Critical review of do we have free will

Section one – Concisely describe the main arguments and evidence presented by the paper (400)

Libet defines free will as an involuntary act that is not affected by any external control and makes the individual feel as if he/she is in control of it. With this definition in mind Libet went on to explore the notion of whether individuals have free will or not using an experimental approach.

Libet carried out an experiment similar to one carried out by Kornhuber & Deecke in 1965. Participants were required to voluntary flick their wrist whenever they felt the urge to so. However, unlike the original experiment by Kornhuber & Deecke (1965) in which participants had a time constraint of thirty seconds in which to perform the act, Libet gave no time constraint to his participants to flick their wrist. In addition to recording participant's electrical charges in their brain (readiness potential, RP) and muscle activity, Libet also had participants report a clock time. This was done using a special clock with a rotating spot of light on its face. Participants were asked to report the position of the light on the clock when they first became aware of the wish to flick their wrist.

The experiment produced some rather interesting results. The neural activity measured in the participants brains showed that the readiness potential began 550 milli-seconds (ms) before the actual voluntary act took place. By having participants report the position of the spot of light, Libet showed that participants only became aware of an intention to act 350-400 ms after the readiness potential and 200 ms before the actual motor act. Libet argued

that the process to carry out a motor act is initiated unconsciously in the brain, and therefore without the individual being aware of it.

If the unconscious mind has already decided to carry out an act before the conscious mind is aware of it, then this leaves us to question how much free will an individual has. Libet suggested that although the conscious mind does not make the first movement of a voluntary act, it still has the power to ‘ veto’ the action, i. e. the conscious mind is in control of the outcome of the action.

Section two – Evaluate the strengths and weaknesses of the arguments and evidence presented by the paper (500)

Libet has produced some rather interesting results which, have not only generated further questions into the subject of free will but, also have attracted criticism for various reasons. Firstly Libet’s use of methodology is questionable. Zhu (1999) has argued that participants in Libet’s experiment were asked to perform an act when they felt the urge to do but in actual fact this was not the case; participants had agreed to follow the instructions given by the experimenter (to perform the act spontaneously at some point during the experiment), therefore `only making only the timing of the act spontaneous as the act is consciously decided by the participant when agreeing to the instructions given from the experimenter.

The reliability of Libet’s results is also questionable as his method to obtain the participant’s first acknowledgement of their wish to flick their wrist was unreliable. This flaw was further examined by Danquah et al. (2008). A replication study was conducted and participant’s were required to face a

clock on the wall (similar to that in Libet's experiment) and were asked to report the exact time that they were first represented with three different stimuli (auditory, tactile, and visual). Results showed that the times reported by the participants were not only inaccurate but they were also significantly different. Danaquah et al concluded that if the self report method of reporting clock times was unreliable then Libet's method and results also need to be questioned.

In 1990 Keller and Heckhausen conducted a similar experiment to Libet's. However, because their experiment was much stricter than Libet's they were able eliminate any of the criticism which came with the original experiment conducted by Libet. Not only did Keller and Heckhausen find similar results to those results found by Libet's but, they also found that just like consciousness bodily movements showed readiness potential the unconscious bodily movements also showed readiness potential signals. The only difference is that the position of these signals on the brain is in a different location.

Soon et al (2008) conducted an experiment, whose findings also supported those found by Libet. Soon et al had a group of participants who were asked to press a button with either their left hand or right hand and also to remember the time at which they came to decide they wanted to press the button. Soon et al. used fMRI scanners to record the brain activity and found that the signals in the brain that were present up to seven seconds before the participant had decided which hand to use to press the button, could in fact be used to help predict the decision.

Section 3 – Summarise the ways in which the paper may contribute to a broad understanding of the nature of human consciousness and/or mental health issues (100)

Although Libet's results are very interesting they are also potentially dangerous to humans. For example, Libet has argued that all bodily movements are initiated unconsciously and can only be ' vetoed' by the conscious but, one is then able to question to what extent is this ' vetoed' action controlled by the unconscious mind. This is slightly worrying as responsibility of criminal behaviour and acts could be shifted from the individual as they are not aware of the act. Libet's results do not only question our on belief about free will but they also make us question whether or not we are really in control of our own actions.

References

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Critical Review Two

Critical Review of the Article " Imagery, Creativity, and Emergent Structure?" By Ronald A. Finke (1996)

Section one – Concisely describe the main arguments and evidence presented by the paper (400)

Robert Finke paper looks at three key issues. The first reviews past creative imagery studies. The second looks at differentiating between creative imagery that demonstrates conscious, deliberate control and those that do not. The third contrasts intentional, structured aspects of creative thinking with spontaneous, unstructured aspects.

It has long been known that by using mental imagery, individuals are able to retrieve details that they thought they originally not remembered (Pinker & Finke, 1980). Through experiment the discovery of emergent structures in images was found by Finke, Pinker and Farah (1989). Participants were required to letters or numbers and then report any emergent features that were visible. It was concluded that participants were not generally aware of the emergent patterns in images until they consciously explored the images.

Finke (1990) developed an experiment to explore creative inventions using mental synthesis of visualised forms. Participants were given three shapes and were asked to combine them together to make an interesting object or shape. The size of the shape could be altered but all three shapes had to be part of the final product (pre-inventive form). Participants were then asked to

explain their forms in terms of a given category. Judges then rated each participant for their originality and practicality of their forms. If participants scored high in both factors then their object was defined as being a ‘ creative invention’. Results show that subjects who were given the category before they invented their forms produced not only more conventional products but also were similar to existing products in that category. Therefore a higher percentage of creative inventions came from participants who were not aware of the category before making their forms.

Finke then goes on to discuss how his Genoplore model of cognition links into pre-inventive forms and emergent structures. Individuals first create pre-inventive forms, known as the generative phase. They then explore various interpretations of the forms, known as the explanatory phase. During either phase constraints can be imposed on the final product (Finke, Ward & Smith, 1992). The generative phase tends to be conscious and controlled. However, in dreams, the forms arise in an uncontrolled manner. The explanatory phase tends is usually conscious but some aspects of it may occur below the level of conscious awareness.

Ward (1994) showed that structuring tendencies are not always intentional and can occur without conscious awareness. A similar concept to this is design fixation which was experimentally demonstrated (Ward, Smith & Schumacher, 1993). These studies show that creative imagination is structured by prior knowledge and is not done so deliberately, but rather unconsciously. However, not all thinking is structured. For example, Finke and Bettle (1996) showed that ‘ chaotic thinkers’ (individuals who display spontaneous and unstructured qualities) generally have more creative and

original ideas. Finke ends his paper suggesting that a balance between the two types of creativity, structured and unstructured, is most ideal. He suggests that n order to achieve this creative realism one would need to posses two key traits; structural connectedness and imaginative divergence.

Section two – Evaluate the strengths and weaknesses of the arguments and evidence presented by the paper (500)

Finke has produced some rather interesting theories, which have not only generated further interest into the subject of creative imagery, but have also created some questions.

Firstly Finke's use of methodology is questionable. In the study which, he conducted in 1990, the participants' designs were judged for originality and practicality by a panel of judges. In his paper Finke does not mention who the judges were and therefore one could assume that designs labelled as ' creative inventions' could have been chosen subjectively.

A second criticism, also found in the above study, which can be seen in his experiment procedure, is that when participants were required to explain their form in terms of the given category they could have simply used their knowledge about existing objects, i. e. using structured thinking. With this mind it is difficult to say for certain that the participants displayed pure creativity.

In addition to this his methodology in previous experiments can also be questioned in a similar manner. Finke argues that many of the processes involved in creative cognition occur below an individual's level of

consciousness. However, in a study carried out by Finke, Pinker, and Farah in 1989 it was reported that participants “ were unaware of the emergent patterns that were contained in their images until after they had consciously inspected their images” (Finke, 1996). This suggests that the patterns participants saw could have been due to structured imagination.

Finke argues that creative realism is the ideal balance between structured and unstructured creativity. He suggests that individuals who are able to have this balance, displaying both structured correctness and imaginative divergence are highly creative individuals. However, there are some groups of individuals who do not display this balance and yet are still very highly creative individuals; individuals with mental health illness, mainly individuals with schizophrenic traits (Nettle, 2005) and individuals with bipolar disorder (Simeonova, 2005).

Czernecka and Szymura (2008) study results showed that alexithymic individuals displayed low levels of creativity due to not being able to perceive their own emotional states. As alexithymic individuals scored low on openness to experience (therefore being more conventional) on the Big Five Personality questionnaire, this might explain help explain why they have low levels of creativity. This finding helps support Fink’s suggestion of ordered thinkers as many of their inventions are based on existing products and therefore not being very creative.

Section 3 – Summarise the ways in which the paper may contribute to a broad understanding of the nature of human consciousness and/or mental health issues (100)

Finke has produced some rather fascinating theories that in turn have generated further questions and developed further theories. Finke’s argument about structured is of real interest as it suggests that individuals may just produce new inventions which could just be based on old designs and ideas. If this is the case, then new ideas are not created, merely old ones remembered. It is also clear that the cognitive processes involved in creative thinking are not all conscious and some may be unconscious. Although it could be concluded that further research into this area is required one may argue that if the cognitive processes involved in creative thinking are both conscious and unconscious then it may be difficult to get any true result about creative thinking as individuals may simply use structured thinking unconsciously and therefore not really be creative.