

Considering the Modern Discussion about Free Will: The Position of Philosophical Libertarianism

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Abstract

The question of free will is one of the most discussed problems of modern philosophy. It was especially emphasized by Isaac Newton's postulate regarding the deterministic evolution of the universe, since this includes humankind as part of the universe and therefore determines all and every person's decisions. The emergence of quantum mechanics is seen by many as a falsification of determinism and thus giving the concept of free will new power. On the other hand neurosciences which investigate the human brain as the agency of our mind emerge as deniers of free will as they claim all neuronal activity to be determined. This has resulted in a stark controversy between neuroscience and philosophy about the existence of a free will.

First this study defines the concept of free will and outlines the basic philosophical positions. The position of philosophical libertarianism is extensively described, starting with the libertarian rejection of determinism, and analyzed. The libertarian concept of free will is then presented through five different accounts.

Libertarianism is then evaluated based on its denial of physical determinism and the dubiousness of denying scientific findings by a philosophical school of thought is illustrated. Furthermore the different libertarian accounts are evaluated. This study proves libertarianism to be logically inconsistent and, independent of the validity of determinism, unable to deliver any substantiation of free will from a logical philosophical point of view.

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Objective and Methodology

The question of free will is basically a problem of modern philosophy. Everybody assumes to have a free will and our daily lives are indeed permanently filled with decisions to be made. These decisions might be rather trivial like whether to order fish or beef in a restaurant. When moral questions are touched problems can get more complex: “Should I regard my fellow human beings with altruism or egoism?” Most of the time and regarding most questions we tend to think that we indeed have a free choice.

In medieval times Augustine’s predestinarian doctrine cast first doubts on free will¹: If God is indeed omniscient he has to know the future of each and every single person. This however is only possible if future events are already fixed and defined, therefore God must have already determined the future of the universe and of mankind. Some Biblical verses² seem to support the predestinarian doctrine whereas (individual) moral responsibility contradicts predestination: Only if a human being has a free will and can decide autonomously can God hold them responsible for their doing. The concept of gratification and penalization makes sense only based on the existence of free will.

In the 9th century Monk and scholar Johannes Scotus Eriugena noted the importance of free will. In his work he argues: *‘If you cannot deny [God’s] judgment on this world you are forced to express [the existence of] free will. For these two are incommensurate: “there will be a judgment on this world” and “there is no free will”. Both cannot apply at the same time for which justice will allow a judgment on this world if there is no free will? However these can apply together: “there is a free will” and “there will be a judgment [on this world]”. If there will be a judgment on this world therefore there must be free will’*³

¹ Augustinus (1997)

² Ephesians 1, 3-6, Romans 8, 28 - 30

³ Eriugena (1978)

Most Christian congregations maintain the notion of a free will and until the Middle Ages this was rather a theological/ philosophical problem.

Copernicus' heliocentric theory challenged this classification. With Copernicus' paradigm shift a new mindset, the scientific mindset, emerged. Thus appeared the question of the nature of the human mind and the closely associated problem of free will, as the mind is the agency of any volition. The philosopher René Descartes was highly engaged in the problem of the nature of the human mind. He reasoned that body and mind were two different substances as *res extensa* (body) and *res cogitans* (mind).⁴ As Descartes lay the foundation for the concept which is today known as Dualism he never had any doubts about the existence of free will. The human mind, not being bound by the human body, can make voluntary decisions which in return cause bodily reactions.

Already one generation later the dualistic solution came under close scrutiny by the British empiricists: Whereas Descartes sees the human mind as separate from the physical body and therefore as a metaphysical object, the empiricists dismiss metaphysics and dualism in whole and attribute all mental phenomena to physical causes, especially human experiences. The human mind, including the free will, is now seen as a cerebral function and a mental phenomenon. John Locke, one of empiricism's most prominent ambassadors, stated the moving force of volition to be pursue of pleasure and avoidance of unpleasure.⁵ Thereby it appears to be that human volition is not free and strongly governed by external stimuli just as the behavior of animals is. To preserve the notion of free will Locke introduces the concept of suspension⁶: Humans have the ability to reflect and, if necessary, adapt and suppress their desires. According to Locke the human power of suspension grants the existence of a free will.

During the ensuing period doubts on free will amplified again mainly by Isaac Newton's findings of the deterministic nature of the physical world as there seems to be no room for a free will in a deterministic world. And

⁴ Descartes (1994)

⁵ Locke (2006)

⁶ Locke (2006, S. 319 ff.)

as moral acts require a free will, following Eriugena's argument, there can be no ethics, too. To restore the possibility of moral acts Immanuel Kant therefore ventured the task to make physical determinism and free will compatible.⁷ For that purpose Kant resorted to the reasoning in his 'Critique of Pure Reason'⁸: To complete the world of the phenomenal world of appearances, the physical world so to speak, he adds the intelligible world, in which free will exists, or the noumenal world of things-in-themselves. Physical laws apply only to appearances, whereas the will is a thing-in-itself about which we have no direct knowledge. Kant admits that whether the will is actually free we can never know, as the mode of operation is incomprehensible.

The problem of free will gained momentum in the 20th century as two seemingly contradictory findings were established in science. The beginning of the 20th century saw physicists develop quantum mechanics which describe atomic and subatomic processes. Quantum mechanics' formalism has proven to be extremely exact, so that quantum mechanics are now regarded as a significant possibility for the description of many physical phenomena. The original interpretation by their founding fathers, mainly Niels Bohr and Werner Heisenberg, the so called Copenhagen interpretation⁹, states the world of quantum mechanics as indeterministic. Thus, even if meanwhile there exist also deterministic interpretations of quantum mechanics, the standard Newtonian determinism is challenged.

In contrast neuroscience, the science that is engaged in structure and mode of operation of the (human) brain, takes a deterministic position. Neuroscience states that all mental processes, including voluntary decisions, are based on neuronal activities and that these activities are entirely determinate, thus leaving no room for free will. Whereas neuroscientists deny the existence of free will most contemporary philosophers hold on to it, accordingly igniting an intense argument over the question of free will.

⁷ Kant (1974 / 1)

⁸ Kant (1974 / 2)

⁹ Heisenberg (2008, S. 42)

In this study we will give an exact definition of the term free will. Thereafter we will outline common philosophical positions regarding the existence of free will. One of these positions is the so called philosophical libertarianism. (Author's note: The term libertarianism can also be used for a certain political movement. It is essential to note that there is no affiliation or connection between political and philosophical libertarianism. Wherever the term is used in this paper it always refers to the philosophical libertarianism.) It will be shown which arguments are used by philosophical libertarians to challenge determinism. There are different accounts of libertarianism, the most prominent of which will be explained here. Subsequently the general denial of determinism and the diverse accounts of libertarianism will be evaluated.

Definition of Free Will

It is obviously indicated now to explore the meaning of the term of 'free will'. Since we are dealing with a composite term here it is necessary to analyze both parts of the term. Starting with the term 'will' we may follow John Locke who describes the will as a power of mind which 'urges us to start or desist, continue or conclude diverse activities of the mind and movements of our body and indeed merely by a thought or any preference on the part of the mind which orders or effectively commands the compliance or noncompliance of this or that operation'¹⁰. In this definition Locke accurately described various aspects of the human volition. Initially the will is a mental phenomenon as it happens inside the mind. Furthermore the will provokes something: this can either be another mental phenomenon, or thought, or it may be a physical phenomenon, thus involving the movement of at least one body part. Moreover Locke states that a deliberate omission of a mental or corporeal operation is also controlled by will. By virtue of the will humans are thus capable of thinking or stopping further deliberation and they are also able to initiate or omit bodily actions. From this description it follows that volition is a form of decision. Linguistically and analytically decision requires alternative possibilities, only if alternatives are given a decision is possible and only if a decision is to be made an act of will is required and possible. Therefore volition can be defined as a mental act that decides for or against the execution of a mental or physical action and that initiates or omits this action. Such an act of volition requires the existence of possible alternatives as a *sine qua non*. (Note: It should be added that the alternatives must be (supposedly) realistic. If somebody states their will to fly with superluminal velocity, which is physically impossible, this can only be perceived as a wish or desire, not as an act of volition. A different situation is given when someone wants to open a door and then finds out that this door is locked. In this case she has anticipated the alternatives of 'opening the door' versus 'keeping the

¹⁰ Locke (2006, S. 280)

door closed' to be existent and has voluntarily decided for one alternative. That these alternatives in fact did not exist is irrelevant as the alternatives existed mentally. We will return to this issue further down.)

So when can our will be defined as autonomous or free? Locke states: 'so far as a man has power to think or not to think, to move or not to move, according to the preference or direction of his own mind, so far is a man free. Wherever any performance or forbearance are not equally in a man's power; wherever doing or not doing will not equally follow upon the preference of his mind directing it, there he is not free, though perhaps the action may be voluntary.'¹¹ Thus it is in man's power to choose an alternative: he can decide otherwise. Therefore the notion of free will is not only tied to the principle of alternative possibilities but it is also tied to the possibility of being able to do things 'otherwise'. The very notion of free will is therefore tied to the possibility of 'to do otherwise' on a linguistic analytical level.

Subsequently many think that freedom of action is a condition of the free will. Freedom of action is generally seen as a situation in which one is not prevented from an intended action. The threat of an armed robber to a jeweler is a well known example for the illustration of the dependence of freedom of volition on freedom of action: under threat of armed force the robber demands handover of the jewelry. If the jeweler actually hands over the jewels he does so willingly but certainly not voluntarily. Since the jeweler has the desire to survive he reasonably has no other choice than handing over the heist. This means that the jeweler has no freedom of action and thusly no freedom of volition.

However freedom of action is not always the precondition for freedom of volition. In the above example both freedoms are intertwined but whereas freedom of action can by definition only relate to actions, Locke explicitly includes acts of thoughts in his definition of freedom of volition. The freedom of thoughts therefore requires the possibility of alternatives and also the possibility to consider these alternatives but it

¹¹ Locke (2006, S. 283)

does not require freedom of action in the sense of a direct possibility to act upon these thoughts.

It has been known to man for more than 3000 years that freedom of volition requires a mental act but not necessarily a physical action. The Ten Commandments God gave to Moses make a clear distinction between thoughts and deeds. (Author's note: The following considerations are valid, irrelevant to the fact whether or not somebody believes in the biblical tradition.) Not only does the Ten Commandments prohibit the wicked deed itself as in the 6th Commandment 'thou shalt not commit adultery' and the 7th Commandment 'thou shalt not steal'. The nefarious thought is also forbidden as the 9th Commandment 'thou shall not covet your neighbour's wife' and the 10 Commandment 'thou shalt not covet thy neighbors goods' illustrate. Nonetheless the free will is commonly tied to accomplished actions especially regarding moral responsibility. This has two reasons: Firstly, unlike God, no human is able to read another person's mind therefore practical reasons forbid the prosecution of evil thoughts. (Author's note: Though prosecution seems likely if the technical means existed! If one were able to read minds and thereby establish that a sexual offender was planning to commit a crime one would intervene in order to prevent the offender from acting out his acts of thought.) The second reason lies mainly in the power of suspension as it is defined by Locke. Due to this power there is a chance to reconsider one's deliberate decisions before implementation and to reach another decision. (Author's note: Even God would be unlikely to judge one's desire as a sin if it was suppressed by this person's power of suspension.)

It is noteworthy to reference one particularity in the debate regarding the free will. Harry G. Frankfurt investigated in the so called Frankfurt cases whether there have to be possible alternatives regarding the moral responsibility of free will.¹² His example is one person C who had brain surgery in which a neurosurgeon D implanted a sensor into C's brain. This sensor alters C's decision making process in the following way: In

¹² Frankfurt (2001, S. 53 – 64)

case C decides to kill a third person just as D intended the sensor lays dormant. Should C decide differently D will intervene through the sensor and change C's attitude towards murdering the third person because he, D, wants that murder to happen. Frankfurt drafts this scenario to illustrate that in the first case C would be held responsible for the murder even though there were no alternatives for C's actions. In the debate over the free will, however, Frankfurt's examples are irrelevant because deliberate decisions take place in the mind and here C had (mental) alternatives which he lacked in the physical reality. Other authors, of whom the libertarian Carl Ginet¹³ is one that we will discuss later on, share examples in which neurosurgeons implant sensors into the acting persons' brains in order to manipulate their decisions. But these illustrations are incorrect or inapplicable as they fail to analyze the notion of free will correctly. Free will produces a deliberate decision that is a conclusion of the decision making process and that by definition cannot be manipulated. If in such a case one person's voluntary decision to perform an action is subsequently manipulated or altered in any way it has no longer anything to do with this person's free will. As the manipulation is based upon the subject's earlier decision which apparently did not match the manipulator's intentions it is obvious that the manipulation took place after the decision making process and therefore could not have affected its outcome. The principle of being able 'to things otherwise', must therefore be understood as being able 'to decide otherwise'.

In summary we can note that the will is a mental phenomenon that can initiate or omit bodily actions or mental actions. This requires from a linguistic analytical point of view the existence of alternative possibilities and freedom of will means that an alternative can actually be elected. Therefore the principle of being able to do things 'somehow or other' is also linguistic analytically tied to the notion of freedom in. A human being has a free will if she or he may choose (mentally) between different alternatives.

¹³ Ginet (1990)

General Philosophical Positions

The notion of free will is being jeopardized by the physical determinism as mentioned before. If the world is indeed fully determined as stated by Newton and this determination includes all human beings and their acts of volition then there are no alternative possibilities and of course no possibility of ‘to do otherwise’.

Therefore there are two essential questions to be dealt with in the debate over the existence of free will. Firstly, is determinism true or false? Here we have to discuss the scope and definition of determinism and we will come back to this question later on. But essentially we note that we are dealing with the physical determinism as stated by Newton which says that our universe’s evolution from the big bang to its possible end proceeds in a wholly deterministic manner.

The second question is: Do we have a free will? Even though it may seem that the negation of the second matter follows directly from the affirmation of the first it does not necessarily have to be that way. Vice versa a denial of determinism does not have to state the existence of free will. Logic dictates therefore four different positions or four possible combinations regarding our two questions. These positions can be defined as hard determinism, compatibilism, libertarianism and hard incompatibilism.

The first position supports determinism and denies the notion of free will. This position has been adopted by some neuro scientists, most notably Wolf Singer¹⁴ and Gerhard Roth¹⁵. The philosopher Derk Pereboom¹⁶ supports this school of thought. Philosophically speaking the position of hard determinism has strong ties to reductive materialism (or reductionism). Reductionism challenges any special status of mental states (e.g. idealism) and attributes any mental entities to physical

¹⁴ Singer (2002)

¹⁵ Roth (2003)

¹⁶ Pereboom (2002, S. 477 ff.)

phenomena. If all mental phenomena can be reduced to physical phenomena and if these physical phenomena are determined, then all mental phenomena are indeed determined, denial of free will is the logical consequence.

Hard determinism has few followers among the philosophic community and understandably so as this position, including reductionism, perceives the mind as a physical object thereby jeopardizing the very existence of philosophy of mind. This position not only threatens the notion of free will but also a big part of philosophy through its dramatic reduction of the philosophy of the mind. Hard determinism sees the notion of free will incompatible with determinism and is accordingly classified as incompatibilism.

The second position accepts the accuracy of physical determinism but still supports the concept of free will. This school of thought sees determinism and free will as compatible and is therefore called compatibilism. Compatibilism can count British empiricists Hobbes, Locke and Hume as members of its long tradition. Immanuel Kant should also be regarded as a compatibilist. The founder of 20th century compatibilism is considered to be George E. Moore who evaluated the question of free will within his ethical theory and created a conditional analysis of 'can'.¹⁷ Moore uses an example to reduce the meaning of 'can' to 'possible': 'I *could* have walked a mile in twenty minutes this morning, but I certainly could *not* have run two miles in five minutes'¹⁸. The first one was within his powers, whereas the other was not, it is impossible for a human being to do and therefore one cannot decide to do so. Moore excludes the alternatives of 'can' that are logically or scientifically impossible so that 'can do otherwise' becomes 'can decide otherwise'. Following Moore's argument a decision is possible if it does not impede with scientific or logical reasons, therefore one can do otherwise if one only decides otherwise. As Moore develops this analysis within his ethical theory he demands viable reasons for any decision and

¹⁷ Moore (1977, S. 84 – 95)

¹⁸ Moore (1977, S. 84 – 95)

thereby he provides the cornerstone for all compatibilists who regard our volitions as free as long as they are based on viable reasons.

Daniel C. Dennett, one of the best known contemporary compatibilists, has extensively examined and developed this line of thought in his groundbreaking book 'Elbow Room'¹⁹ and its follow-up 'Freedom Evolves'²⁰.

Virtually all modern compatibilists make their case for free will based on reasons (e.g. Habermas²¹, Bieri²², Sturma²³). Note that the discussion takes place on a conceptional level so that the notion of free will as defined in this special way seems acceptable for neuroscientists as well, as the joint book by philosopher Michael Pauen and neuroscientist Roth suggests.²⁴ Compatibilists' stand of view often has strong objections to a reduction of mental processes to mere physics (e.g. Searle²⁵, Sturma²⁶, Habermas²⁷, Bieri²⁸, Beckermann²⁹).

By classifying first and second order volitions Harry G. Frankfurt established a special way of thinking within compatibilism.³⁰ His idea is illustrated by the example of two drug addicts A and B who both have a first order volition to take drugs. But whereas A would like to kick the habit B is a willing addict, who would not have things any other way. Frankfurt establishes that the addiction is a voluntary action only for B because it is supported by his immediate desire (first order volition) and his embracing of the situation (second order volition). It should be noted that compatibilists in general see any action based on reasons as a justifiable cause for free will which therefore is seen as compatible with determinism.

¹⁹ Dennett (2002)

²⁰ Dennett (2004)

²¹ Habermas (2009, S. 155 ff.)

²² Bieri (2001)

²³ Sturma (2005, S. 187 ff.)

²⁴ Pauen / Roth (2008)

²⁵ Searle (2004)

²⁶ Sturma (2005)

²⁷ Habermas (2009, S. 155 ff)

²⁸ Bieri (2007, S. 1 ff, S. 31 ff.)

²⁹ Beckermann (2009)

³⁰ Frankfurt (2001, S. 65 – 83)

Contrary to compatibilist view libertarians consider the notion of free will to be incompatible to determinism, just as hard determinists do. Libertarians refer to Peter van Inwagen's so-called Consequence Argument: *„If determinism is true, then our acts are consequences of the laws of nature and events in the remote past. But it is not up to us what went on before we were born, and neither is it up to us what the laws of nature are. Therefore, the consequences of these things (including our present acts) are not up to us.*”³¹ Since libertarianism is founded on the notion of free will libertarians consequently deny determinism. Libertarianism is divided into several schools of thought, which we will discuss in detail further on. As one might expect van Inwagen sees himself as a libertarian too although his famous MIND-Argument is generally understood to be an argument against libertarianism. The denomination derives from the MIND journal, in which the argument was first published. Van Inwagen notes that indeterminism and control contradict each other. Consequently the MIND argument is an argument against libertarianism. Nevertheless van Inwagen commits himself to libertarianism because he, like Kant, regards the freedom of will as an essential prerequisite for moral liability. His conclusion on free will also resembles Kant's: *„The problem of free will, I believe, confronts us philosophers with a great mystery.*”³²

The fourth position regarding the two major questions mentioned before is to deny both determinism *and* the existence of free will. In his so-called Basic Argument Galen Strawson demonstrates the impossibility of free will, at least in the sense of what he calls ultimate freedom. This freedom can only be achieved if one were ‚causa sui’, ergo being the ultimate cause of oneself:

„(1) One cannot be causa sui – one cannot be the ultimate, originating cause of oneself. (2) But one would have to be causa sui, at least in certain crucial mental respects, in order to be ultimately morally responsible for one's decisions and actions. (3) So one cannot be ultimately morally responsible for one's decisions or actions: one cannot

³¹ Van Inwagen (2002, S. 16)

³² Van Inwagen (2008), Van Inwagen (2002, S. 158 ff.)

*be ultimately morally deserving of praise or blame for one's decisions or actions or one's character or indeed for anything else.'*³³

Strawson states that even assuming determinism is not true and the entire future including all human decisions and actions is not defined, these decisions and actions are still assigned by one's character, which cannot be determined, at least ultimately, by anybody. Strawson calls this phenomenon 'The Bounds of Freedom'³⁴. This position is generally referred to as hard incompatibilism and one of the more prominent supporters besides Galen Strawson³⁵ is Ted Honderich³⁶.

In the following libertarianism will be analyzed in detail by first addressing the denial of determinism and then explaining the different accounts within libertarianism.

³³ Strawson (2010, S. 291)

³⁴ Strawson (2002, S. 441 ff.)

³⁵ Strawson (2010)

³⁶ Honderich (2002, S. 461 ff.)

Negative Libertarianism: The Denial of Determinism

In the introduction to his book *'The Oxford Handbook of Free Will'*³⁷, which compiles some relevant contributions to the debate, Robert Kane notes with surprise that libertarians who deny determinism are really a philosophical minority. He sees determinism losing ground with physicists and was expecting a similar situation among philosophers. He states the evolution of quantum mechanics as the reason for this defeat. Following the classical Copenhagen interpretation quantum events are indeed undetermined and one can only assume a probability for the happening of certain results. Yet Kane observes deterministic tendencies within other sciences like biology and neuroscience or psychology and social science. According to Kane this rather surprising trend seems to stem from the debate over the indeterministic interpretation of quantum theory, which is far from resolved. Yet physicists seem to generally confirm indeterminism whereas other sciences rather tend to determinism. Therefore it makes sense to define what determinism means exactly. Afterwards we will investigate the libertarians' reasoning against determinism by following Geert Keil's argumentation.³⁸

So what is determinism? Physical determinism states that every event in the history of the universe is caused by a preceding event and therefore all future events are already determined via causal chains, thus creating a situation in which the future course of the universe is already determined wholly from its starting point, the big bang.

The French mathematician Pierre Simon de Laplace established one possible definition for the physical determinism³⁹. According to Laplace a deterministic worldview would dictate to regard any given event as effect of a preceding event and itself as cause for a following event. To illustrate this Laplace introduces a fictional being, known as Laplace's demon, which is able to calculate from any given state of the world all

³⁷ Kane (2002, S.7 ff.)

³⁸ Keil (2007, S. 15 - 49)

³⁹ Laplace (1814)

future states. Keil notes that Laplace's definition makes the comprehension of determinism difficult as it combines ontology, describing the nature of being, with epistemology describing the nature of knowledge. Keil indicates so called chaotic systems as an example, whose behavior, while ontologically strictly deterministic, cannot be predicted because minor variations between the starting conditions of two systems result in completely different systematic development. Furthermore Keil comments on the phenomenon known as observer's paradox: The question is whether Laplace's demon as observer is part of the world or outside of it. In the first case he cannot observe without disturbing it and thus the world is influenced by the presence of the observer. If the demon is not part of the world how he could have knowledge of it? Subsequently Keil refers to Karl R. Popper⁴⁰ who also denied physical determinism, albeit calling it historical determinism. Popper too defines physical determinism by using Laplace's predictability. From the impossibility of this predictability, as proven by Popper, he also concludes the invalidity of physical determinism.

Keil's fundamental question however is why the world would be deterministic at all. Setting aside metaphysical causes like god or fate, Keil sees only the laws of nature to be worth considering. First Keil investigates what natural laws are and what they mean. Keil generally distinguishes succession laws from coexistence laws. Succession laws dictate a certain order of events and they can be represented as 'If A, then B'. Since A enforces B, B is determined by A. Coexistence laws are an entirely different matter because they are of descriptive nature only. Coexistence laws describe connections between various observations that are merely regular, in accordance to the laws (of nature) but are not inevitable. Keil considers natural laws to actually be coexistence laws, which do not enforce a deterministic course of events. To quote him: 'Our fundamental laws of nature are rightly a matter of pride for physicists but they are not at all laws of successions of events, they are coexistence laws about universals, conversation laws and statements about mechanical equilibriums. They are not to be interpreted

⁴⁰ Popper (2001, S. 32 – 44)

causatively, they do not set the course of the world inevitably, thus they do not support Laplacean determinism and therefore they do not jeopardize liberty.⁴¹ As an example Keil mentions the mathematics of pendulums, which indicate the connection between the length of a pendulum to its frequency of swinging. But according to Keil this does not classify as a causality as needed in determinism since the pendulum does not swing by an alteration of its length, which is indeed part of this law, but by activation of the pendulum, which is not part of this law. Keil hereby believes he could do without the aforementioned indeterminism of quantum theory to disproof determinism. His line of argument goes as follows: 1. Determinism predicts an inevitable course of our future. 2. This assumption has to be based on natural laws if one wants to avoid metaphysical sources as god or fate. 3. The conclusion that determinism results from natural laws can only be valid if the laws of nature are succession laws, i.e. that they deterministically enforce the course of the world. 4. The laws of nature are not succession laws. Bottom line: the assumption of determinism is hereby falsified. In Keil's view determinism has reached a level of metaphysical claim that is incapable of proof. He then confronts the question of how determinism and the principle of causality are connected. Strawson equates determinism and the principle of causality: *„Determinism will be taken to be the thesis that every event has a cause.“*⁴², whereas Keil denies this exact coherence and postulates the existence of indeterministic causal relations. At this point Keil falls back to the position of those physicists who interpret quantum theory indeterministically and aligns himself with Kane's aforementioned view that determinism was discredited in the scientific community of physicists. He hereby hopes to uncouple determinism and the principle of causality, the latter of which he does not deny, he just does not see it as inevitably deterministic. Since he considers determinism to be falsified he allows for a causal coherence of the material world. This implies that indeed no physical event, for example a mental act of volition, could have a cause that is not-physical, or metaphysical. As Keil deems universal determinism or Laplacean determinism to be disproved he

⁴¹ Keil (2007, S. 32)

⁴² Strawson (2010, S. 4)

nonetheless acknowledges deterministic tendencies of other sciences and therefore wonders whether some kind of partial determinism could be true. In the debate about free will the neurosciences represent a particularly interesting issue. The question arises whether it is possible to have indeterminism as far as constituent elements of the material world are concerned (i.e. in the realms of quantum theory) while at the same time biological systems like the brain act deterministically. To quote Keil: ‚Could a partial determinism be true even if universal determinism is not? It is evident that this could be possible only under one condition: There had to be self-contained systems within the universe, by which I mean systems that do not interact with their environment and that therefore cannot be disturbed by any environmental influences.’⁴³ Relating to partial determinisms Keil reverts to the connection of succession laws and determinism as established by him. Keil regards the development of deterministic laws for the specification of brain processes as simply impossible, which allows him to consider the theory of neurophysiological determinism as falsified.

As we presented Keil’s line of argumentation against determinism we should note that his position regarding the refusal of determinism seems to be rather radical. We will see later that Kane in fact assumes that many mental acts, including acts of volition, are completely determined. He manages to hold up his understanding of free will even with only a very small number of mental acts being undetermined, but they have to be undetermined indeed. With yet another libertarian, Timothy O’Connor, it becomes apparent that a complete denial of physical determinism is not absolutely necessary if one gives up the notion of strict physical closure of the world. In this relation O’Connor invokes two theses which he calls ‚The Causal Unity of the Nature Thesis’ und ‚The Micro–Macro Constitution Thesis’⁴⁴. The first one implies that all mental activities (which he sees on the macro level) are caused by physical processes on the micro level, i.e. neuronal processes. The latter one states that mental activities are generated by micro level processes. While the first thesis

⁴³ Keil (2009, S. 54)

⁴⁴ O’Connor (2002 / 2, S. 108 ff.)

denies substance dualism and reveals that anything in this world, including mental phenomena, is in a way physically or materialistically induced, the latter thesis challenges the notion that all mental phenomena can be reduced to mere physical or neuronal processes, which supports property dualism. As mentioned before this position is shared by many philosophers today. But how does that work?

O'Connor develops a special ontology of the agent, which he describes as holistic.⁴⁵ In his view the agent is not a whole consisting of different elements but a particular ontological entity. In O'Connor's concept this is essential to substantiate agent causality and avoid the reduction to physical causality. This evokes the question whether this kind of ontology does need substance dualism after all.

In O'Connor's opinion property dualism coupled with substance monism is sufficient though. However he admits that additionally one needs a metaphysical comprehension of emergence. Emergence means that a system that consists of multiple parts has properties that cannot be explained by the properties of the constituents. In the case of mental phenomena respectively of the mind per se this means that the mind and its mental phenomena cannot be reduced to their constituent components, i.e. the brain and its neuronal networking. O'Connor hereby denies the truth of the Constitution thesis.

Emergence creates the holistic agent from physical substance, thereby ensuring that mental phenomena do not have to be determined even if the neuronal processes are. (Author's note: This argument basically follows Kant's line of argumentation in his 'Groundwork of the Metaphysics of Morals'⁴⁶. Kant considers determinism to be true in the physical world, which is also the world of experience. At the same time Kant acknowledges the existence of a spiritual world or intelligible world, which allows freedom of will. Just the same Kant's formulation works only if the Constitution thesis is wrong.) Furthermore O'Connor argues that the possibility of emergence is already present in the elements of the

⁴⁵ O'Connor (2002 / 1, S. 343)

⁴⁶ Kant (1974 / 1)

micro level, but becomes operative only after a certain measure of complexity has been reached. Thereby the agent develops agent causality that may be indeterministic through the neural structures of his whole living organism.

In summary we can conclude that libertarians like Kane and Keil obviously feel vindicated in their denial of determinism by physics. It does not seem sensible to presume that the world is determined if even physicists do not do so. Keil in particular deems determinism as defied because from his point of view its only sources of legitimacy, the laws of nature, do not necessarily involve determinism. O'Connor on the other hand develops a metaphysical account that does not deny *physical* determinism as it requires only *mental* indeterminism. Obviously libertarians challenge universal determinism in different ways but how do they account for free will?

Positive Libertarianism: Various Libertarian Accounts of Free Will

5.1 Overview

Libertarian philosophers agree in their denial of determinism and they assume at least those mental processes that correlate with decision making to be fully or partially undetermined. Unfortunately denial does not suffice as grounds for a philosophical position as the (legitimate) question arises how libertarians conceive of free will.

Robert Kane considers four different libertarian positions,⁴⁷ which we will present in detail, starting with Carl Ginet. Additionally we will illustrate Geert Keil's account.

Ginet's account can be identified as a 'basic indeterministic' position and has also been labeled 'non causal' due to his denial of the principle of causality. Because determinism is premised on causality, this immediately makes events to which causality does not apply undetermined. Some other libertarians obviously consider this position refutable therefore introducing the decision maker as causal agent. Timothy O'Connor and Randolph Clarke are two prominent representatives of the so called 'agent causal' (AC) libertarianism but their ideas differ in some aspects: O'Connor presumes that the agent makes a non causal decision (NC) whereas Clarke implies that certain events within the agent cause the decision, therefore his view has been labeled as 'event – causal' (EC).

Kane on the other hand does not need agent causality because he focuses on the so called 'intelligibility question' exploring how undetermined decisions can be explained in light of scientific, especially neurological, findings. For this reason he calls his own concept 'teleological intelligibility' (TI) even though he allows for events that have a decision forming effect, thus including an EC factor. Kane first classifies these

⁴⁷ Kane (2002, S. 3 ff.)

four positions either as AC (agent causal) or TI (teleological intelligibility) theories and then as NC (non causal) or EC (event causal). He sees O' Connor and Clarke as AC theorists, whereas he thinks of Ginet and himself as TI theorists.

As mentioned Geert Keil has contributed another account, which he considers close to Kane's⁴⁸, because he identifies with as event causality and rejects agent causality. Since he does not elaborate how undetermined decisions can be explained in light of neurological actions his position cannot be regarded as another TI theory but simply as EC libertarian. We will now explore the different schools of thought in detail starting with Ginet.

5.2 Ginet

As mentioned before Carl Ginet's⁴⁹ 'basic indeterministic' position tackles the notion of causality as developed by Donald Davidson in his 1963 essay 'Actions, Reasons, and Causes'⁵⁰, which illustrates that an agent's reasons for acting can be the causes of his action. If Ginet can demonstrate that actions are not amenable to the principle of causality he accordingly solved the problem of determinism. Since Ginet sees causality as grounds for determinism, events can only be determined if they are part of a causal chain. In a chain of causation any given event is caused by a cause and if there is no cause for it a certain event cannot be determined.

Of course even Ginet expects that actions have reasons but is a reason for action also a cause for action? Following Davidson a reason may count as a cause if an agent performs an action A because of a desire toward a certain goal G and the belief that performing action A is a means to attaining G. But since actions often have multiple reasons he highlights what he calls a 'primary reason', which involves a pro-attitude (or desire) towards G.

⁴⁸ Keil (2009, S. 84)

⁴⁹ Ginet (1990), Ginet (2002, S. 386 ff.)

⁵⁰ Davidson (1985, S. 19 ff.)

Ginet uses the subsequent example to refute Davidson's notion that (the agent's) reasons are causes for (the agent's) actions. He starts with the following term (1): 'S performs P to attain B'. This term constitutes a rational explanation and confirms Davidson's definition: The goal G was 'to attain B' and the action A was 'to perform P'. The agent S performed P because he believed to attain B by this, so this was the cause for action.

Ginet now rephrases the term to highlight (the agent's) intent I and forms term (C-1): 'While performing P S intended, thus in the state of intent I, to attain B by performing P'. Ginet correctly elaborates that (C-1) is true if (1) is true, thus the truth of both terms provides for a true rational explanation. Nevertheless in Ginet's view this does not yield causality because the truth of term (C-1) does not necessarily lead to action. Therefore Ginet gathers that a rational explanation cannot be the causal explanation of an action. As we will see further on Ginet plans to establish the existence of intent I as reason for action without deducing causality. However he responds to the objection that a causalist may demand the completion of (C-1), so that S's intent I indeed triggered P. In that case (C-1) receives the following addition: 'and this intent I caused S to perform P' to form term (C – 1, rev).

As an example of such a causalist Ginet mentions Alfred Mele, who, in his book *'Springs of Action'*⁵¹ extensively debates Ginet's non causal argumentation. Mele defies Ginet's opinion that the existence of intent alone leads to actions. With a thought experiment featuring another manipulating neuroscientist Mele intends to demonstrate that not all intents necessarily lead to actions. In his experiment Mele establishes a neural connection between intent and action but he is contradicted by Ginet who argues that we have too little information about these kind of neural connections and therefore concludes that neural processes that are in an way connected to the performance of deliberate actions have no active part in these actions and thus cannot be causal for them. The same applies to reasons, which, according to Ginet, qualifies as a denial of rational causes.

⁵¹ Mele (1992, S 250 - 255)

Ginet does not limit himself to the denial of causality between reasons and actions but develops his own non causal explanation for causation. He substantiates his claim with the introduction of an internal relation between intent and action that are intrinsically connected in his view. Ginet's allegation that intents do not necessarily lead to action justifies his interpretation of non causality because in this case there cannot be a causal link between intents and actions. Following Ginet's argument intent develops some kind of link to action only if this action has actually been executed. With this Ginet allows for a certain degree of causality, but in reverse order as intent becomes effective by the actual performance of an action, i.e. the execution of an action causes the intrinsic connection between intent and action.

The principle of cause and effect requires a certain chronology: first the cause then the effect. The simultaneity of intent and action as established by Ginet eliminates any deterministic causality. Although the two events of intent and action are not completely autonomous regarding their causal relation this does not mean that intent necessarily leads to action. Ginet mentions that people sometimes perform deliberate actions without any intent. To strengthen the intrinsic connection between intent and action he brings up an example: Somebody may believe her arm is paralyzed and still try to move it.⁵² In Ginet's thought experiment it is possible to move the arm that was thought to be paralyzed, this shows that the movement of the arm was deliberate but, because of the supposed paralysis, without intent. The conclusion is that deliberate actions can take place without intent and therefore they should be regarded as attendant circumstances of action and not its cause.

In his own opinion Ginet has developed due cause for a noncausal explanation of actions. A common causal explanation for a person S performing an action V to attain goal U would have the following form: *,S V – ed in order to carry out her intention to U'.* Now Ginet reformulates the sentence: *,Prior to V – ing, S had the intention to U, and concurrently with V – ing, S remembered her prior intention and its*

⁵² Ginet (1990, S. 9)

content and intended that by this V – ing she would carry it out'.⁵³ By reformulating the sentence Ginet wishes to highlight the synchronisation of intent and action in order to avoid the classical causal view of intent and action.

Ginet has yet another argument against Davidson: The causalist Davidson is convinced that events are caused by causes which are events as well. Ginet on the other hand considers causes not to be events but rather (constant) conditions like opinions, desires, intents etc. Subsequently Ginet wonders how constant conditions could become a specific event that triggers another event at a specific time. Ginet's solution is that rational actions should not be related to causality because they are not triggered by a specific event as required but rather by conditions that are merging and can therefore not be distinguished in terms of time.

This means that actions have causes but these causes are extended conditions rather than a singular event. The trigger for any action is a blend of conditions. And these conditions, the aforementioned opinions, desires or intents may trigger actions at any time, they do not have a certain point of time and therefore they are undetermined.

As a result one cannot speak of a primary reason that causes a specific action at a specific point of time as Davidson does, because according to Ginet actions are undetermined results of mixed states of different causes. One should note that not only the exact time of the performance of any action is undetermined, but also whether the action may take place at all.

In Ginet's last argument the question rises whether intents lead to corporeal movements and cause them. He chooses the example of a bell ringer to highlight his position and refers to an intrinsic link between the bell ringer's intentions and his actual play. This reasoning eliminates the causalist's argument of the bell ringer's intent to play certain tunes as cause for the chimes.

⁵³ Ginet (1990, S. 148 ff.)

One can summarize his argumentation as follows: Ginet refutes any causality regarding human action and he compensates by introducing an intentional explanation. Intents are constant conditions that have their own causes. These causes are chronologically extended and they are linked to the existence of intent. Any action at any given point of time is not triggered by a singular cause or a singular intent. In the condition of the existence of intent which in turn is closely connected to causes a previously undetermined action takes place. This action may or may not take place and if it takes place it does so at any given undetermined point of time.

5.3 O'Connor

Timothy O'Connor⁵⁴ is yet another representative of non causal libertarianism. While Ginet tries largely to avoid the word causation in order not to give causalism any starting point, O'Connor assumes that actions have causes indeed. However he introduces a distinction between causality in the physical world and the kind of causation that is utilized in regard to purposeful actions. Although O'Connor does use the word causation in his opinion purposeful causation is a distinct species from physical causality.

O'Connor shares Ginet's notion that actions are not caused by specific events but unlike Ginet, as was illustrated above, he sees the agent himself as cause for action. Still, like in Ginet's concept, reasons may have an influence on actions but they do not immediately trigger any action. Whether reasons become effective or not is upon the agent himself who decides, of course in a non deterministic way. By this means the agent gains what is important to most libertarians and that is control over his actions. For that reason O'Connor emphasizes that specific events are not triggered within the agent but rather by the agent himself.

In this scenario reasons play an important role but the agent is free to let any reason become effective unconditionally. This means that the agent may decide differently every time, even under the same given

⁵⁴ O'Connor (2000), O'Connor (2002, S. 337 ff.)

circumstances. The agents are free in their decisions and these decisions are unconditional and undetermined. It is important to point out that libertarians aim to avoid the insinuation libertarian freedom maybe based on random chance. As O'Connor's agents gain control over their own actions through undetermined decisions they are not susceptible to the risk of random chance.

So what exactly is it that the agent causes? In O'Connor's opinion the agent causes an intentional state or intent that immediately triggers an action. The agent triggers this intentional state because of reasons. But similar to Ginet O'Connor denies that a rational causation is indeed causal. By defining any intention so that it contains not only the initiation of an action but also the intention's goal, i.e. to fulfill a certain desire, O'Connor creates synchronization between the action's goal and the action itself. Thus the agent creates action and cause for the action simultaneously. This way the agent initiates the action and the action happens for a reason, but this reason cannot have been the cause of the action because the cause always comes before its effect. In O'Connor's account reason and effect happen simultaneously therefore the reason could not have been the cause.

In this manner one can say that the agent caused the action for a reason but this reason is not the cause of the action, because the cause of the action is the creation of intent by the agent. Of course one may ask why the agent created the intend that links action and reason for action in the first place. O'Connor retreats to a holistic point of view declaring that an agent is always the sum of certain states. These states include intentions, convictions and desires. However the chosen intentional state is not caused by any of the (other) states but rather by the agent who decides which of these states to make fully operative.

One can explain this choice by the states that were existent at the time of action without making the action an effect of these states. Therefore the choice of action happened for a reason but the agent was not forced or determined to choose this reason, the agent rather chose the reason indeterministically and keeps control over his or her actions. One could

say that the agent chose to act in one way or otherwise because the agent was in the state she was in.

O'Connor elaborates his own point of view further on as a reply to Galen Strawson's suggestion that O'Connor's concept may lead to infinite regress⁵⁵: The agent exercises control over his actions in accordance to her personality and character. But in order to exert real control or have actual responsibility (for one's actions) one has to have control over one's own character. That means that the agent has to have chosen her character and to have done so for good reasons. And these reasons also have to have been substantiated by reasons. And so on and on thus creating an infinite regress, that makes Strawson conclude that real freedom cannot exist.

O'Connor partly subscribes to Strawson's view. He admits that agents cannot choose everything in their lives regarding their actions and decisions freely and unconditionally. As a result agents have a specific frame for their choices and they may choose freely only within this conditional frame. Even though O'Connor has to admit that perfect responsibility for one's action cannot exist he cherishes agent responsibility.

The agent's character has major influence over the agent's choice in a certain situation. Even if the agent chooses her intents and reasons indeterministically a tendency for the choice of reasons arises from her character. Therefore O'Connor regards agent causality as a probability trend, because even though the agent is the only cause for the agent's choice, it is directly dependent on the agent's overall mental condition. But even if there are strong tendencies for a specific intent or action for a certain reason, the agent can still decide freely and undetermined for another intent, i.e. to initiate another action for another reason. A specific choice can be explained by itself only a posteriori.

In summary it can be stated that O'Connor assigns free and undetermined choice to the agent. We are all agents, each and every one of us is a

⁵⁵ Strawson (1986, S. 27 - 51)

holistic comprehensive whole. Our ability to decide as agents arises from the complexity of our components. And even though O'Connor admits that reasons play an important role in the free decision making process, it is not the reasons that cause actions. The agent rather chooses an intent in which the action is linked to a reason in immediate effect, so the agent initiates an undetermined action while being in the state of intent.

5.4 Clarke

In his own account Randolph Clarke⁵⁶ takes on a rather important aspect of O'Connor's account: the notion of agent causality. Clarke also sees the agent as the decision maker who decides free and unconditionally. Clarke considers agent causality to be „causation by substance”⁵⁷ as the agent, of course, is held to be a substance. Thus on the one hand Clarke refers to O'Connor's holistic account, but on the other hand Clarke considers the agent alone not to be sufficient as causal source. Clarke assumes that besides the agent events *within* the agent are essential for causation. As mentioned before Kane classifies Clarke's account as an EC-AC theory, while Clarke himself describes it as „Integrated Agent – Causal Account”⁵⁸. He defines events as actions that were caused by specific mental events: *„An event is taken to be an action in virtue of being caused in a certain way by mental events of certain sort.”*⁵⁹ (Author's note: actually this is not a viable definition at all because it defines an event to be an event. Following Clarke's further elaborations one may interpret „mental event of certain sort” here as decision. Additionally he defines events, understood here as decisions, as induced by the adoption of intents. Desires and convictions are also included in the notion of intents. In this sense an event would be the activation of intent. Both definitions are then combined in the following: *„In deciding one actively forms an intention.”*⁶⁰ By postulating that intents cannot be actively acquired Clarke manages to avoid a lapse into infinite regress.

⁵⁶ Clarke (2005), Clarke (2002, S. 356 ff.)

⁵⁷ Clarke (2005, S. 27)

⁵⁸ Clarke (2005, S. 133 ff.)

⁵⁹ Clarke (2005, S. 25)

⁶⁰ Clarke (2005, S.26)

So Clarke maintains that besides the agent himself indeterministic events/ decisions *within* the agent initiate actions. Therefore initially an event or a decision is the causation of an action. Just like in other event causal libertarian accounts this event or decision has to be undetermined but rational, that means the action must be executed upon reasonable grounds. For instance the agent may face a decision between two alternatives. The agent has reasonable grounds for both alternatives and he may choose each alternative with good reason. The agent's choice is then caused by an event within the agent, i.e. the decision. So it was not clear before the decision which alternative the agent would choose, thus making the decision undetermined. But from Clarke's point of view the agent had reasonable grounds for her choice therefore the decision was not irrational. Rather the action was caused for good reasons by an undetermined event within the agent.

On the other hand the agent has to have control over these events so that it is upon her to either execute an action or not. Therefore the agent decides free and undetermined whether any reasons may become effective or not. During the whole decision making process the agent has an intent. But this intent is not the cause of the agent's decision, it can rather be described as a circumstance.

In principle Clarke combines the terms reasons and intents within his account: On one hand undetermined events cause actions on reasonable grounds and as alternative possibilities are existent this grants openness as required by libertarianism. On the other hand intents ensure that in addition (to the events) the agent initiates action, thus securing control over the action as the agent would have been able to do so or otherwise. In Clarke's view only an integrated account of agent causality can fulfill the libertarian requirements on free will. In his words: *„An integrated agent – causal account provides for an agent's exercising, when she acts with direct freedom, this same variety of active control plus a further power to causally influence which of the open alternatives will be made actual. In exercising this further power, the agent is literally an originator of her action, and neither the action nor her initiating the*

action is causally determined by events.'⁶¹ Thus control is granted by 'this further power'.

To ensure that the agent keeps control over her actions, in Clarke's account control has to be a metaphysical phenomenon. Clarke provides this metaphysical element with what he calls the 'Core Account'⁶². This means he allows an epistemological component within any explanation in the relation between Explanans und Explanandum.

A typical causalist would argue that the cause as explanans triggers the effect as explanandum. Clarke however turns this order of events upside down: he considers that the realization of the effect, the explanandum, determines the cause, the explanans. Thus, quite similar to O'Connor, Clarke in a sense adopts a position a posteriori. Even though reasons initiate actions in an undetermined way, which means they do not cause these actions directly, one may explain the actions a posteriori through their reasons. Since the action on the other hand was undetermined until actually executed the agent could still have initiated another action. And even this action, though improbable, would have been explicable a posteriori. The agent simply chose otherwise.

Additionally Clarke emphasizes that his advocacy for free will stems from similar grounds as Kant's. In his 'Groundwork of the Metaphysics of Morals' Kant has extensively elaborated that freedom of will is a condition sine qua non for the justification of moral behavior⁶³. Clarke argues as well that freedom of will is part of human dignity. Only if the agent has control over her actions she can be held morally accountable for these actions. If determinism were true in Clarke's opinion that would mean that any process of deliberation is superfluous. The assumption that the final result of such a thought process is be a free and unconditional decision would be mere illusion. Now Clarke argues that this notion is refuted by our experiences of daily life. But in an indeterministic event causal decision process this is different. Here the course of events is shaped by the events indeterministically chosen by the agent. The course

⁶¹ Clarke (2003, S. 151)

⁶² Clarke (2005, S. 34-37)

⁶³ Kant (1974 / 1)

of the whole world is defined through the agent's free decisions and this is very important to Clarke, because if determinism were true all human beings would be reduced to helpless victims of fate. But as Clarke wonders about the plausibility of a nondeterministic free will he comes to the same conclusion as Kant before him: There is no way to prove free will.

But Clarke finds at least one clue for possible indetermination in the fact that even physicists develop doubts about determinism within the debate over the right interpretation of quantum mechanics. Additionally he stresses that unless mental processes work totally independent from physical brain processes, which is yet to be proved, physical neural processes necessarily have to include indeterminism. Accordingly Clarke does not consider the Constitution Thesis to be refuted. Consistently Clarke professes to agnosticism due to the many unsettled interrelations.

In summary one may say that Clarke too sees the agent who is afflicted with intent as the trigger for free decisions, but Clarke additionally matches the decisions with certain indeterministic events. While O'Connor's account states that the agent has reasons through the existence of an intent and the agent chooses the determinant reason simultaneously with the action, Clarke declares that the agent first chooses the reason and this reason necessarily leads to action. In both cases however the action itself is not determined beforehand and the agent exercises control with an additional force. It becomes clear that Clarke's motivation for the justification of free will is similar to Kant's in that they both want to attribute personal responsibility and autonomy to human beings. In all honesty Clarke admits that there is no proof for this position. Just as Kant before him Clarke emerges as an agnostic in the sense that the two of them cannot explain freedom of volition.

5.5 Kane

Robert Kane⁶⁴ promotes a libertarian approach that abandons agent causality. Incompatibilist libertarians follow van Inwagen's Consequence

⁶⁴ Kane (2002, S. 406 ff.), Kane (2005)

Argument that views determinism and free will as incompatible. Consequently the principle of alternative possibilities, though obviously contradictory to determinism is one of the most important principles of libertarianism. However Kane considers this principle too weak as substantiation for free will and he introduces the principle of ultimate responsibility instead. For this Kane takes recourse to Strawson's foundational argument that one cannot be held responsible for one's own character. The principle of ultimate responsibility solves this problem. In order to make the agent responsible for her actions Kane requires ultimate responsibility for her character.

Kane is an event causalist in that he assumes that events *within* the agent (i.e. reasons or assessments and selections of reasons) cause certain decisions or actions even in a deterministic way. The reasons are linked to character and subsequently to convictions and motives. But since character and the intertwined convictions and motives lead to decisions that in return initiate actions, in order to assign responsibility character has to be at least partially self determined. But only the choice (of character) has to be indeterministic, not the resulting further course of events.

With this approach Kane eliminates the principle of alternative possibilities or respectively the principle of 'being able to do so or otherwise'. In this manner Kane rather elegantly disposes of one possible contradiction of libertarianism, that attaches great value to the possibility to choose one way and then another. Of course this seems to be in conflict with rational decisions, why would anyone under the same circumstances choose one way and then another?

In Kane's concept this is no longer the case: character and the status quo of convictions and desires lead in most cases wholly deterministic to a decision that is at least in principle, predictable. As an example for this determination of actions by character Kane quotes the attributed utterance of Martin Luther before the Diet of Worms: 'Here I stand. I can do no other'⁶⁵ as he refused to recant his writings. Kane elaborates that

⁶⁵ There is no reference since this utterance is undocumented.

Luther did not rely on the fact that no alternatives existed, which would mean to either recant or not, but rather that it would have been contradictory to his character and that he, Luther, did not have any possibility to change his own character.

Essentially Kane restricts both the principle of alternative possibilities and the principle ‘being able to do so or otherwise’: because the agent’s character does not allow any kind of ‘being able to do so or differently’ in many situations there are no alternative possibilities, thus making character the determinant of actions. Though in referring to the foundational argument it is required that for free will character has to be chosen freely. This is exactly what Kane assumes, postulating so called self – forming actions (SFAs), that were chosen freely and undetermined by the agent and that are responsible for her character and self. With this idea Kane strives to avoid infinite regress that would emerge otherwise: If reasons are seen as responsible for actions the question of why a certain reason was chosen arises again and again and every answer leads back to the actual question.

So Kane postulates that there are certain actions in the life of an agent that are undetermined and unquestionable themselves but determine the agent’s further actions, these are the SFAs. In that manner an agent acts according to her character which means according to convictions and motives. The agent chose her character freely and undetermined, which makes her ultimately responsible for her actions.

We have seen that Kane distanced himself from the principle of alternative possibilities. As discussed earlier this principle harbors the danger of confusing the options of action with the options of thought. Volition has been defined as an act of thought and Kane notes that the question whether or not any action should be deemed voluntary does not rely on whether or not there might have been other options possible but rather on the fact that the action was taken ‘voluntary, intentionally and rationally’. Kane dubs these as the plurality conditions and he hits the common understanding of free will exactly with his concept. (Author’s

note: The term 'voluntary' as used by Kane would actually lead to a circular argument; it should rather be understood as 'unopposed')

Any action that was taken intentionally, rationally and without compulsion is considered to be voluntary. Kane thusly defies that any action should be considered voluntary even if there were no alternative options possible. Kane states an action to be voluntary first and foremost if it corresponds with the agent's character. As seen before in Kane's explanations about his concept of ultimate responsibility it is not necessarily required that each and every action should be undermined. To establish freedom of will it is only required that *certain* actions remain free. Accordingly Kane also calls this kind of actions, the SFAs, will-setting. Any other action may arise in completely deterministic manner from the agent's character.

Contrary to that a will-setting action is an action that is not determined by the circumstances (i.e. the agent's character). Such a situation may ensue if diverse options correspond with the agent's character and therefore a conflict emerges in which diverse motives contradict each other. So alternative options become possible and by choosing one alternative the agent forms her own character and will towards a certain direction. Of course the plurality conditions are in effect too, so the choice must be unhampered, rational and intentional. We have learned that in order to use ultimate responsibility as a foundation for free will one needs will-setting actions that have to be undetermined, these actions have to correspond to the plurality conditions and the agent had to have viable alternatives.

To illustrate his concept Kane chooses the example of a business woman. She is on her way to a crucial meeting that is of utmost importance for her further career when en route she witnesses an assault. She feels urged by her own moral standards to interfere and aid the victim. But that would lead to her missing the important meeting. If she actually missed the meeting it is clear that she would have to accept a major setback in her career aspirations. Accordingly a strong internal conflict arises between two different motives that until now have both been part of her

character. On one hand there is her healthy ambition to be professionally successful and to make a career for herself. On the other hand there are her moral convictions that urge her to help people in need. In this example there is no way for both motives to become effective as they are mutually exclusive. So she will have to choose one motive. This choice, regardless of what she actually chooses to do, is undetermined itself but in Kane's view it will determine the future character of the business woman. Therefore this is a self-forming action or SFA: The business woman has the urge to help but she also wishes to attend her meeting, so her wish struggles against her urge.

Kane does not content to describe free will with a network of terms and definitions it is important for him to explain free will rationally which leads him to the question of intelligibility. In Kane's view it does not do to simply postulate the indeterminacy of (certain) voluntary actions, because libertarianism's opponents might just object that these actions would be random. Whereas Kane, like most other libertarians, attach great importance to the notion that voluntary actions are indeed controlled by the agent. Also free will has to be rational and explicable rather than mysterious. Kane is not convinced by O'connor's notion as it makes the agent responsible in a vague and metaphysical manner and furthermore he deems the agent causation 'sui generis' arbitrary and not at all well founded. His own version of libertarianism accentuates that reasons, motives and intentions lead to actions, he therefore defines his own theory as 'teleological intelligibility' (TI). It also embodies event causality because the aforementioned reasons, motives and intentions, which are the causes of decisions, are of course events. In most of the situations the actions caused by these events are determined. Only the will-setting SFAs that emerge in a conflict, like the situation the business woman faces, have to remain undetermined.

For the foundation of his account Kane develops a scientific explanation. Because Kane sees the physical world as a closed system rather than an open one the aforementioned conflict has to play out in any way on a neural level in the brain. His theory states that in case of conflict certain

brain regions lose their former thermal equilibrium, thus creating a chaotic state, which in turn reacts highly sensitive to micro-uncertainties on a neural level. The uncertainty one may feel in a case of conflict like the business women's corresponds to the uncertainty of the neural process. In the end the uncertain and undetermined neural process will devolve into a determined process again as the SFA was executed and a new character trait has been formed. It fits the account that not all actions are undetermined. In all non-conflict cases actions are chosen in regard to one's character, on neural level this means that uncertainty is suppressed. According to Kane neural uncertainty has to remain ineffective in such cases because otherwise all decisions would be random. In order to avoid the accusation of randomness in regard to the SFAs Kane describes both conflicting neural thought processes as a respective disturbance of one process by the other. To illustrate this notion Kane evokes the example of a mathematician who tries to solve a mathematical problem and who is disturbed by ambient noise. Through effort the mathematician is able to ignore the noise and solve the problem. This is exactly how Kane pictures the solution of uncertainty on neural levels. Whenever the agent resolves a conflict through a decision she makes, it is understood that as a result of the agent's effort one neural process reaches a certain threshold and is consequently put into action, so one process has basically overridden the other's interference.

Kane sees his theory proven by the fact that the human brain indeed works as a parallel processor. Therefore in the case of SFAs the agent makes an effort to solve different and contradictory thought problems resulting in *one* problem being solved in the end. This complexity of decision making processes is essential for self-forming actions and the whole concept of free will according to Kane. He also highlights the difference between 'determined' and 'caused', which lies in the agent's effort. The agent makes an effort to choose a self-forming action and in doing this he or she has ultimate control over her own actions. In any case of conflict the agent chooses a SFA by effort and causes an action without the choice being determined.

At this point Kane revisits his mathematician's example: through his effort the mathematician was able to overcome the ambient noise and solve the problem. Just as one would adjudge the merit of solving the problem to the mathematician one should award the merit and responsibility of choosing any SFA to the agent. The agent has chosen the SFA undetermined but his or her effort caused the choice. The objection that the control of decision evades the agent through its indeterminacy is answered by a concession. In case of conflict control is indeed restricted, but Kane points out that it is one's own will that brings about the restriction because in this case the agent wants either one or the other. But of course one cannot have it both ways. Accordingly Kane considers restricted control in the described manner to be the actual cause of the evolution of free will because self-forming actions can only emerge from conflict.

Kane's last argument against contingency is the ever evolving growth of character. Even if a SFA is chosen in one situation the character trait is not set in stone instead it will be questioned again and again. It may well be that the business woman chose to act in her own interest rather than aiding the assault victim. But it is possible for her to regret her choice and to decide differently in the future.

We can conclude that Kane shows the strongest effort to provide libertarianism with a solid scientific foundation. And by admitting that not every action has to be undetermined, in fact he sees many actions to be determined by the character, he reaches that goal initially. Following the Basic Argument Kane deducts that in this case an agent has to be responsible for her character. But since only a limited number of actions are essential for character development, only these actions, which Kane calls self-forming acts or SFAs, have to be undetermined. SFAs emerge from situations of conflict in which the agent has to choose one of several equivalent alternatives. It is these decisions that Kane associates chaotic indeterministic neural processes to, which are nevertheless controlled by the agent's efforts.

All libertarians that have been investigated so far share one commonality: Indeterminacy means that an agent under the exact same conditions may choose to act differently each time. (In Kane's case it is sufficient that the agent can choose differently in certain character-forming situations.) This is libertarianism's main doctrine: nothing that is situated prior to the decision can determine the decision. Only the decision itself chooses, in a manner of speaking, posteriori the reasons for the decision. All four of the presented libertarians agree that, if under the exact same circumstances only one viable option remained this decision would have been determined.

5.6 Keil

As our last example we will investigate Geert Keil's⁶⁶ libertarianism. In his concept of free will Keil refers to Karl R. Popper's so called 'common sense'⁶⁷, which he facilitates to defend the principle of 'being able to do so or otherwise'. Indeed we all have the feeling of free will, the sense of being able to choose between alternatives. In Keil's view this common sense realization and the meaning derived from it are sufficient grounds for the existence of free will. Only if something undermines this feeling one has to scrutinize the notion of free will. Since Keil does not observe any findings that contradict this original intuition he considers the existence of free will as a given.

As illustrated in detail above Keil denies determinism fundamentally. Regardless of this he develops a concept for a libertarian freedom of will. He considers himself to be an event causalist rather than an agent causalist and he refuses Kane's concept of ultimate responsibility. Keil's account goes back to the power of suspension as introduced by John Locke. Keil, too, notes that freedom of will is closely tied to the execution of actions for reasons. Being an event causalist he regards reasons, in an indeterministic way of course, as causes for action. For him acting upon reasons means that convictions, desires and intentions become effective. Even though these convictions, desires and intentions arise from one's character Keil, in contrast to Kane, does not see the need for us to choose our own character. On the contrary, Keil actually refutes Kane's notion because in his view it is aimed too strongly on deterministic causal causation. He rather sees freedom in the ability of a balanced deliberation processes. This ability takes personal convictions and desires into account but it also incorporates the possibility to reflect these convictions and desires and to distance oneself from them, which means to let them remain ineffective. In Keil's view any evaluations and assessments during the thought process are actually obstacles. If they

⁶⁶ Keil (2007), Keil (2009)

⁶⁷ Popper (1973)

were not existent one would act upon any desire, freedom of action provided. Because Keil does not consider this to be a capability he defines freedom of will as the capability of overcoming obstacles in the decision process. With this definition Keil obviously tolerates a certain restriction of freedom as the agent's persona is shaped by multiple conditions that are outside of her control. This includes genetic disposition as well as early development factors. It is important though that this 'equipment' does not automatically lead to all further actions in a deterministic fashion. According to Keil any human being is free to decide which motives to act upon and which to leave in their ineffective state and not act upon. Therefore freedom of will is rational and reasonable management of one's own dispositions. Nevertheless Keil explicitly takes a stand against any libertarian account of agent causality. In his own words he states: *'It is hard enough to understand that the course of the world should rely on a first mover, but to assume that entire legions shall be under way, all of them continuously initiating new first causes would make natural sciences, and not only these, very complicated indeed.'*⁶⁸

And further against a certain apprehension of causality: *'Our actions are accompanied by physiological processes and bodily movements. These events have causes and effects. Indeed we all start executing actions but this start is by no means the initialization of a causal chain. Causal chains start and end nowhere, they rather run blindly through us and our actions, however in a nondeterministic way.'*⁶⁹

And to make his views about the agent's role clear: *'Anything an agent contributes to the execution of her own action, is already intertwined with physiological events, it can therefore not cause them. The agent does not cause what she does, she just does it.'*⁷⁰

Keil commits himself to causalism and he sees himself as an event causalist. But all events, namely the decisions at the end of a deliberation process, must be indeterminated. On the other hand he denies the causal

⁶⁸ Keil (2009, S. 114)

⁶⁹ Keil (2009, S. 114)

⁷⁰ Keil (2009, S. 114)

causation of actions through physiological processes. Thus he merges libertarianism with a nondeterministic theory of causality.

Like every libertarian Keil, too, has to deal with the objection of randomness. As we have seen the main doctrine of libertarianism is to be 'able to do one way or otherwise' under the same circumstances. But while the other libertarian thinkers assume that the agent chooses the reason for a certain decision undetermined and simultaneously to the actual decision making, Keil defines the problem of being 'able to do so or otherwise' as dependent of the depth of the decision making process. In the evaluation of certain reasons the agent comes to a specific decision that is determined through these reasons so to say. If the agent were to make the same decision again the same reasons should lead to the same outcome. According to Keil being 'able to do one way or otherwise' under the exact same circumstances is a consequence of the fact that the agent is free to decide how deep the process of decision making shall reach. After reaching a decision the agent may or may not question it again. In this case new reasons may emerge or the old reasons may have to be reevaluated, so the agent may come to a different decision this time. But of course this different decision is based on different grounds. If the agent would indeed once decide one way and another time decide the other all under the same circumstances, Keil would deem this decision irrational while on the other hand continuing to reflect one's decisions is rational. This shows that Keil's notion of being 'able to do so or otherwise' is actually being able to continue reflecting. With that the circumstances of a decision are changed and the process of decision making varies in duration accordingly. It seems as though Keil rejects the main doctrine of libertarianism of being 'able to do one way or otherwise' under the exact same circumstances as irrational.

Keil's last argument for libertarianism is a linguistic definition: He assumes that the problem of free will is actually composed of several different issues that incorporate conceptual, metaphysical, normative and empirical sub-problems. Keil claims the first three areas for the field of philosophy exclusively. Especially the question of freedom vs.

determinism, i.e. the question of whether determinism is true or whether freedom of volition exists, is solely a philosophical matter to Keil. This question requires that the Consequence Argument, i.e. that not both can be true at the same time, to be correct.

Keil assumes that the problem of freedom vs. determinism can be solved through conceptual clarification and theoretical deductions alone. From his point of view freedom of will is at risk only if empirical findings come to exclude theoretical philosophical accounts. Since Keil's account relies on the ability to reflect, to evaluate and to continue reflecting as its core, freedom were endangered only if neural sciences would question these abilities due to their findings. Since this is not the case the problem of free will remains a purely philosophical problem.

Summarizing the above, it can be said that Keil denies determinism just like the other libertarians, but he incorporates specific attitudes towards causality in his account. He knows, of course, that one may quickly deduce determinism from causality. Therefore he officially commits himself to causalism while at the same time denying agent causality as well as causal causation of physiological processes.

Keil basically states that freedom of volition emerges from the thought process preceding any decision und it is undetermined how deep this thought process goes. So anybody has the possibility to take a moment for reflection and to asses one's reasons. Whether one or another decision is made depends on where the process of assessment and reflection ends. With this Keil still maintains the 'ability to do so or otherwise' as required by libertarianism as a measure of freedom, while at the same time bringing forward his own definition.

Evaluation of Libertarianism

6.1 The Denial of Determinism

The first question is how to evaluate the libertarian denial of determinism. The first problem to emerge is the utilization of Laplace's demon. Robert Bishop is a physicist who investigates the problems of determinism vs. indeterminism and free will from a physicist's point of view and whom libertarians like to quote in their argumentations.⁷¹ He, too, takes the Laplace definition as a starting point and libertarians obviously try to gain legitimacy for their own denial of determinism through quotes of a physicist sharing their point of view, i.e. Bishop. We will discuss Bishop's deliberations a little later on.

In the whole discussion about Laplace's demon it has been completely ignored that Laplace uses the demon only as a means of explanation for determinism. The question whether the world is determined or not is a matter of ontology. Whether the universe is determined or not was already decided 13.7 billion years ago with the big bang.

If the world, or rather, the universe is indeed determined, this is the case whether or not somebody exists to calculate or even to precalculate the future. If the universe was in fact laid up in a deterministic manner at the time of the big bang it does not matter whether or not at one point intelligent beings will emerge who detect this determinism. Any possible calculations these beings bring on are part of the epistemology. But the epistemological view Laplace's demon enjoys was introduced by Laplace only to give a better idea of the problem.

Laplace deliberately uses the conditional tense, namely: *,if somebody existed who could anticipate everything, he could know the future in*

⁷¹ Kane (2002, S. 111), Keil (2009, S. 35)

detail'. The knowing daemon is based on the epistemological view and on the condition that the future can indeed be calculated and predicted, which is the ontological requirement for the epistemological predictability. In principle ontology is always the required condition for epistemology, because of course what does not exist cannot be known. Basically this is the reason for the impossibility to shatter ontologies with epistemological argumentations. All these kinds of arguments are a priori false. Therefore the ontological question of whether or not the universe is deterministic is exclusively a physical question. (Author's note: Popper's reflections are false, too, because Popper does not differ between ontology and epistemology.)

However, Keil goes one step further and in his contemplations on the character of natural laws questions the existence of physical causality, which is the very foundation of determinism. He claims that the laws of nature are not succession laws and therefore they do not causally enforce certain behavior. With all due respect Keil's interpretation cannot be taken seriously because he does not provide a detailed conceptual analysis. The term 'natural laws' is indeed being used for an aggregation of interrelations that describe nature and physics respectively. And indeed several of these 'natural laws' are of a descriptive nature only, like the aforementioned mathematics of pendulums. Apart from that we have many interrelational descriptions that are no longer called 'laws', for instance the basic equation of quantum mechanics, the Schrödinger-equation. But we find undisputed succession laws like gravity or Coulomb's law in this aggregation, too. These two natural laws describe the forces that masses or charges respectively hold over each other. In physics a force is per definition an influence that forces an object to undergo a certain change of its status quo. When the universe came into being 13.7 billion years ago, particles emerged in the big bang and with them forces that these particles hold over one another. As we know from the first Newtonian law these forces are the causes of all effects and all changes, because without the existence of forces everything would remain in its original state. So natural laws are based on forces and the

natural laws describe the effects of these forces in certain situations, just like with the aforementioned pendulum.

Therefore forces are responsible for the development of the whole universe towards the emergence of intelligent life forms and their capacity of thought. However, this does not necessarily mean that the whole evolution and mind itself are determined. But there should be no doubt that the forces and the effects of the forces as described in the laws of nature fundamentally enforce the evolution of the universe. So, when physicists state that the laws of nature enforce the course of the universe, they actually mean that the elemental forces of nature whose effects are described in the laws of nature enforce the course of the universe. In this sense the mathematics of pendulums are indeed a succession law, it is only an abbreviated efficient manner of speaking. In its complete meaning it states that due to the influence of gravitational force any structure like a pendulum in a gravitational field will be forced to act as described (and predicted) in the mathematics of pendulum.

Keil's chain of arguments as presented above has to be untrue either in its second or in its fourth claim: If one interprets the term 'natural law' like Keil in a narrow way, it is the forces of nature that enforce a determined course of the future, not the laws of nature, thus proving his second claim untrue. If on the other hand one chooses to interpret the term 'natural law' in a broader sense like it is here, then the laws of nature are laws of succession indeed and Keil's fourth claim must be untrue. Logic dictates that true statements cannot hail from false claims, therefore Keil's deduction that natural laws are not succession laws and that determinism can thusly be refuted, is completely illogical.

Nevertheless as we have mentioned before, one cannot deduce from the fact that natural laws enforce a certain course of events that this has to be strictly deterministic. We will discuss this point thoroughly later on. For now we shall conclude that Keil's attempt to deny the causal character of natural laws is entirely absurd.

Irrespective of this both Keil and Kane claim that determinism has already been denied by physicists. The reason for this claim lies in one particular problem that is still unsolved, namely whether quantum mechanics should be interpreted in a deterministic or indeterministic way. Of course this is grounded on the essential question of whether the ontology of the atomic and subatomic world is determined or undetermined. Quantum theory itself is as a theory extremely well affirmed, but it can be interpreted differently. The classical interpretation, the so called Copenhagen interpretation⁷², states that singular events of quantum objects (i.e. atoms, elementary particles and photons) can only be predicted probabilistically, which means that atomic events are no longer determined, rather they are chance events. But while this is true only for singular events a large collection of similar objects will behave in a strictly deterministic way. But the Copenhagen interpretation remains not undisputed among physicists, which is essentially due to the fact that the so called wave function that describes all information for a particular quantum object behaves in a deterministic manner after all. Only observation causes the wave function to ‚collapse‘ and the results of the observation become undetermined. Putting aside the fact that the notion of ‘collapse’ was mysterious even for the founding fathers of quantum mechanics, the observer brings an epistemological component into play. Thus the question arises whether a deterministic ontology *only seems* to become indeterministic for the observer through a dysfunctional reading. Hugh Everett III⁷³ developed an alternative interpretation to ease the disquiet about the mysterious collapse of the wave function, the ‘many worlds interpretation’ that has become more and more popular.

Following this interpretation the universe continuously splits up into additional universes and we respectively copies of ourselves live in many universes simultaneously. The clou being that each and every one of these universes is absolutely determined and even quantum indeterminisms have been eliminated. (Author’s note: This version seems to be rather wasteful, ontologically speaking! Additionally one should

⁷² Heisenberg (2008)

⁷³ Everett (1957)

note that our universe might possibly be only one of many universes in the multiverse.⁷⁴ If both theories were right the number of universes would be mind-boggling!)

Another interpretation is called Bohmian mechanics after its inventor, David Bohm⁷⁵. Because Bohm referred to some ideas by Louis de Broglie⁷⁶ this interpretation is also called de Broglie–Bohm theory. While in classical quantum mechanics the wave function defines the state of any object, in Bohmian mechanics the wave function represents in a manner of speaking the particle's possible paths. Thus the combination of particle position and wave function results in a determined evolution of the object. Bohmian mechanics state that the uncertainties of the classical (Copenhagen) interpretation are only the result of the observer's ignorance about the objects' initial positions. So in Bohm's view the quantum theoretical indeterminacy is purely an epistemological problem not an ontological. Since Bohmian mechanics are in their calculations and predictions absolutely identical to and virtually indistinguishable from classical quantum theory as stated in the Copenhagen interpretation there is no experimental proof to favor one over the other.

Bohmian mechanics, just like the many worlds interpretation, are strictly deterministic. Therefore the statement that determinism may be losing ground in physics is based on absolute ignorance about the state of debate within the physicists' community. However the statement that the question of whether the world of quantum mechanics behaves in a deterministic or indeterministic manner is still one of the big unsolved problems in physics is correct. But note that only few physicists can actually join the debate therefore it is advisable for philosophers to restrain themselves unless they are physicists too.

Also it is rather insignificant for the macroscopic realities of our daily lives whether quantum mechanics and the ontology based on this are deterministic or indeterministic. In the reality of our universe one seldom finds isolated quantum systems, as you know. Rather these have to be

⁷⁴ Wikipedia (2011)

⁷⁵ Bohm (1952), Passon (2010)

⁷⁶ De Broglie (1927)

tediously prepared in the lab. Quantum objects like electrons only show indeterministic behavior when they are what physicists call undisturbed, which basically means that they have to be isolated from other objects' influences. But there are no 'undisturbed' objects in our universe: even an electron in the high vacuum of interstellar space is constantly influenced by many photons from cosmic background radiation, thusly losing its quantum mechanical nature.

This principle was discovered and first described by the German physicist H. Dieter Zeh, who called it decoherence⁷⁷. All objects of the universe whether they are stars, planets, life-forms or brains are subject to decoherence. Large assemblies and decoherence result in quantum mechanical uncertainties being lost and thus quantum mechanics devolve to classical physics. Since classical physics show totally deterministic behavior all relevant physical realities of our world are bound to behave absolutely deterministic, too. One of the most important and probably the best known of contemporary physicists, the British scientist Stephen Hawking, acknowledges in his latest book 'The Grand Design': *'This book is rooted in the concept of scientific determinism.'*⁷⁸

So it is not true that determinism is losing ground in physics but actually physics consider determinism to a given in the macroscopic world. Therefore the exact opposite of Keil's assumption is true:

Isolated undisturbed systems are not a requirement for a partial determinism but rather for indeterminism! Physical determinism governs all life forms, including human beings with their brains. As Hawking explains: *'The molecular basis of biology shows that biological processes are governed by the laws of physics and chemistry and therefore are determined like the orbits of the planets.'*⁷⁹

In order to justify the indeterminacy of the human mind one necessarily requires the use of metaphysics, like for instance O'Connor denies the reducibility of our mental states to mere physical processes.

⁷⁷ Zeh (2010, S. 101 - 114), Alpha Centauri (2009)

⁷⁸ Hawking (2010, S.34)

⁷⁹ Hawking (2010, S. 32)

There should be added a few final words to Bishop's analysis of determinacy vs. indeterminacy in physical theories.⁸⁰ Bishop investigates diverse fields of modern physics and comes to the conclusion that several equations offer indeterministic solutions, too. He deduces that the problem of determinism vs. indeterminism has not been decided yet. But Bishop overlooked two essential facts: Firstly, theories are mathematical accounts and therefore are part of the epistemological realm. Whether or not we describe the ontology behind mathematical models correctly strongly depends on the available models and mathematics. It is conceivable to derive accurate descriptions from downright wrong models. The best example for this is the Ptolemy system, also known as geocentric model: Although Ptolemy based his model on a false ontology with earth as the center of the universe, the model delivered pretty good descriptions of the actual motions of celestial bodies as observed. (Author's note: The calculations based on the Ptolemy system were even more accurate at first than the initial calculations based on the ontologically speaking more correct Copernican model!) So even if a theory delivers results in accordance to experimental observation, like quantum mechanics in its indeterministic interpretation, this does not necessarily mean that it is grounded on indeterministic ontology. This fact is substantiated by the deterministic interpretation in Bohmian mechanics as illustrated above.

Secondly, not all solutions of equations pertaining to a certain theory correspond to physical reality - this is well known from the general theory of relativity, for example. Bishop takes reference on some solutions for equations in classical mechanics that lead to indeterministic behavior. But none of these effects have ever been measured therefore it can safely be said that these special mathematical solutions do not correspond to the physical reality.

As mentioned above: physicists assume that the macroscopic physical world is fully deterministic.

⁸⁰ Bishop (2006, S. 1879 – 1888)

But it should be highlighted that the strict denial of physical determinism as it is demonstrated here by Keil seems to be an extreme position among libertarians. For instance Kane assumes in his concept that many decisions are indeed of deterministic nature. He sees most decisions both in his descriptive and his neural account to be results determined by the agent's character. Kane sees this character materialized in the neural structures of the brain and he requires physical indeterminacy only for a few situations. This might be physically conceivable through quantum indeterminacy and initially it seems that Kane's account might be compatible with physical concepts. As we will see later in regard to the analysis of Kane's entire account from a physical point of view his assumptions cannot be correct.

Below we shall discuss O'Connor's argumentation regarding his entire account in more detail as well.

6.2 Assessment of the Libertarian Accounts

But now we must investigate the different libertarian positions regardless of whether determinism is true or false. One cannot but perceive that the line of argument of all libertarians as presented here exhibit great deficiencies of linguistic and logical matters as several terms are being utilized in contradicting manners.

Also one has to accuse all libertarians of not reading Ludwig Wittgenstein's 'Tractatus logico – philosophicus' properly that states⁸¹:

4.111 Philosophy is not one of the natural sciences.

4.112 The object of philosophy is the logical clarification of thoughts.

Philosophy is not a theory but an activity.

⁸¹ Wittgenstein (2003, S. 38/39)

A philosophical work consists essentially of elucidations. The result of philosophy is not a number of "philosophical propositions", but to make propositions clear.

Philosophy should make clear and delimit sharply the thoughts which otherwise are, as it were, opaque and blurred.

And further on⁸²:

6.53 The right method of philosophy would be this.: to say nothing except what can be said, i.e. the propositions of natural science, i.e., something that has nothing to do with philosophy, and then always, when someone else wished to say something metaphysical, to demonstrate to him that he had given no meaning to certain signs in his propositions.

It is not without reason that Wittgenstein ranks as one of the most significant, if not the most significant, philosophers of the 20th century.

As we will see further on each of the presented libertarian accounts leads to contradictions. Therefore in order to disprove libertarianism one does not need to refer to physical determinism as it can easily be done with philosophical means, namely with language and logic.

Let's start with Ginet: Ginet simply denies that reasons are causes, as demonstrated by Davidson. Ginet himself indicates without actually admitting it, that even his first argument against causalism as depicted by Davidson is logically false. Ginet's reformulated term (C-1) is not adequate to (1) both in linguistic and in logical terms because it lacks any indication that the intent actually triggered the action. Only Ginet's revised term (C-1, rev) is true. But instead of further elaborating this new term, that indeed confirms Davidson definition of causation by reasons, Ginet leaps to another subject, namely the connection of intents and actions. What reason lies behind this remains quite unclear as Mele's thought experiment does not reveal anything about it. Davidson states that reasons, primary reasons in fact, cause actions. Mele's thought

⁸² Wittgenstein (2003, S. 111)

experiment reveals that there may be intentions that even though they classify as primary reasons remain ineffective because of physical impairments. But Mele's statement is in no way a contradiction to Davidson! Ginet probably brings Mele into play only to reinforce his own position based on the argument that neural connections between mental processes and concrete actions as introduced by Mele have not been sufficiently investigated yet. Again an ontological correlation has been challenged by an epistemological argument here. But one cannot proof any connection to be inexistent just by stating that this connection is (yet) fully explicable.

Ginet's statement that neural processes that accompany intentions do not play a causal role in the execution of deliberate actions is pure allegation based on nothing. Additionally this claim cannot be substantiated at all and from a neuroscientific point of view it is downright wrong. Ginet cannot falsify Davidson's concept that reasons are causes for action in any way. (Author's note: Should the author's representation of Ginet's line of argument seem confused this is not because of the author's lack of diligence: Ginet's argumentation is indeed confused!)

And how about Ginet's representation of non-causal explanations? Because Ginet does not utilize the terms correctly it is obvious that he disregarded Wittgenstein's advice. For a start he uses the term action instead of decision. But as we have illustrated above only the question whether or not the decision to take action is free and deliberate is of any importance in the debate on free will. It is logically clear that the decision has to take place before the action. Intentions are factors that lead to a decision just like convictions and desires. These are present before the decision and they are indeed persistent states. But the decision itself is the end of a process, namely the decision making process, in which intentions, convictions and desires are being evaluated and weighed. It is possible, of course, that parts of the decision making process takes place involuntarily, but even these involuntary portions are part of the decision making process. This process ends at a specified point in time and that is when a decision has been made. So this is how the term decision is

defined. When a decision has been made this decision is then acted upon, i.e. this decision causes the following action in a strict causal way. So Ginet's expression is true, an intention does not cause an action, but this is not what causality means. Causality by reasons means that different reasons (intentions, convictions, desires) are being assessed in the decision making process until one reason emerges that leads to a decision which then comes into effect. And this is exactly what terms (1) and (C-1, rev) express. The intrinsic relation that Ginet notes basically exists only on a linguistic level. Regarding the temporal relation it is however true that an intention is a prolonged state in terms of time and any intention is present before the decision and it is still present while the action is executed. This has to be the case because otherwise the execution of the action may be aborted.

But this does not mean that the temporarily prolonged intention causes the action as Ginet implies but rather that the action is caused by the decision at the end of the deliberation process, which is clearly definable in terms of time. Ginet attempts to reverse causality and, so to speak, tries making an action the a posteriori cause for a reason. Additionally it shall be noted that if actions were initiated without any cause, as Ginet states, these action would be mere random acts. Eventually Ginet's supposed non-causal explanation of actions is not logically equivalent to the causal explanation given by him before. He assumes in his seemingly non-causal explanation that S starts an action V without any intent U and that S remembers intent U only after the action was initiated. With this Ginet deliberately gives a false presentation of the facts! His 'non-causal' definition is actually a linguistic term that is in no way equivalent to the causal definition and that is mainly due to his incorrect utilization of terms and his imprecise analysis of the decision making process.

Two other examples show how Ginet errs in his argumentation. In his example of the paralyzed arm Ginet denies any causality between intent and action. But this only shows a rather sloppy use of terms: How does the decision to move the supposedly paralyzed arm come into effect? Is it an involuntary reflex? That would make it a random act rather than a

deliberate action. However if it actually is a deliberate action as Ginet postulates, then by definition every movement is preceded by a decision, which initiates and causes the movement. But of course this can only occur intentionally as the intention leads to a decision, which in turn causes the arm to move. Even if one does not believe in one's ability to raise one's own arm, of course one can still have the intent to do so.

The bell ringer's example demonstrates Ginet's incorrect use of terms as well: For sure the bell ringer has the intention to play a tune and this intention leads to a decision in the cerebrum's cortex. This decision initiates an action that consists of many sequential moves. Thus the actual playing of a piece of music consists of these sequential moves that are controlled by different and rather automatically working brain regions. Of course the movements are much too quick for the cortex to actively and voluntarily control them as arbitrary movements. The intention to play a piece of music and the actual playing are two completely different facts. The *actual playing* of a piece of music has really nothing to do with the debate on free will because only the *decision to play* is subject to will. This means that Ginet got it wrong here too as he defines the term of a voluntary action incorrectly.

In summary we can conclude that Ginet attempts to justify the indeterminacy of free will by denying any causality for actions. He completely ignores everyday experience that suggests a decision making progress in order to define a non-causal causation. Apart from his incorrect analysis of the term voluntary action Ginet's argumentation incidentally leads to pure chance. His supposedly non-causal causation of actions is based on a logical distortion of facts, therefore in Ginet's account voluntary decisions are neither rational nor controlled. It should be emphasized that Ginet's whole account and the grounds for this account are absolutely inconsistent and contradictory even on a logical-linguistic level. (Author's note: It remains incomprehensible why Kane would classify Ginet as TI theorist, because Ginet does not explain anything at all, indeed he is simply indeterministic. Possibly Kane

classifies every libertarian that cannot be classified as AC theorist as TI theorist.)

O'Connor's main difference to Ginet is that he acknowledges the necessity of the causation of actions and he therefore refers to the agent, thus creating an ontological problem. His solution to this ontological problem is to fall back onto a property dualism which in turn is based on substance monism. In O'Connor's view the complexity of human beings gives rise to a holistic being, the agent, who is now free in his or her decisions. However this results in a lot of questions for all those who deny causal closure of the world. What exactly does emergence mean? How is property dualism even possible? If one accepts substance monism one has to acknowledge that the only existing substances are physical substances. These physical substances interact with each other in a certain manner, namely following the laws of nature. Diverse systems, including living systems, arise from this interaction. Mental states or, in O'Connor's view, intelligent beings like the agent respectively, are considered emergent. How is it explicable that the rules that are valid for the components bearing those emergences are no longer valid for the emergent entities themselves? Because this has to be the case if the substance is subject to determinism whereas the emergent object is not. How do we define the ontological state of emergence or of an emergent mind respectively? Why is it that in human beings the agent arises through emergence from component complexity and yet it does not with chimpanzees, whose brains are slightly smaller but basically of the same component complexity? Of course it would go beyond the scope of this paper to investigate the question of emergence or the reducibility of mental phenomena to physical phenomena, respectively. But obviously O'Connor, too, cannot give a rational answer to this question and he escapes into the realm of metaphysics. Consistently he explicitly demands a metaphysical comprehension of emergence.⁸³ Eventually he acknowledges: *The empirical facts may weigh in, ultimately, in favor of a thoroughgoing reductionism, in which case free will is an illusion.*⁸⁴

⁸³ O'Connor (2002 / 1, S. 342)

⁸⁴ O'Connor (2002 / 2)

Therefore the most generous possible assessment from a scientific point of view would be that O'Connor did not justify nor even plausibly explain his metaphysical account.

Now let us proceed to his representation of causation: Contrary to Ginet's account O'Connor's includes a defined decision point that consistently relies on the agent. The agent chooses an intention that combines immediate triggering of an action with reasons. Again, it should be noted that in principle a free voluntary decision does not necessarily need the triggering of any action because by definition will does not need action at all. Nevertheless O'Connor's synchronization of action and intention / reason must imply that in a logically equivalent way the agent automatically chooses the reason by choosing the action. Therefore it is perfectly reasonable to maintain that the agent chose the reason after all.

O'Connor states that diverse reasons may advocate the same action but that the agent can appreciate the significant reason. So in O'Connor's account, too, the (significant) reason is the momentum that initiates the action. But why was this specific reason chosen and not another? O'Connor describes the agent's state before the choice as determined by different motivations or reasons, i.e. by an intention. By her decision for an action the agent chooses one of the many possible reasons. But the question remains, why did she choose this specific reason?

Therefore we see infinite regress as the result of O'Connor's account, too. O'Connor cannot dissipate this, moreover, he highlights that the agent could do so or otherwise under the exact same circumstances. This is, of course, the core condition for free will as libertarians comprehend it. Though, if the agent could indeed choose a different reason for the same action and if there were no suggestions for this or another reason, then any such decision would have to be irrational and random. Just like Ginet O'Connor is a non-causalist, therefore his account shows similar contradictions as Ginet's and both accounts contradict real life experience, too. O'Connor, like Ginet, does not analyze correctly because an action cannot suddenly be triggered (without a cause), but rather it is caused by an event, namely the decision at the end of the thought

process. This is no contradiction to our daily life experience that sometimes suggests we act spontaneously and without much consideration because in this case an unconscious decision process takes place. And in this situation it may indeed be the case that we realize our reasons for action only a posteriori.

But this example illustrates that the decision making process is a general requirement for rationality and control. And the more cognizant and intense this process is, the more rational and controlled will the resulting decision be. O'Connor's claim that the reason for action is chosen synchronously to the initiation of action looks just like Ginet's claim of a posteriori causation of the reason through the action. The agent chooses an action and by this a reason, too. But if this reason must not be the result of a decision making process, it is no longer possible for this reason to be rational, i.e. the result of reasonable thinking. Pure agent causality that refrains from any causing events, namely decisions at the end of a thought process, can only result in uncontrolled random actions. And the fact that there may be whatever reasons for the action does not make the action rational because it is not warranted that there were no better reasons. In O'Connor's account the agent simply does not have control. Because O'Connor wants to ensure the agent's independence from the process of appreciation of reasons and rather makes the agent choose an action combined with a reason, this choice can only be random and as a result free will becomes uncontrolled and irrational.

Summarizing we can say that O'Connor, like Ginet, refutes a causation by reasons, though, in contrast, he introduces the metaphysical agent. But O'Connor's metaphysical comprehension of the agent is only postulated and he does not justify nor even plausibly explain it. And since this agent does not make her decisions after carefully weighing the reasons, these decisions have to be random by definition. In O'Connor's account, too, voluntary decisions are neither controlled nor rational. Lastly it should be emphasized that O'Connor's whole account and the grounds for this account are absolutely inconsistent and contradictory even on a logical-linguistic level.

One should give Clarke credit for analysing a general decision making process better and more profoundly than for instance Ginet or O'Connor. It is evident for Clarke that there is indeed a process by which a reason is chosen at a specific point of time and which in turn causes an action, by the way in a completely determined manner. It is therefore logically correct that Clarke assumes that the problem of indeterminacy is decided by the question of whether this reason has been chosen indeterministically or deterministically. As a libertarian he settles for it to be chosen indeterministically. But additionally he makes the agent responsible for his or her decision to ensure control. So the agent's decision itself is undetermined but it is accompanied by the agent's intent. Here, too, the conceptual deficiency of libertarian accounts shows. Following Clarke's line of thought an event within the agent, i.e. a decision, causes an action in an indeterministic manner but by virtue of a reason. Clarke then fails to answer the question of why this specific event combined with this specific reason triggers the action. As it is the libertarian conviction another reason could have triggered an alternative action. One reason does not, so to speak lead to an action out of the blue, because then this action would be purely random. Clarke correctly declares that an action is caused by an event, namely the decision. But then he refuses to accept the further analysis of the deliberation process and he downrightly ignores the part in which the decision is worked out from preexistent reasons. So Clarke's claim that the event that causes the action should be undetermined remains unjustified.

Clarke recognizes this shortcoming as he refutes⁸⁵ mere event causal accounts and therefore he introduces the agent. Unfortunately this results in linguistic redundancy or in logical inconsistency. Clarke's account states that the agent causes in an indeterministic way an undetermined event while in an intentional state and in the exertion of control. In turn this selected undetermined event, i.e. the decision, now causes the action but in a deterministic manner. But it is impossible that both the causation by the agent and the event are indeterministic. Clarke's account has two possible interpretations; one is that the agent, who is in control, chooses

⁸⁵ Clarke (2005, S. 133)

the action alternative indeterministically. If in this case the choice was fundamentally indeterministic because several alternative options existed, these alternative options would lose their status of indeterminacy immediately after the agent chose one of them. The other interpretation would be that the decision remains undetermined until it causes the action. In this case the agent caused one undetermined decision that does not assert any control over the action at all.

Thus, Clarke's account means a contradictory in terms already on a logical-linguistic level. Double indeterminacy cannot exist at all. Furthermore, linguistic inaccuracy is reflected in the utilization of the term reason on one hand and intention on the other hand. How do those two terms relate to each other? An intention is a mental state that represents a desire to execute an action. And how does this intention materialize? By reasons!

In one agent's life there is always and invariably a broad variety of action alternatives. The agent assesses, voluntarily or involuntarily, which of these are desirable and which are to be avoided. This assessment is based on reasons R and from that arises the intention I to execute action A. If the agent later has the chance to actually execute action A she will at first examine the reasons R again. Only if reasons R still support the execution of action A will the agent follow up on intention I and actually execute A. Reasons R and Intention I are so to speak synchronized: Any intention I can only last as long as reasons R support I. If these reasons R change intention I will disintegrate at the same time. There can be no intention I without reasons R. Therefore every account of agent causality incorporates the very same causation twice, once as reasons R, that is events, and as the agent's intentions I. Ironically neither the reasons nor the intentions can directly cause any actions as these have to be caused indeterministically!

It should be noted, by the way, that the differences of Clarke's and O'Connor's accounts are basically of linguistic manner only. O'Connor argues that the agent, while in a state of intention, deliberately causes an *undetermined action*, whereas Clarke propagates that the agent, while in

a state of intention, deliberately causes an *undetermined decision that in turn causes a determined action*. Basically both accounts state the same but Clarke is more analytically precise by introducing the decision into the process. However, Clarke's expression as cited above, that the agent executes a different, additional power unveils the account's inadequacy. This mysterious additional ability of the agent has to be postulated and it was neither logically nor ontologically substantiated by Clarke. This same mystical power shall then assume control over the agent's decision. And in doing that this power must not rely on events, namely the reasoning and assessment of reasons because in this case it became determined by the events. Of course it is allowed for reasons and intentions to be existent, but the agent decides only by his or her additional mystical power. In the end agent causality simply comes down to this tautology: 'The agent does, what she does, because the agent does, what she does.'

But in order to find a solution for the problem of the causation by reasons Clarke, too, deserts the physical world and speaks of a metaphysical phenomenon. He goes so far as to adopt a third epistemological element besides the actual relation between Explanans and Explanandum in an explication. Thereby he tries to avoid the linguistically contradictory problem of the 'indeterministic causation by reasons'. Here again we observe Clarke's (involuntary) need to conceal self-contradictions by utilizing complicated verbal constructions. For this he interchanges cause and effect as the effect should somehow a posteriori have caused the cause. But cause and effect are ontological entities within the facts of the case and their relation is completely detached of any possible cognition. Explanation itself is by definition an epistemological element that belongs to the facts of the case and to find an explanation means to assign an Explanans, that which explains, to an Explanandum, that which is to be explained. In the explanation one realizes then how the facts of the case are interrelated. But the causal relation between effect and cause as the foundations of an explanation are, as mentioned before, ontological. This interrelation persists even if nobody recognizes it, i.e. if there are no epistemological elements at all. Therefore, any additional

epistemological element does have no influence over the ontology of the facts of the case. The explication takes place at a later time after the facts of the case have already expired. Additionally, as Wittgenstein illustrated in great detail in his *Tractatus*, an explication is only a linguistic object that depicts the facts of the case in combinations of words, i.e. sentences⁸⁶. Again, it shall be highlighted that ontologically the effect follows the cause. Now it may be possible that epistemologically one establishes an effect first and determines the cause later. But in this case, one moves in two different processes that are chronologically far apart from each other. For it to be feasible that the second process, the explanation, may initiate causation for the first process, the facts of the case, travelling through time into the past had to be physically possible and that clearly is not the case!

This finding stays valid for mental processes, too. Even within the mind an ontological entity, like a deliberation process, causes another ontological entity, the decision. And this ontological entity causes in turn the next ontological entity, the action.

It is clear that even if one finds an explanation at later time, perhaps even realizing one's reasons for a decision only later, this cannot have any influence on the decision process itself whatsoever because this process happened much earlier. Clarke's line of thought, just as any other that interprets a decision and the following action as an a posteriori causation of the reasons to justify their libertarianism, is hereby unmasked as an illogical 'language game'.

The term 'control' poses another linguistic dilemma: analytically the term alone includes comparison with a standard. For example, if one controls the temperature of a chemical process, one at least sets a standard value and checks the actual temperature to this standard temperature. Any deviation or transgression respectively, triggers supervisory activities. In a mental decision process one could describe control as the evaluation of alternative options against the significance of reasons. Control has to ensure that the decision is made according to the (supposedly) best

⁸⁶ Wittgenstein (2003)

reason, and a decision against this best reason would be like a temperature transgression in our chemical process from above: One realizes that the standard value, in this case the best reason, does not come into effect and therefore one corrects the decision towards it. The demand of control within the decision making process and the demand of indeterminacy of this same process are mutually exclusive even on a conceptual level. Indeterminism is only possible if there is no control. Always if control comes into play everything becomes determined. But this leads to a concept of freedom that libertarians, too, dislike. The compatibility of control and the 'ability to do otherwise' under the same circumstances is the core problem to Clarke and his fellow libertarians as both requirements are mutually exclusive on a logical- linguistic level. (Author's note: As aforementioned the libertarian van Inwagen already pointed this out in his MIND-Argument)

The Kantian Argument that freedom of will is a necessary requirement of morality and of our own interference with the course of the world, though true, cannot be used for the logical justification of free will. As Clarke picks Kant's idea up again it still remains wishful thinking.

Science basically works in an inductive manner, in which systematic interrelations are derived from observed events or properties. These are then subsequently examined and either confirmed, rejected or modified. One could, of course, start with one's hypothesis, for example the freedom of will, and then attempt to verify it through facts. But scientific work still means to reject any hypothesis that is contradicted by the facts. And one should as well reject a hypothesis if one cannot find any supporting facts. Kant sensibly eliminated the provability of his hypothesis of the free will and we should similarly state that Clarke, too, identifies himself as agnostic, thereby acknowledging that he cannot scientifically ground freedom of will. As we have shown above, that is because the simultaneous demand for indeterminacy as well as control and rationality induces an irreconcilable contradiction.

Summarizing the above, it can be said that Clarke uses additional undetermined events, i.e. decisions based on reasons, besides the

metaphysical agent as a cause for voluntary decisions. But because these have to be undetermined they cannot be rational, they are merely random. Clarke's account of undetermined double causation is a contradiction in terms. Here, too, voluntary decisions are neither rational nor controllable. Thus it has to be noted that Clarke's whole account and the grounds for his account are absolutely inconsistent and contradictory even on a logical-linguistic level.

From the libertarians examined here, Kane is the only one that makes a serious attempt to ground his theory of free will on a scientific foundation. For this he reduces the question of free will to the free choice of one's own character. This is especially dexterous because it is now no longer required that every decision process should be undetermined. Other libertarian accounts require that each and every decision process be indeterministic and that basically includes even trivial decisions like the question whether to choose fish or meat in a restaurant. This seems counterintuitive to our daily experiences where on one hand we have the sensation of free will, but on the other hand we do necessarily not feel that every decision is undetermined, rather we believe it to be caused by good reasons.

The feeling that one chose one's own character at least partially undetermined and free and that one may do so again in the future is most important. That is why at first Kane's concept seems to make sense. Ultimate responsibility for one's own actions is essential for a free will and these actions have to be unhindered, rational and deliberate. Since one's decisions lead back to one's own character it is necessary that one can choose this own character freely. Kane's assumption that this happens only in certain cases of conflict makes sense, too. His theory becomes unstable when he reaches the point of control over decisions, which is a crucial point in libertarian theories. Kane sees control represented in the agent's effort, but why should that be the case? His example of the mathematician, who solves the problem despite being disturbed by ambient noise, is not at all comparable to the other example Kane chooses, the one of the business woman. While solving a math

problem the brain concentrates on one thought object, the problem. At first the ambient noise is only perceived and initially the brain engages itself with the noise on a subconscious level only. It is a peculiarity of the brain that it can only give full attention to one thought process at a time. Sometime the brain directs its attention to the noise instead of the mathematical problem and then we have indeed two thought processes that compete for attention. In this particular case one could argue that by directing attention from the interfering process back to the original problem the agent gains and exerts control. But in the case of the business woman this cannot be applied because here we have only one integrated thought process; and it is in this process that the alternatives are being evaluated and the arguments pro and contra are weighted up against each other. First one argument that supports the omission of help is being observed and evaluated, then another argument that supports helping the assault victim. Both evaluations will be compared and it may be or not be that one argument is found more serious than the other and additional arguments will be consulted. In any case we see an integrated sequential process of quasi-mathematical quality that will result in a conclusion. The business woman clearly makes an effort to find a solution and this thought process is indeed associated with an effort. But it is not at all visible how this effort would in any way be associated with control, because this effort comes up in any thought process. If mere effort could secure control without any further reasons each and every thought process would be controlled by definition. This is not the case and therefore the creation of SFAs is not controlled but random. Furthermore, since the effort alone cannot secure that the best alternative is chosen for good reasons - Kane acknowledges that later on the decision may be regrettable to the agent - the choice is not rational. Thus in Kane's account, too, character remains a product of random chance!

But regardless of the faulty comparison of the two thought processes and the lack of rational control one has to question Kane's representation of the neuroscientific background. First of all one cannot utilize the term 'thermal equilibrium' for matters of the brain. Like all living objects the brain is a system of lower entropy, which means it is far from thermal

equilibrium. And only because of this fact we (humans) can interact and interfere with nature at all.⁸⁷ But even allowing for the term ‘thermal equilibrium’ in this case, the assumption that the brain would lose its ‘thermal equilibrium’ and fall into a chaotic state does not make any sense either in physicists’ language or comprehension. For the brain there are no chaotic states. Kane obtained the term chaos in connection with neural processes from a paper by Skarda and Freeman, who unfortunately did not use it properly either.⁸⁸ Kane further argues that certain micro indeterminacies within the neural realm are being intensified by this chaos. First of all we have to ask what specifies such a micro indeterminacy. Libertarians tend to associated chaos with indeterminacy. But here we have to discern the epistemological aspect from the ontological: Ontologically speaking even chaotic systems are fully deterministic. A kind of quasi-indeterminacy arises only from the fact that in chaotic systems the slightest change in initial conditions may result in extremely different system development. Therefore the behavior of chaotic systems is extremely difficult to predict, but this is only a matter of the available algorithms and of the detailed knowledge of the initial conditions. Thus the quasi-indeterminacy of chaotic systems is an epistemological problem only. On the other hand the quasi-indeterministic development of a chaotic system renders it impossible to control. Precisely because the further development of the system cannot be predicted due to minor fluctuations of the initial conditions, the final result is undetermined and uncontrolled. In this case the business woman’s brain would have randomly chosen any option without any possible control by the woman herself.

Furthermore the only indeterminacy that may occur in physical systems is caused by quantum mechanics. But quantum mechanical indeterminacy has to be equated with chance. Additionally the agent cannot gain control over this quantum mechanical micro indeterminacy as a matter of principle, because even in physical matters indeterminacy and control are mutually exclusive. So, if a micro indeterminacy as

⁸⁷ Zeh (2005, S. 17)

⁸⁸ Skarda & Freeman (1990, S. 275 – 285)

postulated by Kane occurred and was intensified by chaos it would have to be purely random in any case. The self-forming action SFA would also develop by chance and not in a controlled manner.

Basically it should be noted, that by definition chaotic systems have a multitude of particles. As we observed before, any quantum mechanical indeterminacy in such surroundings would expire immediately due to decoherence, therefore quantum indeterminacy and chaos are mutually exclusive, too.

So, could the agent choose the initial conditions in any way at all? Regardless of the fact that this would be quite hard to imagine on a neural level, the choice of initial conditions would in turn require a reason as well and that again brings us to a situation of infinite regress. Thus it has to be noted that Kane's whole neural account is absolutely illogical and contradictory. One cannot rebuke Kane for his attempt to substantiate indeterminacy as he imagines it in a physical-neural way. Some libertarians like Ginet just assert indeterminacy without any attempts to back it up with a plausible cause. Others, like O'Connor or Clarke, realize the difficulty of a physical-neural justification and search shelter in metaphysics. One should note as well that even distinguished scientists like physicist Sir Roger Penrose tried their hand with a neural-physical explanation of mental phenomena. Penrose supposed that entangled quantum states in the micro tubuli of the cytoskeleton caused the mind to evolve.⁸⁹ This is pure nonsense from a scientific point of view and the theory was rejected by the scientific community. Apparently Penrose himself has finally given up his theory, because in his last book he makes no further reference to it.⁹⁰

It remains to be noted that in his explications Kane failed to give meaning in a Wittgensteinian way to certain characters in his sentences. But this, as explained in detail above, is due to the fact that whichever physical explanation of mental phenomena has to result in random chance.

⁸⁹ Penrose (1994), Penrose (1997)

⁹⁰ Penrose (2007)

In summary we can conclude that Kane regards most of our voluntary decisions as determined and he utilizes indeterminacy only for character forming decisions. But barring his scientifically nonsensical grounds for neural indeterminacy Kane does not allow any reasons for these character forming decisions which, by definition, makes them random. So in Kane's account, too, the character forming decisions are neither rational nor controlled. Thus it remains to be noted that Kane's whole account and the grounds for his account are absolutely inconsistent and contradictory even on a logical-linguistic level.

Keil starts his argumentation with a reference to natural intuition. It is true that we have the sensation of free will, but how much can we rely on our sensations and emotions? This same day-to-day rationality as introduced by Keil tells us that we live on a disc world, too, and that the sun rises each morning and goes down each night. Of course, nobody can tell, when human beings started to think rationally. But we can certainly assume that this was already the case when human beings started farming and breeding, i.e. ca. 12,000 years ago. On the other hand the realization that earth is a spherical planet and not a disc is attributed to Aristotle. From this follows that human kind needed at least 10,000 years or probably much more, to come to this realization. So for more than 10,000 years our day-to-day rationality led us to believe in something that was incorrect. Almost another 2,000 years went by before Copernicus recognized that the earth circles around the sun and not the other way around. It is not the sun that arises or goes down, rather our perspective onto the sun changes continuously as the earth rotates around its own axis. Earth is not a disc, it only seems this way. The sun does not go up or down, it only seems this way. So, what does this tell us? The findings of our day-to-day rationality certainly have their own value, but they do not necessarily correspond to (scientific) reality.

Certainly human beings have had the sensation of free will since they developed extended thinking faculties. But it is only around 500 years ago that humankind seriously attempted to gather scientific knowledge about the natural laws of the universe and only just 100 years since we

started scientifically investigating our brain functionality and capability. Therefore it is to be expected that new aspects regarding free will may arise from new findings that contradict our day-to-day rationality.

So we must conclude that a sensation from our day-to-day rationality regarding free will to be used as an argument for this free will's existence can only be called naive, with all due respect. (Author's note: Irrespectively of whether human beings indeed have a free will or not, they will remain convinced of the sensation of free will in their daily lives anyway.)

We already discussed that Keil denies determinism and why he is mistaken in that, therefore we will now refer to the evaluation of Keil's libertarian account. Locke's power of suspension is the core of Keil's account; it means the ability to reflect upon one's decision before acting it out. But this capability is by no means a libertarian peculiarity but a universally accepted fact and it does not give any indication of whether this reflection takes place in deterministic or indeterministic manners. Even hard determinists would not contradict the account that human beings have the ability to reflect a decision, to weigh the reasons and to think the decision over again where required. That way even the decision making process that is fully determined will run through several neural loops, giving the agent the sensation of thinking the decision over and over again. This means that Keil is wrong to assume that only the sensation of thinking a decision over again means that this decision was made undetermined thus leading to whatever kind of indeterminism. Rather the core question remains unanswered: Why is the decision making process being aborted at some point? A determinist could hold determined neural processes responsible for this behavior. But what does Keil do? Nothing at all. Additionally Keil ignores that his account, too, leads to an infinite regress because one has to ask why the agent stops at a certain point instead of investigating deeper into the matter. O'Connor and Clarke can at least bring in their metaphysical agent to explain why the agent could and maybe would decide otherwise under the exact same conditions whereas Keil is restricted to mere chance. This capability of

deciding so or otherwise in the same circumstances is the libertarian core belief and its only way to ensure undetermined decisions. But Keil's justification is that only new reasons or thinking a decision over again would bring new results and this could also be represented by any compatibilist or even an advocate of hard determinism. Keil ignores the question of why the agent should think his or her decision over again: There have to be reasons for that, because if the length and duration of the agent's further consideration is absolutely indeterministic it is deemed to become uncontrolled, irrational and ruled by mere chance. So Keil basically changes the rules by allowing different lengths for the deliberation process and thus he damages the libertarian credo of 'being able to do otherwise' under the same circumstances. Therefore generally speaking Keil is not one of the classical libertarians with whom he shares nothing at all except his rejection of determinism. However Keil is right with his realization that the credo of 'being able to do otherwise' under the exact same circumstances cannot be rational because it is not based on consideration and reasons. It is based on pure randomness but unfortunately for Keil this is true for his account, too.

Keil's representation of causality is highly questionable to say the least. What does he mean when he states that '*causal chains start and end nowhere*'⁹¹ and how can we comprehend that they run blindly through us? Used stringently the causal principle brings us right back to the big bang. In a manner of speaking the big bang is the *premium movens* or first mover. Keil is quite right in assuming that agent causality would require legions of first movers but he missed that the situation is not so different with event causality because here these events take place within the agent. And if these events are undetermined even within an environment of event causality the agent triggers a causal chain *sui generis*.

By definition indeterministic causation is not preceded by a triggering cause, so what does Keil mean by the passage of causal chains? From a physical point of view there is only one ontological first cause, which is

⁹¹ Keil (2009, S. 114)

the big bang. This first cause generates effects and the effects become the causes of new effects in turn, which become causes of furthermore effects. Taking an ontological point of view the whole course of the universe is basically one single causal chain. But from epistemological perspective it makes sense to extract individual specimens from the totality of causal chains and describe it meticulously.

Let's see a trivial example: I take the decision to play golf. I go to the golf course and start by teeing off and hitting my ball into the fairway. Thus I initiate the causal chain of golfing and anything that happens is causally determined. My intention of playing golf as a neural process caused other neural processes, which in turn caused my body movements and eventually these brought me to the tee where I placed the ball. Further neural processes that represent my intention to strike the ball in turn trigger other neural processes which make my body move in such way that I actually tee off. In this way each action has its cause and it is certainly not the case that actions coincide with bodily movements as Keil describes it. The actions are rather a sum of sequential body movements, so they are physiological processes that are in turn caused by other physiological processes, namely the brain's motion control, which is then again caused by other physiological processes, particularly reasoning and decision making.

Of course from a practical standpoint, i.e. epistemologically, it absolutely makes sense to describe only parts of the causal chains because any attempt of a complete description would have to incorporate the production process of my golf equipment and my own golf training, too. What is more: it should include my entire history basically it would have to go back to the big bang. It is therefore appropriate from a practical point of view to speak of the beginning of an action to establish the initiation of a causal chain. But to speak of the passage of a causal chain is only possible if one feels confident about the truth of determinism and only if one means the entire deterministic course of the world. This basically means that exactly the opposite of Keil's statement is true:

Causal chains run through us and through our actions, but in a deterministic way instead of an indeterministic one.

Furthermore our daily experiences and common sense are absolutely contradictory to Keil's following sentence that was quoted above. *'Anything an agent contributes to the execution of his or her own action, is already intertwined with physiological events, it can therefore not cause them.'* What any agent needs to do to make his or her actions happen is to decide to act. This decision is indeed a physiological event or strictly speaking it is a neural process that represents a mental process. This physiological event triggers another physiological event which in turn initiates the bodily movements, i.e. the action. This represents our daily experience exactly: a mental event triggers physical activity. The causal connection between physiological event and actions was illustrated in detail with the example of golf: Of course are actions caused by physiological events.

Let us now investigate Keil's claim that the question of free will vs. determinism is solely a philosophical matter. It is true that the term determinism has to be settled and also that philosophy as 'ruler' over language and linguistics should play an essential role in this. But Keil, the philosopher, has seriously misunderstood the term determinism and, as we showed in detail above, analyzed it wrongly. He mixes up epistemology and ontology plus he does not really understand what laws of nature are. Whether the world should be considered determined or undetermined from an ontological point of view is solely a matter of physics and if physicists maintain that the world is indeed determined, as a logical consequence, determinism applies to all other physical sciences, including neurosciences. And if neuroscientists consistently claim that all neural processes are purely determined they are in line with physics. In this situation philosophy and philosophers should not be entitled to have the slightest doubt about these scientific findings. And if that leads to any contradiction with philosophical opinions or norms these opinions and norms have to be adapted, not the other way around. Norms are arbitrary set, opinions are based on concepts and both can be adapted to reality

whereas the ontology of the universe cannot be adapted to better fit any philosophical musings. Of course philosophy still has metaphysics as its last resort to justify free will, bypassing physical determinism. Like the name suggests, metaphysics is beyond physics and therefore it cannot be in conflict with it. Certain libertarians like O'Connor and some compatibilist, too, use this possibility to advocate their views. But if one waives this opportunity like Keil does, one can no longer presume any judgment about the question of 'freedom vs. determinism' and certainly one cannot claim exclusivity like Keil does.

So we shall conclude that Keil tries to avoid the principle of 'being able to do so or otherwise' under the exact same circumstances, which he rightly realized to be irrational, but his offer of 'being able to investigate further' is really not a viable option. The result of a decision making process can only be random if there are no determining reasons for the depth of any undetermined investigation and deliberation process as Keil requires. So in Keil's account, too, voluntary decisions are neither rational nor controlled. Thus it has to be noted that Keil's whole account and the grounds for his account are absolutely inconsistent and contradictory even on a logical-linguistic level.

One last general remark about all libertarian accounts: Libertarians only grant freedom to our will if its decisions, following the consequence argument, are undetermined. But on the other hand they demand these decisions to be grounded on good reasons, i.e. to be rational, and to be under the agent's control. But these requirements are mutually exclusive on a logical-linguistic level, as we have demonstrated in detail above. If any of the reasons is chosen, but not necessarily the best one, the decision cannot be rational because rationality means weighing all reasons against each other and choosing the best one. But this process of consideration of course determines the decision and since in addition the agent's control should make sure that the best reason indeed leads to a decision, it only strengthens determination further. So any libertarian account is a contradiction in terms even without factoring in the denial of physical determinism! In defense of O'Connor, Clarke and Kane one should

mention that all three of them take into account the possibility of their accounts being wrong and the possibility that indeed no free will exists.⁹²

⁹² O' Connor (2002, S. 125), Clarke (2005, S. 221), Kane (2005, S. 173 – 174)

Resume

Libertarianism is one of philosophy's rather problematic schools of thought because it denies, at least partially, scientific findings. But its self-conception should actually be that philosophy can solely be pursued on the grounds of the natural sciences and their findings. These grounds can absolutely include metaphysics as it is perfectly legitimate to assume until proven otherwise, that not all phenomena can be explained purely by scientific means. But some libertarians turn this upside down by postulating their philosophical theory and then challenging all scientific findings that would contradict their theory. Unfortunately this *modus operandi* thoroughly discredits philosophy in the eyes of many scientists. It is therefore no wonder that Stephen Hawking, one of the outstanding contemporary physicists, states: *„Philosophy is dead. Philosophy has not kept up with modern developments in science, particularly physics. Scientists have become the bearers of the torch of discovery in our quest for knowledge.“*⁹³

Keil's whole line of argumentation against physical determinism can only be called absurd from a physicist's point of view. In mitigation of Kane's account one can at least note that he makes an effort to find a plausible scientific explanation. Nevertheless we have to state that his explications are nonsensical from a scientific point of view. It is quite incomprehensible and also extremely detrimental to the whole of philosophy that philosophers should operate with theories that are scientifically unsustainable. As mentioned before any philosophical theory may go beyond physics, i.e. it is allowed for philosophers to pursue metaphysics, but any theory that goes against and denies validated scientific findings, deprives itself of any grounds of justification. The question of whether physical determinism is true is solely in the domain of physics. The question of whether the world is deterministic on the nuclear and subatomic level is indeed still open. But even if there were events on a nuclear level, for instance in the brain, that are undetermined

⁹³ Hawking (2010, S. 5)

they would be purely random and control of indeterministic quantum events by other physical events would be a contradiction in terms because this would actually mean that an intrinsically indeterministic quantum event should be caused by a preceding deterministic process which of course would render the quantum event deterministic again. Notwithstanding the discussion within quantum mechanics for the time being physicists have come to terms about the fact that the world has to be fully deterministic on a macroscopic level by decoherence, including human beings and their brains. Therefore philosophy, too, has to accept determinism in the macroscopic world.

It is much more difficult to disprove O'Connor's account from a scientific point of view, because he actually brings metaphysics into play. O'Connor solves the problem of indeterminism by referring to metaphysical emergence and, like many compatibilists do, too, by denying the reducibility of the mental, including free will, to their mere physical components. In this case one does not have to challenge physical determinism because now all indeterminacy refers exclusively to the metaphysical realm of the mind, which Habermas called 'room of reasons'⁹⁴. As outlined above it would go beyond the scope of this thesis to question the pertinence of these considerations. The question of reducibility or irreducibility of all things mental to their mere physical components is the central question of the analytic philosophy of the mind. Nevertheless the physicist Hawking should be quoted again: *'In the case of people, since we cannot solve the equations that determine our behaviour, we use the effective theory that we have a free will.'*⁹⁵ So Hawking embraces the notion of full reducibility of all mental phenomena to their physical components and he considers the freedom of will as a useful account only.

But none of the analyzed accounts can deliver effective logical arguments for free will even if the processes of the brain were undetermined or if the mind was a particular metaphysical phenomenon. Quite the contrary, all concepts presented are contradictory on a logical-linguistic level.

⁹⁴ Habermas (2009, S. 182)

⁹⁵ Hawking (2010, S. 33)

Ginet does not even accept reasons for a voluntary action! But of course in this case the only remaining logical option is random chance. O'Connor and Clarke consider the agent, respectively events within the agent, to be the cause of free voluntary decisions, but how does the agent cause any action or decision and why? If there are no reasons it can again only be random chance. All libertarians adhere to the principle of 'being able to do so or otherwise' under the exact same circumstances. But any choice that is not substantiated by the agent does not stand for freedom in the strict sense, it only shows that free will would have to be random will. At least Kane reduces the problem in such a way that only few decisions, i.e. the character forming decisions, are subject to free will. But here, too, one has to ask, why a person should decide for one particular character forming action and not for another. And in Kane's account, too, this does not happen for a reason and controlled, rather it is purely random. (Author's note: As demonstrated above, even Kane's 'physical' interpretation would lead to a decision by chance.) Keil distances himself from the libertarian credo that of 'being able to do so or otherwise' under the exact same circumstances, according to him, freedom of volition consists of the capability to reconsider any decision and think it over again for an arbitrary length of time and then to decide reasonably. Again one has to ask why the agent should think her decision over again: If there are no determinating reasons the decision is ruled by mere chance.

All libertarians discuss the argument of random chance, but, because it is simply not solvable nobody succeeded in solving it. One major libertarian mistake is that they do not interpret the term 'control' correctly. Control has to incorporate any cause that is not random. A non-random mental cause is called a reason, so any controlled decision has to be a decision that follows a reason, i.e. only a reasonable decision is a rational decision. Any a posteriori choice of reasons after the decision cannot be rated as controlled because analytically control requires a causing event before the control event can be triggered as a reaction. Control without reasons is a *Contradictio in Adjecto* or contradiction in terms and random remains the only possible option. As demonstrated the

unsolvable contradiction of libertarianism is due to the logical-linguistic interconnection of the terms. Indeterminism and rationality, or control respectively, are mutually exclusive like the colors red and green. And even metaphysics is of no help if the terms are mutually exclusive.

One can illustrate this with the example of God, the metaphysical object par excellence. The Abrahamic religions teach that God is omnipotent (all-powerful) and omniscient (all-knowing), but this doctrine is incorrect because these two terms are mutually exclusive in a logical-linguistic way. Therefore God can only be one or the other. He can only be omniscient if the future is predetermined but in this case he cannot interfere, so he cannot be omnipotent. If he is to be omnipotent he can change the course of the world, of course. But in this case the course of the world would be undermined and god cannot know it, thus he can't be omniscient.

This example shows that in the discussion about free will, too, metaphysical explications cannot bridge any contradiction in terms. The libertarian van Inwagen pointed out the problem of incompatibility of control and indeterminism in his MIND-argument already. And it is only due to van Inwagen's belief in moral responsibility⁹⁶ that he did not draw the conclusion to reject libertarianism. As already recognized by Kant, freedom of will is essential for moral responsibility. And since libertarians do not want to give up on the idea of moral responsibility, they have to postulate the existence of free will as an axiomatic dogma. Of course, it is inevitable that contradictions will result as depicted. Libertarian freedom, if it existed, could only be purely random and uncontrolled. Additionally, libertarian freedom cannot be causally related to reasons, thus making it irrational. So libertarian freedom cannot be freedom at all. Therefore, irrespectively of the problem of determinism, libertarianism cannot, as a philosophical position, justify freedom of will.

⁹⁶ Van Inwagen (2008)

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