

[Essay]

## Human Freedom and Free Will Necessary Illusions

Ben G. Yacobi<sup>\*</sup>

### **Abstract**

No absolute or complete freedom and free will exist, as they are constrained by both internal and external factors, such as the limits of human physiology and cognition, the physical laws, and the limitations imposed on human life by society and culture. Nevertheless, the concepts of freedom and free will are necessary for humans not only for having some purpose and meaning in life, but also because without them human life would be an unbearable ordeal.

Every human life is a story. The important question is, how much of it is written by an individual? Two related concepts are freedom and free will. The concept of free will is one of the basic elements of human life and experience. The issue is whether one is free to make choices independent of external factors or whether genetics, prior conditioning, and preceding events and conditions causally determine one's choices and actions.

There is an undeniable perception, or perhaps illusion, that human beings have free will and choice, and that they cause their own free actions. This perception is ingrained in the human experience – from mundane choices, such as what to wear or eat, to choices that influence the direction of one's life. The future appears to be open for free will and choice, and one can guide the events in life in the desired direction. Whether real or not, human free will provides an important element in one's daily life and outlook. If free will were demonstrated to be an illusion, it would indicate that individuals are not responsible for their actions. This would have important implications for society, as the concept of free will is the central aspect in matters of moral responsibility, politics, and law.

In general terms, one can state that an individual has free will if one can choose between different alternatives, provided that the cause of the choice is attributed to the individual and not to external sources. Thus, free will can be

---

<sup>\*</sup> B.G. Yacobi is the author or co-author of several books and numerous articles on physics, as well as of a number of essays on philosophy. Email: b.yacobi[a]utoronto.ca.

defined as the ability of individuals to make decisions about their actions and choices that are not determined or constrained by external factors. This requires distinguishing between internal and external sources of choice, as well as between those that one is consciously aware of and those that are beyond one's conscious awareness. A more specific definition can be expressed as the ability of individuals to control their behavior in relation to moral responsibility. As the world has a strong influence on human behavior, the issue of free will is complex and open to different interpretations. However, freedom and free will are human constructs, and as such they have no reality independent of minds.

The origins and early ideas of the notion of free will, which has occupied numerous thinkers throughout the centuries, can be traced to the ancient Greek philosophers. The range of views, both for and against free will, is wide and diverse. In the absence of sufficient understanding of the human brain, free will was considered a metaphysical concept. Currently, decision-making and free will are associated with physical and neurochemical processes in the brain. In this context, decision-making is a process, not an instantaneous event.

Every definition of free will is invariably ambiguous, as it is incomplete. The ambiguous nature of the definition of many human-constructed concepts, such as happiness and freedom, is the recurring problem. In the absence of a comprehensive and detailed definition of free will, one may instead ask whether complete free will is possible. This immediately rejects a binary answer, yes or no, and allows some conditions and provisions. This would invalidate the possibility of free will based on one's imagination. One can only choose within the limits of the possible. And although it appears that one can will oneself into a specific action, one nevertheless cannot will oneself to fly or to be happy or to have any specific experience that comes to mind, as there are physical and cognitive constraints. There are also cognitive ambiguities that may not allow the full understanding of the motives of human aspirations and actions. Free will cannot be truly isolated from the environmental and societal influences, which may often be hidden or may not be clearly understood. Thus, it is not certain to what extent one's actions are independent of the outside world.

One can in principle claim that human beings can exercise some free choice that is constrained by natural laws and societal obligations. However, even the limited choice may not be a clear manifestation of free will that in reality may be formed unconsciously. The decisions may appear as acts of free will, but they may be anchored to an individual's prior conditioning hidden from conscious

awareness. But, even if one transcends the prior conditioning or programming, there are still other limits to human freedom and free will. Thus, one of the key questions is to what extent decisions and choices are governed by the conscious and unconscious mind. Some scientists suggest that decisions and choices originate from the unconscious mind, and the appearance of those as free will based on the conscious mind is an illusion. This is because free will can only relate to the conscious decisions and choices, and not to the unconscious. This is important in the context of moral responsibility, since such decisions and choices are made with the understanding that they originate in the mind that is aware of their possible consequences.

Immanuel Kant (1724–1804) linked the moral law to reason and free will to acting in accordance with reason. According to Kant, free will is required to make sense of morality and moral responsibility. In the context of neurochemical processes in the brain, the question remains how the concept of reason is linked with these processes. Nevertheless, recent emphasis in the free will debates has shifted to moral responsibility.

There are several traditional views of free will. These include determinism, compatibilism, and libertarianism, and several other “isms” that are closely related to these views. Disagreements and contradictions about these views can be expected because of the ambiguity of propositions and definitions, and the insufficient evidence to support individual claims. The central issue of free will is how to resolve its relationship with determinism based on a cause-and-effect chain of events, and what is the extent to which individuals have control over their decisions and actions.

According to determinism, since causal laws govern everything in the universe, human actions are predetermined, and thus free will is incompatible with determinism. According to compatibilism, free will and determinism are compatible, or in other words, one can be free and determined at the same time. A variation of compatibilism is semicompatibilism, which argues that moral responsibility is compatible with determinism; but at the same time, this view is agnostic about the compatibility of free will and determinism. Incompatibilism claims that the notion of free will is incompatible with determinism. According to libertarianism, one has free will and true moral responsibility for one’s actions entails the incompatibility between free will and causal determinism. According to illusionism, free will does not exist; it is an illusion. Although some illusionists advocate general acceptance of free will as an illusion, others support the ideas of

compatibilism, semicompatibilism and moral responsibility.

Advances in neuroscience contribute to the debate on free will. The main interest is in demonstrating some sort of correlation between the neural processes in the brain and expressions of free will. The experiments on neural activity by Benjamin Libet (1916-2007) used EEG (electroencephalography) that measures electrical activity in the brain related to voltage fluctuations due to ionic current in the neurons. Such experiments are based on measuring the “readiness potential” (the rising part of EEG signal related to brain activity that precedes a voluntary act) using electrodes and reporting by the subjects of the study of their conscious decision. Libet observed from his experiments that the rise of the readiness potential precedes the conscious awareness of the decision to act. This, according to Libet, was an indication that the decision was initiated unconsciously. Although Libet noted that the conscious mind could nevertheless override the result, allowing the possibility of free will, it is frequently argued that Libet’s experiments indicate that the concept of free will is an illusion. Later experiments also employed fMRI (functional magnetic resonance imaging). Based on Libet’s studies, it is possible that free will may not initiate action but may control it. However, these and other similar results and their interpretations remain controversial and no clear conclusions about free will have been reached. The observation of some patterns of neural activity prior to a specific conscious awareness does not imply that the decision to act has been already made. Also, the analysis of the patterns of activity of a small group of neurons alone may not be sufficient for describing the more complex patterns of neural activity associated with thoughts and decisions. At this stage of understanding of the human brain, and in the absence of definitive experimental evidence, one cannot claim with absolute certainty that free will, whatever meaning one assigns to the term, is an illusion. The distinction between illusion and reality becomes blurred by the complexities of the human brain and its neural processes.

Human freedom and free will are limited by natural laws, physical and cognitive limitations, and economic and political factors beyond the individual’s control. Decisions and choices are also strongly influenced by the cultural and societal conditioning, environmental factors, level of education, family circumstances, finances, state of health, as well as by the individual’s values and morals that may determine what one thinks, or how one perceives and interprets things, and how one makes choices. Other factors that can influence one’s choices include past experiences and decisions, and cognitive ambiguities and

unconscious motivations, as well as social influences, which may prevent the full understanding of human actions. Free will cannot be isolated from the environmental influences, which may be hidden or may not be clearly understood. Considering all these factors, the range of choices in life is quite narrow; some choices appear better than others and some are outright undesirable. Thus, there cannot be absolute freedom and free will. However, the inability to determine the limits and boundaries of freedom and free will can lead to the illusory perception that they are boundless. The relatively small choices that individuals make under the influence of all these various factors provide the background for distorted perceptions of the concepts of freedom and free will, and for illusions that these concepts are natural and universal. By exercising some random choices on various issues, one may get a misleading impression that those choices are generally applicable.

Most likely, one can never determine the exact molecular or neural mechanism of human cognition, as the brain is a collection of billions of highly interconnected neurons (neural network), with cognition being related to complex neural dynamics that is impossible to know completely. This is because of the complex structure of the billions of neurons, with each neuron being connected to thousands of other neurons through synapses, in the brain organized in a hierarchical structure. It would be impossible to reproduce or analyze all neural activities involved in the thought process preceding the decision and the final choice, as it would involve not only the complete structure of the brain, but also its dynamics and mechanisms.

The brain can be viewed as a complex nonlinear dynamic system with numerous diverse interacting elements that produce the emergent behaviors of the system as a whole, such as consciousness and thought. In such dynamic systems, the degree of complexity is related to the extent of interconnectivity of its parts, and emergent behaviors are not reducible to their constituent elements. In other words, thoughts are not reducible to neural states.

An important attribute of complex systems is the unpredictability that may arise from their nonlinear character. The complex and nonlinear nature of neural networks imposes limits on specific predictions (in linear processes, the output is directly proportional to the input, whereas in nonlinear processes, the output is not proportional to the input). In nonlinear systems, various interrelated elements of the system influence each other in a reciprocal manner in an intricate set of connections with feedback loops. The whole is a highly interconnected and

complex system with many variables and unpredictable interactions that cannot be reduced to simple relations. One cannot completely understand the complex whole, and at best one can only choose some of the interactions within it. The dynamic complexity of the whole system makes the elucidation of cause-effect relationships in such a system a very difficult problem to solve.

Physical and neurochemical processes in the brain mediate an individual's decisions and choices. The complexity of interactions between the billions of neurons in the brain is immeasurable, and the dynamics of these interactions is constantly changing in response to both external and internal stimuli, creating new thoughts and choices. The incalculable amount of information from the outside world, past memories and experiences, and the range of choices available are in constant flux, changing within the context of each moment. These are entangled with other causes that are invisible to conscious awareness, resulting in unpredictability of human behavior. Given the vast number of factors affecting individual decisions, it is impractical to trace them to their sources or causes with absolute certainty. There are multiple levels of causation, including molecular mechanisms, and biological and societal processes.

The crucial question is whether it is possible to account for all possible internal and external factors, and to determine dominant factors influencing individual thoughts and actions, which are constantly changing against the background of complex interactions with the outside world. Due to the complexity of interactions between a myriad of possible causes, some of which are hidden in the background of consciousness, one may never arrive at a definite conclusion about the nature of free will. Another important question is whether it would be possible to experimentally determine to what extent an individual is the sole originator of a choice or action and what is the extent of influences from the outside sources. As one cannot predict the emergent properties and manifestations of truly complex systems, it may not be possible to relate free will to any specific source or cause. The unpredictability of human behavior and the seeming lack of causality could be perceived as free will.

One can never predict the future or future behavior with certainty, as not all the variables about the world and self are known or knowable. The perceptions and thoughts have no permanence, as they are constantly fleeting. Thus, as the future is never certain, one can develop a perception of having freedom of choice and free will. The fundamental difficulty with any choice made is that it cannot be undone; and any specific choice made leads to other choices that cannot be

undone either.

In the end, no absolute or complete freedom and free will exist, as they are constrained by both internal and external factors. These include the limits of human physiology and cognition, the physical laws, the randomness of processes in nature, and the limitations imposed on human life by society and culture. The important issue is not what are the degrees of human freedom and free will, but whether one can remain human without these two notions. The concepts of freedom and free will are necessary for humans not only for having some purpose and meaning in life, but also because without them human life would be an unbearable ordeal.

Most things in life reach their natural end. In philosophy and science, however, disagreements never end due to the limits of human understanding, the ambiguity of definitions and concepts, and insufficient evidence. The debate on free will may never end, and perhaps some ambiguity about it is preferable to the certainty that free will is an illusion, as this ambiguity leaves the question open to debate. It leaves some hope that is vital for human life.