the true causes of Socrates' actions did not lie in any of the physiological events in his body or nerves but solely in his free will to do what is just and to obey the law, without which decision his brain and body would long have been removed from the prison-cell to Boeotia or Megara. And the existence of such a free power of the free will over the body and thereby also over matter in no way contradicts a realist understanding of the principles of causality and of sufficient reason given that free agents and their acts are the prime example of efficient causality, condition of its explanation, and an important part of the «sufficient reason»⁶⁵.

⁶⁴ PLATO, *Phaedo* 98 c – 99 b. In Kant, however, we find the recognition of this fact only as something lying beyond the experience and beyond any objectivizing thinking, in the alleged sphere of purely intelligible objects and things in themselves in which alone Kant assumes a freedom and causality through freedom to be possible and seeks to save their reality.

Further evidences for the fact that these words of Socrates relate also to the relationship between the mind and the brain and to the latter's link to conscious knowledge and free decision can be obtained from experiments with active memory-retrieval. Our conscious efforts to refresh memories, our activity of rejecting images that present themselves to our memory when these images are not the ones that we are looking for, an activity Augustine has described vividly and in detail in Book X of his *Confessions*, leads to an *actual* «opening» of *potentially* open modules, to an activation of information that is in a certain way stored or programmed in the brain and had already been «filed» there and could have been activated before. This activation of brain-stored information occurs through what Eccles describes as «playing the brain». This expression for using of the brain in a quasi-instrumental manner had been suggested before by Bergson in his theories concerning empirical discoveries regarding brain-damaged persons. See HENRI BERGSON, *Matière et mémoire. Essai sur la relation du corps à l'esprit, Bibliothèque de philosophie contemporaine* (Paris: Alcan, 1896). On the state of scientific research and theory, regarding the problem of memory, see ECCLES, *The Human Psyche*. The Gifford Lectures, University of Edinburgh, 1978-1979 (New York/Heidelberg/Berlin: Springer Verlag International, 1980), pp. 176ff.

⁶⁵ The results of these philosophical intuitions into human freedom as the true cause of human acts and of the mentioned empirical experiments, however, seem to contradict and to violate also the principle of the preservation of energy and the first laws of thermo-dynamics. For the mind appears here to irrupt into matter and material events and to engender new energies or to set them free, energies which had not existed before in the brain or in the material universe. Eccles, Popper and also Wigner, a nobel-laureate of physics, are even less disturbed by these consequences than HANS JONAS in his *Macht oder Ohnmacht der Subjektivität? Das Leib-Seele-Problem im Vorfeld des Prinzips Verantwortung* (Frankfurt a.M., 1981). The consequences only demand that we develop a new and simultaneously classical physics (which recognizes objective empirical and also a priori evident laws of «pure physics» regarding time, motion, space, etc.) and above all that we explore the relationship of physics to psychology and philosophical anthropology. The mentioned natural scientists argue that the empirical facts described above do not contradict the laws of physics which strictly and in their full extent refer only to the limited sphere of the material (non-living)

«Thus based on a careful philosophical and phenomenological investigation into the essence and existence of conscious acts we found that Libet's rejection of what he calls "positive freedom" is completely unfounded. It is based on a seriously deficient philosophy of human acts and on a set of assumptions and interpretations of the empirical results of his tests that suffer from an almost complete lack of a phenomenological analysis and differentiation of the vast and amazing world of human consciousness».

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universe. These empirical findings only refute the idea of a deterministically closed material universe in which any causal influence, force or energy from a source distinct from the system of the material world itself would be excluded. See Hans Jonas, *Macht oder Ohnmacht der Subjektivität?*, cit. See also my critical evaluation of Jonas' in part excellent critique of epiphenomenalism (supervenience theories of the mind) in JOSEF SEIFERT, *Das Leib-Seele Problem und die gegenwärtige philosophische Diskussion. Eine kritisch-systematische Analyse* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989), and my *What is Life? On the Originality, Irreducibility and Value of Life*. Value Inquiry Book Series (VIBS), ed. by Robert Ginsberg, vol. 51/Central European Value Studies (CEVS), ed. by H. G. Callaway (Amsterdam: Rodopi, 1997); and *Überwindung des Skandals der reinen Vernunft. Die Widerspruchsfreiheit der Wirklichkeit – trotz Kant*, (Freiburg/München: Karl Alber, 2001).