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Relativity of a Free Will Concept Depending on Both Conscious Indeterminism and Unconscious Determinism*

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Free will is difficult to classify with respect to determinism or indeterminism, and its phenomenology in consciousness often shows both aspects. Initially, it is felt as unlimited and indeterminate will power, with the potentiality of multiple choices. Thereafter, reductive deliberation is led by determinism to the final decision, which realises only one of the potential choices. The reductive deliberation phase tries to find out the best alternative and simultaneously satisfying vague motivations, contextual conditions and personal preferences. The essential sense of free will is the introduction of personal preferences, which allows a higher diversity of reactions to vague motivations. With an oversimplified model of determinism as a chain of events, incompatibilists define "free" as "undetermined" so that determinism becomes incompatible with any free choice between alternatives. In consciousness, free will requires a more complex model of network determinism as well as the consideration of unconsciousness as a causal factor. When "free" defined as "undetermined" is applied to the context of consciousness, it should be reinterpreted as "unconscious of being determined" or not aware of underlying determinism. Lacking information on determinism generates a feeling of "free" in consciousness and, therefore, gives the impression of indeterminism. Lacking information may be induced by an uncertain future without determined events—an unconscious past with biological reactions suddenly emerging from the unconsciousness or an unknown present unable to distinguish determinism of complex events. Therefore, at the level of human consciousness, the experience of free will is associated with apparent indeterminism although it is based on unconscious determinism. The concepts of compatibilism and incompatibilism are only two different aspects of the same phenomenon and correspond to consciousness and unconsciousness. Nevertheless, they can be considered together with a free will concept based on relativity depending on two different reference frames—the first person's experience frame or the Laplace's demon frame with knowledge on every molecule of the universe. Only relativity of the free will concept avoids the contradiction between "free" and "unfree" for the same phenomenon and could be a compromise for considering compatibilism and incompatibilism equally.

Keywords: free will, determinism, indeterminism, consciousness, unconsciousness, relativity, reference frames, motivations, personal preferences

1. Introduction

Human free will is generally considered as total freedom of action, which seems to be in apparent

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contradiction with physical laws for the macrocosm following strict determinism of cause-to-effect relationships. Laws established by classical physics are considered as deterministic since each effect is due to at least one cause. Quantum mechanical physics was unable to follow deterministic laws established for the macrocosm, due to the uncertainty principle (Heisenberg 1927) and created probabilistic laws for elementary particles. However, it became necessary to introduce decoherence methods (Zurek 1991) which limited probabilistic laws to the atomocosm in order to make the junction between indeterminate laws of quantum mechanics and deterministic laws in the macrocosm. Nevertheless, physical deterministic laws in the macrocosm seem to be in conflict with the free will phenomenon.

For a long time, philosophers tried to explain the apparent contradiction of free will and determinism. Two groups give opposing explanations: Compatibilists are convinced that free will and determinism are compatible (Frankfurt 1971; Fischer 1994; McKenna 2003), whereas incompatibilists deny this possibility (Ginet 1990; Van Inwagen 1983; O'Connor 2000; Kane 2002; Clarke 2004). The essential divergence lies in the possibility of choice, compatibilists (Frankfurt 1971; Fischer 1994) try to explain deterministic free will by guidance control without the need for choices. Daniel Dennett proposes a multiple viewpoints on compatibilism (Dennett 1982). Incompatibilists (Kane 2002; Clarke 2003) claim the necessity of multiple choices for the expression of free will, which would not be conceivable with determinism.

From a phenomenological viewpoint in the context of consciousness, free will can be considered as initially undefined indeterminist will power, which has to select one out of multiple alternatives. By choosing a triple-specific alternative, free will simultaneously satisfies vague motivations, contextual requirements and personal preferences. Thereby, a continuous path suggesting determinism can be traced for free will from the physical state to the mental state of potentiality in human consciousness, where selection of the optimal alternative takes place, and back again to the physical state for realisation of the chosen alternative. Potentiality in consciousness was found to be isomorphic to quantum mechanics and could explain some of its weird phenomena (Jansen 2008; 2011). Determinism is essentially due to the unconsciousness, where it creates vague motivations and personal preferences emerging in consciousness. Therefore, in consciousness, "free" does not correspond to "undetermined" but to "unconscious of being determined". Free will concepts may consider the consciousness alone, or in combination with the unconsciousness. However, each concept alone is neglecting one major aspect and is, therefore, incomplete. In consciousness, the feeling of free is dominant, whereas in unconsciousness, the concept of unfree with complete determinism dominates. Thus, relativity of the free will concept requires an equal consideration of both concepts, for consciousness incompatibilism with the "free" and for the unconsciousness compatibilism with the "unfree" aspect. Nevertheless, the essential role of free will remains the introduction of personal preferences when satisfying vague motivations and respecting contextual conditions.

2. Results

2.1 Phenomenology of Free Will in Consciousness

In human consciousness, free will can be experienced with a feeling of personal power "to do whatever one wants". In the initial phase, free will is open to multiple potentialities, but finally, requires the choice of only one potentiality for realisation after decision. This can be obtained in three phases. During the first phase or multi-potentiality phase, there may be a feeling of unlimited free will power, similar to a lottery winner of

modest origin who unexpectedly wins a tremendous amount of money. He should have a feeling of absolute liberty to buy whatever he wants although in the initial phase, he is still ignorant of what he wants and has to look for attractive options.

In the second phase, he has to reduce multiple options to a smaller number by deliberation. During this reductive deliberation phase, he has to consider three factors: already existing vague motivations allowing a variety of possible investments; secondly, limiting contextual conditions such as taxes favouring certain investments more than others and finally, his personal preference motivations consisting of the investments he would like to realise the most. Therefore, the initially unlimited free will power will only lead to one realisable choice after the reduction phase and has to satisfy three motivations: initial vague motivations, context conditions and personal preference motivations. Thereby, deliberation goes generally through a reduction process from unlimited alternatives to the final choice of one alternative, which has to represent the best combination for satisfying all motivations (See Fig. 1).

During the third phase—the decision phase—when only one option is selected out of all potentialities, free will has to first make the binary Yes/No decision, whether or not the chosen alternative has to replace the actual situation and secondly, to determine the time point for its realisation. Generally, both objectives are motivation dependent. A Yes-decision will be effected if the motivation for the new alternative is stronger than the motivation to remain in the actual situation (See Fig.1).

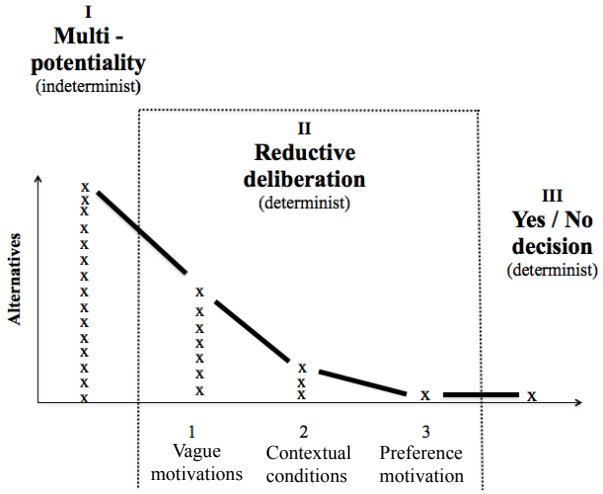

Fig. 1. Three Phases for Deciding the Optimal Alternative.

Note: Free will power goes through three phases for choosing the optimal alternative, which has to simultaneously satisfy vague motivations, contextual conditions and personal preference motivations before the final Yes/No decision is taken.

Vague motivations appearing during the reduction phase may be of a very different nature. They could be desires like hunger, thirst or sexuality, but the vague motivations can only be realised with concrete alternatives. Hunger can be satisfied by very different actions, eating a dry cake from the pocket, buying a pizza in the street, going to a self-service restaurant or having a gourmet lunch. Although all actions will entirely satisfy the basic vague motivation of hunger, their variability allows the introduction of personal preferences. The contextual

conditions may limit a gourmet dinner by the financial aspect, or a rapid pizza in the street may be preferred due to tiredness. Less vital motivations, such as reading books, listening to music or physical activities, are also sufficiently vague to require concrete alternatives for realisation. Thereby, the deliberation process has a selective role by choosing the best out of several triple-specific alternatives, which have to respect simultaneously the three factors: vague motivation, contextual conditions and personal preference motivations (See Fig. 2).

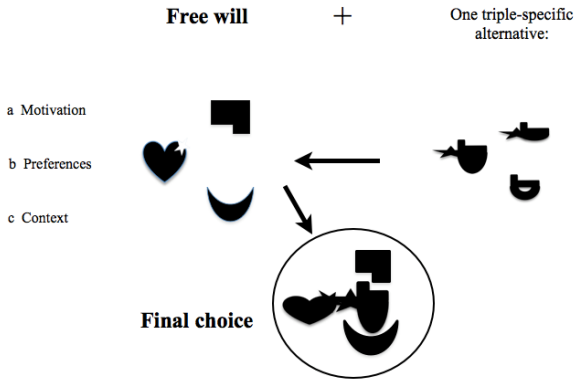

Fig. 2. Reductive Deliberation Chooses between Triple Specific Alternatives.

The three phases of the free will process may be easily distinguished when free will is facing new situations, but in repetitive situations, the deliberated choice could have been determined from the beginning and become an unmodifiable habit. A repetitive and fixed deliberation process will lose the distinctive phases and appear as a unique decision unit. Nevertheless, under unusual circumstances, a fixed deliberation may be changed and show the different phases once again.

An important effect of free will is the creation of a higher diversity of human actions through the introduction of personal preference motivations. In animals, where free will is not expected, the diversity of action is a much more restricted. This can be seen when comparing the extreme diversity of food preparation to satisfy human hunger with respect to the restricted food varieties for wild animal species.

2.2 Free Will with Apparent Indeterminism in Consciousness

Classical physics established deterministic laws for the macrocosm, which determine that all events are depending on prior causes and will become causes for following events, thus creating an uninterrupted net of causal interactions. This raises a general problem for the conception of free will. It can be argued that all biological functions of the human being have to be included in the physical macrocosm, but human actions would then be predetermined even before birth and thereby, exclude any free will liberty.

This problem can be considered from different viewpoints and can then lead to different definitions characteristic for each viewpoint. An absolute philosophical viewpoint would be based on the definition of “free” is “undetermined”. Thus, human free will seems to be excluded from the deterministic world of physics in the macrocosm. However, free will is a permanently experienced reality by all humans, thus, the absolute philosophical definition of “free” as “undetermined” might not be adapted for the description of the experienced reality of free will.

The absolute philosophical viewpoint might be acceptable with the world of quantum mechanics in which indeterminism is dominant. However, quantum mechanical indeterminism needs decoherence methods (Zurek 1991) to render indeterminism in the atomocosm compatible with determinism of classical physics in the macrocosm. Thus, indeterminism is not directly transposable into the macrocosm. Additionally, such indeterminism would render all free will decisions dependent on pure luck (Mele 2006).

When considering free will in consciousness, there is apparent indeterminism in all three phases, but quite different kinds of indeterminism. In the multi-potentiality phase I (See Fig. 1) for future actions, the lack of defined motivations gives the unlimited will power an indeterminate appearance, since there is no prediction which one of the multiple potentialities will be realised in the future. This feeling of apparent indeterminism could be called potentiality indeterminism describing the uncertainty of future events.

During the reductive deliberation phase II (See Fig. 1), vague motivations appear suddenly in an indeterminist manner in consciousness, which are required for the reduction of the multiple potentialities. However, vague motivations, such as hunger or sexual desire, have their origin in deterministic biological functions of the unconsciousness since they are induced by hormone secretions. Although the hormone secretion itself is completely unconscious, it finally leads to the feeling of hunger or sexual desire in consciousness. Vague motivations, caused by the unconsciousness and their sudden emergence in consciousness, also give an impression of indeterminism and could be called unconsciousness indeterminism, which ignores events happening in the unconsciousness and during the past.

The consideration of personal preferences during the reductive deliberation phase may have different origins. Some of them are well known preferences in consciousness, such as religious or political preferences indicating direct determinism for the decision phase. Others may be new or changing preferences, for instance, when depending on the actual humour. One may generally like wine, but under certain circumstances, prefer beer. There is no conscious reason why the general preference was changed, but humours can have unknown causes lying in the unconsciousness. Many unknown biological reasons, such as hormonal influences, food intake or weather conditions, may lead to unpredictable indeterministic changes in the mood. This kind of indeterminism could be called complexity indeterminism, which is incapable of distinguishing all causes governing an event in the present. The best analogue is tossing a dice. The movements of a dice are dependent on classical physical laws and could, in principle, be predicted if all movements were known with precision. As the complexity of the movements makes it impossible to calculate any trajectory, only statistical results can be obtained.

The last consideration during reductive deliberation concerns contextual conditions which are generally known as deterministic causes for decisions and do not lead to apparent indeterminism.

The final decision phase III (See Fig. 1) seems to be determined by the previous reductive deliberation and the chosen alternative. Nevertheless, if there is not the slightest motivation for a decision, free will participation can be abandoned. Examples are the selection of a lottery number or the election of a name from a list of completely unknown candidates. Under such circumstances, free will is totally free, but abandons any participation in the decision and leaves it to pure luck. Such decisions are totally undetermined and represent true or luck indeterminism corresponding better to quantum mechanical indeterminism (Jansen 2008).

In consciousness, indeterminism is perceived in all deliberation phases but with a different nature. Potentiality indeterminism reflects the impossibility to predict future events; unconsciousness indeterminism is lacking information on biological functions in the unconsciousness, and complexity indeterminism cannot

distinguish among complex causes. All three kinds of indeterminism could be considered as ignorance indeterminism in consciousness, which ignores determinism of actions in the future, the past or the present. Ignorance indeterminism is completely different from absolute indeterminism or luck indeterminism, which is found only in consciousness when any free will interference is abandoned. It may then resemble indeterminism claimed for quantum mechanics (See Fig. 3).

Free will phases :	I + II Multi-potentiality and reductive deliberation			III Yes / No Decision
Kind of indeterminism :	**Potentiality** indeterminism	**Unconsciousness** indeterminism	**Complexity** indeterminism	**Luck** indeterminism
Cause of indeterminism :	Uncertain **future**	Unconscious **past**	Unknown **present**	Free will **abandon**

Fig. 3. Origin of Different Kinds of Apparent Indeterminism Corresponding to the Phases of Free Will and Depending on Lacking Motivations in Consciousness.

2.3 Indeterminism in Consciousness Based on Determinism in Unconsciousness

Under certain circumstances, indeterminism as well as determinism is perceived in consciousness. Nevertheless, the question remains if consciousness alone is sufficient to cover the whole free will phenomenon or if it has to be enlarged to the unconsciousness. If determinism is not always apparent in consciousness, it might be hidden in the unconsciousness. It is well known that deterministic biological functions operating in the unconsciousness interfere with free will indirectly. Vague motivations, such as the feeling of hunger or sexual desire, depend on the secretion of hormones, which are deterministic functions in the human unconsciousness. Only the effects of hormone secretions will suddenly become conscious in an indeterminist manner, nevertheless, their influence on free will decisions is considerable.

Indeterminism could be explained by lacking information on underlying determinism. The three kinds of ignorance indeterminism show that lacking information leads to the impression of indeterminism. A blind man, who is not aware of the silent electric bus crossing his way, may decide with his free will to cross the road. If the bus hurts him, he would consider the accident as an unexpected indeterminist event. On the other hand, an observer, who saw all sequences of the accident, would perceive it as a determinist event. Thus, incomplete information leads to the impression of indeterminism and complete information to determinism. Therefore, apparent indeterminism could be based on underlying determinism.

Potentiality indeterminism concerns realisation in the future, which cannot be predicted with certitude and therefore, lacks all information on determinist causes happening in the future. Unconsciousness indeterminism is not aware of biological and psychological functions due to lacking information on determinist causes in the

past, which lead to vague motivations in consciousness. Complexity indeterminism is unable to distinguish the complexity of causes by lacking information in the present.

In all three cases, there is a black box in which determinist causes are hidden at the level of consciousness. The impossibility to predict the future with certainty is obvious. Nevertheless, unconsciousness is also extremely important for future actions decided in consciousness. Besides hormones inducing vague motivations in consciousness, the complexity of movements by sportsmen is coordinated in his unconsciousness. If he succeeds in a complex movement the first time, he should, in principle by a free will decision, be able to repeat the same movements in exactly the same way. The precise muscular co-ordination happens in unconsciousness and cannot simply be obtained by a free will decision in consciousness. Thus, intensive training is necessary to obtain the repetitive muscular co-ordination. In a similar way, unconsciousness also participates in the evaluation of personal preference motivations, which are linked to many factors in the memory such as former experiences and acquired knowledge from societies or religions. Therefore, a conscious decision can be totally deterministic under the condition that all unconscious processes were included. However, due to the black box, this cannot be explored. Thus, incomplete information on unconsciousness leads to apparent, but not absolute indeterminism (See Fig. 4).

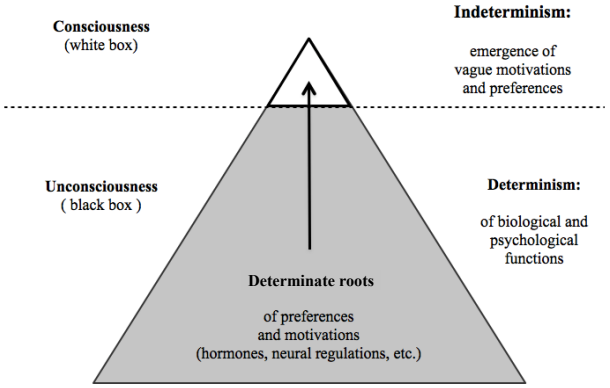

Fig. 4. Consciousness with Indeterminism and Unconsciousness with Determinism.

Note: Human unconsciousness (black box) participates in vague motivations and personal preferences but induces apparent indeterminism in consciousness (white triangle), which has its roots in biological and psychological determinism in the unconsciousness. Consciousness emerges from unconsciousness like the visible part of an iceberg.

2.4 Free Will Is Only Modulator, and Not a Creator of Vague Motivations of Unconsciousness

In general, motivations spontaneously emerge in consciousness depending on unconscious roots so that they are not created but can be modulated by will. Instinctive motivations, such as hunger, thirst or sexual desire caused by instinctive physiological functions in unconsciousness, suddenly appear in consciousness and require satisfaction. Hunger is induced by the hormone grehlin, which is released from the stomach, and sexual desire is induced by the release of sexual hormones at a certain age in the growing adult. The physiological hormone is released without our knowledge in the unconsciousness. Only the consequences of hormone release, such as feelings of hunger or sexual desire, are perceived in consciousness. Therefore, certain conscious motivations are manifestations of physiological functions in the unconsciousness, showing that it will not create such motivations although it can still modulate them after their emergence.

Motivations can also be induced by the activity of other people in different professions, sports or arts. Nevertheless, the induction of motivation always requires a specific predisposition residing in the unconsciousness. Seeing very attractive food preparations may induce a feeling of hunger, but only under the predisposition that the stomach is not overloaded from the last meal and does not yet allow a hunger feeling again. Therefore, free will itself is unable to create motivations, but under the necessary predispositions, it can help to induce them.

The only possibility of free will to interact with vague motivations is through modulation by increasing or decreasing its intensity. When concentrating one's imagination on hunger, the hunger feeling becomes more and more dominant, but when thinking about other situations, hunger can decrease or even disappear. Modulation essentially depends on the strength of vague motivations. If hunger already lasted for a longer period, it is more and more difficult to resist. Certain vital motivations, such as breathing, are so strong that their modulation by free will is limited. Although divers can train themselves not to breathe, the vital instinct will dominate and impose breathing again. Therefore, a suicide by voluntarily stopping one's breathing is impossible. Less vital motivations may be modulated more easily, for instance, the desire of finishing the lecture of a book before dinner. Normally, the motivation strength becomes the limiting factor for modulation by will.

If there is competition between antagonistic motivational forces, free will has to make a decision for one of them by weighing their force carefully to find the dominating component (See Fig. 5). Taking lunch at home may be incited by hunger and increased by the attractive smell of long desired food. If simultaneously, there is a crying baby who has to be fed first or the visit of an unexpected person retarding lunch even more, there is an antagonistic effect contradicting the initial desire. Besides these first order desires, there are often secondary order desires with higher priority (Frankfurt 1971). For instance, certain religions require fasting or on the contrary, long illness requires more energy and fasting must be avoided. Therefore, free will cannot create but only modulate the strength of vague motivations.

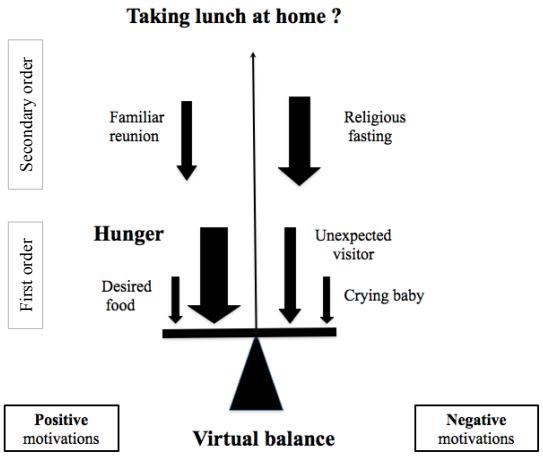

Fig. 5. Competition of Antagonistic Vague Motivations and Weighing of Their Values.

During the decision phase, the strength of motivation is a major factor when the binary Yes/No decision has to establish if the actual situation should be replaced by a new alternative. Normally, a stronger motivation

will directly influence the decision. Contrary to this, if any motivation is lacking or if a new motivation is in balance with the actual situation, the decision will only depend on luck. A decision concerning the time point of realisation similarly shows great dependence on the strength of motivation. After a great physical effort, the motivation to relax will emerge spontaneously. In the beginning of relaxation, the corresponding motivation is stronger than the motivation to continue the unfinished task. After a certain time, it diminishes and then comes into equilibrium with the continuation motivation, which later on will become dominant. As long as a new motivation is in balance with the actual situation, the time point to change only depends on luck. As soon as there is a dominating motivation, it will prevail in the decision.

2.5 Motivation Dependence of Free Will Liberty and Free Will Freedom

One may distinguish between free will liberty and free will freedom. Free will liberty could correspond to the multitude of possible alternatives and free will freedom to the ultimate Yes/No decision to accept or reject the realisation of the final chosen alternative.

During the initial multi-potentiality phase of free will, there is a feeling of total liberty to decide whatever one wants, which reflects the unlimited number of alternatives. In the following reductive deliberation phase, the degree of liberty of free will becomes more and more reduced. Vague motivations, contextual conditions and preference motivations restrict the number of alternatives. Thus, free will decisions have to make the choice for only one final alternative which reduces free will liberty completely. The feeling of a high degree of liberty of free will only prevails in the early phases of the free will process and disappears in the final reductive deliberation phase. Therefore, free will evolves from a high degree of liberty in the multi-potentiality phase I to the restriction of only one alternative after the reduction phase II (See Fig. 1).

In the decision phase III (See Fig. 1), the binary choice to realise or not to realise the final preferred alternative corresponds to the fundamental freedom of free will. As long as a person has sufficient autonomy for the decision to accept or not to accept a demand, for instance, to keep a secret, he/she is “fundamentally free”. Even under torture, a person has at least the binary Yes/No choice for acceptation or rejection. All martyrs prove that they were fundamentally free to decide for their resistance and thereby, to accept the consequence of their death.

In general, choices are dependent on specific motivations although there are three situations without motivations. First, there can be no motivations in the choice of lottery numbers. Second, an intermediary period without a dominant motivation is created when opposite motivations are in balance. Thirdly, there are situations when free will can be voluntarily replaced by luck decisions, such as in amusement games. In situations without dominant motivations, decisions will depend on pure luck. In all other situations, conscious motivations dominate the final free will choice but they are generally induced by determinism in the unconsciousness.

Many deterministic reasons are responsible for the influence of unconsciousness on emerging conscious motivations. Genetics determine human intelligence allowing the exploration of new motivations, as well as a conscientious character permitting to go into more details of motivations. Biology directly creates vague motivations such as hunger and sexual desire by the unconscious secretion of hormones or by different neurological regulations such as the day and night rhythm. The environment influences motivations through the mood. Moods can be more enthusiastic in countries with more sunshine near the equator or more depressive during winter darkness in countries near the poles. Societies influence the general behaviour of individuals through traditions and education, which will unconsciously dominate emerging motivations. Religions impose

rituals and laws memorised in the unconsciousness, which restrict or induce personal motivations. In the unconsciousness of a population, media create a general optimistic or pessimistic attitude depending on the diffusion of their news, which will be reflected in motivations. It is reasonable to expect that all motivations are more or less influenced by the human unconsciousness. When following motivations, the agent's control becomes involuntarily determined through the unconsciousness. An exception is decisions without dominant motivations, which remain undetermined and depend on pure luck.

2.6 Optimal Sense of Free Will

The sense of free will is the realisation of an alternative with the best adaptation to the three factors: vague motivations, contextual motivations and preference motivations by choosing the best triple specific alternative. A good analogue would be a key for the house door. First, it has an invariable specificity for its interaction with the door lock; second, the contextual conditions require a small size for keeping it in the pocket; and third, personal preferences could involve selecting coloured keys for a better identification between the keys. From a biological viewpoint, the sense of free will could be to create more diversity in human actions by the introduction of personal preferences. Similar to other biological areas, increased diversity in decisions could contribute to favouring survival of the species. If the sense of free will is the introduction of personal preferences, it would allow much more diversity and reduce boredom in life when satisfying vague motivations.

The sense of free will is optimised if the three factors are in equilibrium. In the case where only one factor is lacking, free will loses its essential sense. In profound depression, vague motivations are completely lacking, thereby limiting free will activity. Without limiting contextual conditions, free will choices may become unrealistic. If personal preferences are lacking, as in the choice of lottery numbers, free will has no motivation for the selection of an alternative, thus the choice depends only on luck (See Fig. 3).

In the case of one predominant factor, the optimal sense of free will is not achievable. In manic disorders, vague motivations are changing so rapidly that free will decisions do not have the necessary time to become reasonable. When alternatives are too abundant, free will decisions tend to become indecisive. Finally, if contextual requirements are too restrictive, such as under torture, free will becomes extremely limited. Therefore, free will can only acquire its optimal sense if the three factors participating in its realisation are in equilibrium, thus allowing the choice of the best triple specific alternative.

2.7 Free Will: An Intermediate between Mental and Physical States

Free will makes the connection between mental and physical states by choosing and deciding in the mental state and realising in the physical state. A simple example shows that choosing without any motivation leads to luck indeterminism and choosing with motivation to ignorance indeterminism, which is based on hidden determinism. A father takes his daughter into a jewellery shop to choose one gift for her birthday between half a dozen potential gifts. When the gifts are presented in identical but closed presentation boxes, without the slightest indication of their content, a free will decision of the daughter is possible, but there is no guidance for her personal preferences for one of the boxes. Thus, her choice would be totally random as in luck indeterminism. However, if the gifts are presented in open boxes, now, free will can be guided by the daughter's personal motivations and preferences and, leading to only one optimally satisfying gift.

While the daughter is choosing among the different boxes, mental and physical states are interacting. Whereas the gifts are real objects and are thus in the physical state, there is only a mental representation of

them in her mind where the mental choice has to be carried out. The finalised mental choice will be realised in the physical state when the hand of the daughter takes possession of the selected box. Both states are connected to each other, but follow different laws. First, an action can be imagined in the mental state but not realised in the physical state, for instance, if information and motivation are lacking (closed gift boxes). Second, several potential actions can be examined one after the other in the mental state, but only one potential action will be realised in the physical state (open gift boxes). Third, time and space coordinates are extremely flexible in the mental state, since potential actions can easily be removed or reinitiated whereas real actions in the physical state are definite with irrevocable time and space coordinates.

Without information on the jewellery (closed boxes), there was no motivation in the mental state of the daughter determining her choice for a precise box, like in luck indeterminism. On the other hand, when the open boxes were presented, there was first an ephemeral potentiality indeterminism with six potentialities. Then, determinism reduced the six potentialities to only one during the reductive deliberation with the help of motivation and personal preferences and was thereafter realised by the hand of the daughter in the physical state. Whereas the time during the deliberation phase was flexible allowing longer reflexion, the time coordinating for the realisation in the physical state was definite when the daughter took the gift. Therefore, after an ephemeral ignorance indeterminism of the initial phase, there was a continuous determinist path from the choice in the mental state to the realisation in the physical state, showing compatibility of free will with determinism (See Fig. 6).

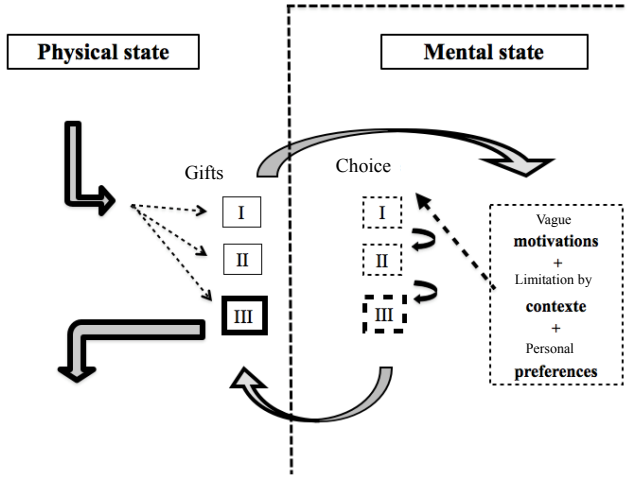

Fig. 6. Interaction between Physical and Mental States.

Note: A continuous path leads from reality to potentiality in the mental state with successive interrogation of all alternatives and returns to reality in the physical state for realisation of the selected alternative.

3. Discussion

From a phenomenological viewpoint, free will in consciousness can be considered in three phases. An apparently undetermined will power with multiple alternatives has to be reduced by a deliberation phase to only one alternative for the decision phase. During reductive deliberation, free will tries to satisfy vague motivations with context conditions and to introduce personal preferences, which increase the diversity of reactions.

Therefore, the optimal alternative must possess a triple specificity with complementarity to vague motivations, contextual conditions and personal preferences. Besides ephemeral indeterminism in the initial multi-potentiality phase I (See Fig. 1), biological functions happening in the unconsciousness and suddenly emerging in consciousness also contribute to indeterminism. Both kinds are ignorance indeterminism.

Mele (2006) rejects any kind of ignorance indeterminism based on unconscious determinism and argues that "... action depends on its freedom on the absence of deterministic causation..." (19) which therefore requires luck somewhere in the chain of events. Indeed, random or luck indeterminism can be found in some cases of the free will phenomenon during the decision phase when free will has no motivation and leaves the decision to pure luck, like for the choice of lottery numbers. However, when free will is guided by motivations, it can show ignorance indeterminism in consciousness, which is based on determinism in the unconsciousness.

This would be in accordance with Fischer (1994), since only one path can be traced in the example of the gift for the daughter. The path starts in the physical state with the six boxes in front of the daughter, and goes to the mental state where six potential boxes are reflected in her mental state. After reductive deliberation, a decision is translated to action in the physical state, where the hand of the daughter takes the preferred gift. The essential role of free will is the introduction of personal preferences and corresponds to Fischer's statement "Most of all, I would want to do it my way" (Fischer 216, last sentence of the book).

Free will liberty is a problem discussed by philosophers for a long time although there is no clear distinction between liberty and freedom. Liberty could characterise the number of possible alternatives and freedom—the fundamental power of autonomous persons to decide with "Yes" or "No" for the acceptance of the last remaining alternative, even under torture. Nevertheless, free will has limitations since it cannot create or eliminate motivations such as hunger, but it can modulate them by increasing or decreasing their intensity to favour other more valuable motivations. If different motivations are in competition, free will evaluates the most important motivations on a virtual balance and tries to modulate the intensity of the less important ones to make them disappear. This is the basis for personal responsibility when different motivations are weighed for their respective value. In general, rational moral motivations with lower strength should be preferred to stronger and harmful instinctive motivations. Here, human responsibility is engaged to modulate the decision in favour of the weaker rational motivation which represents morality.

Free will may have a biological sense by allowing the introduction of personal preferences, which increase diversity of actions by simultaneously satisfying vital as well as non-vital motivations. Higher diversity followed by specific selection is a general means of nature to increase the surviving potential of a species. The evolution of free will in Homo sapiens leading to higher diversity of actions might have contributed to the potent propagation of the human species and its domination over all the other species.

Compatibilist and incompatibilist philosophers discuss the essential problem of whether free will is compatible or not with determinism. Compatibilists accept compatibility of free will with the determinist physical laws in the macrocosm, whereas indeterminists deny this possibility (McKenna 2009). One major argument in favour of incompatibilism is the so-called "Consequence Argument" proposed by Ginet (1966) and further developed by Van Inwagen (1975). Van Inwagen (1983) formulated the "Consequence Argument" in the following way: "If determinism is true, then our acts are the 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 those things [including our present acts] are not up to us" (*An*

Essay of Free Will 16). Thereby, determinism is conceived as a chain of events that happen without our intervention, and determination is considered as the opposite of "free".

The "Consequence Argument", in favour of incompatibilism, signifies that free will could not be exercised under determinism, which allows only one path to be traced from the actual past to the final doing. Incompatibilists conclude that there must be the possibility to decide among several alternatives or paths. McKenna resumes "if determinism is true, no one has access to alternatives in the way required by the Garden of Forking Paths model" ("Compatibilism" chap. 2.1). In this model of incompatibilists, a person has the opportunity to decide for one out of several possible paths in the garden. Compatibilists cannot accept the concept of free choices since they seem not to be compatible with determinism. Frankfurt (1971), as a compatibilist, explains free will decisions by higher order volitions intervening on first order volitions. Fischer (1994) gives a similar explanation by the distinction of guidance control and regulatory control, in which regulative control similar to higher order volitions supervises and controls free will decisions.

The discussion on determinism by compatibilists and incompatibilists tries to find a theoretical model which could adequately explain the free will phenomenon. However, free will remains an experience reality in human consciousness. A theoretical model can be more or less adapted for a correct description of the everyday experience of free will. One theoretical model is based on the definitions that determinism is a chain of cause-to-effect interactions and that "free" is necessarily undetermined. Thus, free will can only be conceived as an interruption of the chain of deterministic events, which corresponds to indeterminism.

When free will is placed into its context as an experience in consciousness, the conceptions of "determined" and of "free" may have different interpretations, which are associated to more complex theoretical models. The simplest model for determinism is a chain of uninterrupted cause-to-effect events, which could be analogous to a clock mechanism. Nevertheless, in biology and psychology, determinism would be much more complex and does not correspond to such an oversimplified model. It would more closely resemble a network instead of a chain and show multiple and simultaneously interacting causes for only one effect. An analogous example could be the interaction of a torrent on a kayak in white-water rafting, where multiple currents simultaneously push the kayak into different directions. In the chain model of determinism, individual causes can easily be distinguished, whereas in the white-water rafting example, individual causes are almost indistinguishable in the complex interactions of the water currents. The model of chain determinism provides total information on all individual causes, whereas the more complex network determinism shows more statistical information with lacking information on individual causes, similar to biological events. Such network determinism would be more adapted to explain the experience of the free will phenomenon.

There still remains a major fundamental problem if a simple theoretical model can totally explain a complex experience phenomenon in consciousness. If on a theoretical level, the definition can be "free is undetermined", at the higher order complexity of consciousness, the same definition could be simply interpreted as "free is unconscious of being determined" since many causes are dependent on the underlying unconsciousness. In the free will discussion, consciousness is often considered as one autonomous unit and not as the emerging part of an iceberg, which includes the more important part of unconsciousness in which biological functions such as hormones induce vague motivations emerging in consciousness. If determinism is not directly accessible in consciousness, it may find its roots in the unconsciousness. In consciousness, there can be a feeling of "free" from determinism due to the lacking information on determinism in unconsciousness,

which was only detected after long research efforts in biology. Lacking information concerns three kinds of unconscious determinism: the unconscious future due to uncertain sequences of events, the unconscious past with effects emerging from biological functions in the unconsciousness and the present with an unconscious complexity of events. Therefore, there is a predominance of indeterminism instead of determinism in consciousness. This seems to be in agreement with Kotchoubey (2010) that determinism may be unconscious and only become conscious in the future. "Such movements [action plans] are free because they are determined not by their environmental conditions but by their future result" (103). Thereby, such actions are considered as free in the present but determined in the future.

At the level of the experience reality of consciousness, "free" can be defined as "unconscious of being determined". This means that the person has a true feeling of freedom and this feeling is not an illusion since it reflects personal reality as it is experienced. At a deeper level, being called universal reality and including consciousness as well as the whole content of unconsciousness, free will could be considered as "determined", and then indeed, becomes an illusion (Van Inwagen 2008). However, this deeper level of universal reality is a hypothetic concept and corresponds to the invention of Laplace's demon (first published in 1814) possessing complete knowledge of every molecule in the whole universe (Laplace 4).

What is the reason of the experienced freedom of free will? The voluntary act in the free will phenomenon, which gives the impression that we are the cause of our decision, is the impetus for the realisation of the selected alternative during the last decision phase. Free will could then be defined as the choice for the personally dominant motivation, which stands in contrasts to "unfree", when the choice of a non-dominant motivation is imposed from the exterior or interior. Since we would never decide against our dominating personal motivations as long as we are free, we are dependent on their roots in unconsciousness, thus our free will is influenced by determinism indirectly.

Free will definitions are entirely dependent on the corresponding reference level, which may be the experience reality of consciousness or the hypothetic universal reality of Laplace's demon. The dependence on a reference level shows the relativity of free will concepts. They cannot be defined as one unique ontological entity independent from a reference level since such definitions would be incomplete. The conscious experience reality does not take determinism into account in the unconsciousness, and the hypothetic universal reality does not take into account the experienced feeling of freedom in consciousness. What would be the more comprehensible reference level? The conscious experience reality is certainly the more proximate reference level for human understanding since it is accessible to everybody, whereas the hypothetic universal reality of Laplace's demon world is the more distant reference level—a hypothetical less accessible reality for everybody.

What could be a reliable free will definition, the reduction of conscious experience reality to a universal reality of the Laplace's demon world, or a description of phenomena such as they are experienced by everybody in consciousness? The essential message here is the relativity of any free will concept, since the meaning of the word "free" changes with the reference frame, i.e., "free" as "unconscious of being determined" and "free" as "undetermined". This means that free will cannot be defined as one unique metaphysical entity, but must be considered independently with respect to two reference frames—the first person's experience reality and Laplace's demon reality. One reference frame alone is incomplete since it could not cover the whole free will reality, which is "free" in experience reality and "unfree" in Laplace's demon reality. The relativity concept of free will could be a compromise for considering compatibilism and incompatibilism together as two different aspects of the same phenomenon. Therefore, both reference frames should be considered with equal values to

overcome incompleteness of each reference frame alone. Considering free will as an illusion is the view point from only one reference frame—the Laplace's demon world—and thereby, neglecting everybody's free will experience. Is experience reality less valuable than a hypothetic reflexion reality? Together, both reference frames are complementary and describe the complete free will phenomenon. Relativity of the free will concept avoids the contradiction between "free" and "unfree" for the same phenomenon by allowing the direct experience of "free" in the reference frame of consciousness, compatible with ignorance indeterminism, and the consideration of "unfree" in the reference frame of unconsciousness, compatible with determinism.

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