

Understanding human behaviour through reductionist approach



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“ The only way to understand Human Behaviour is to take a Reductionist approach.” Critically discuss with reference to relevant seminal and contemporary literature in psychology.

Reductionism can be defined as being the idea that a complex system, such as human behaviour, is nothing more than the sum of its parts and that a description of the system can be reduced to descriptions of the individual components. Many of the main approaches in psychology tend to take a reductionist approach when trying to explain their understanding of human behaviour, including the cognitive approach which uses machine mechanism (using the analogy of machines and their most simple components) to explain human behaviour, such as Berkowitz (1993). The behaviourist approach also tends to be reductionist in how it tries to explain human behaviour, usually reducing behaviour down to simply environmental factors such as reinforcement and punishment. Perhaps the most reductionist approach in psychology however is the biological approach. The biological approach takes a more scientific approach to explaining human behaviour and puts it mainly down to our biology, for example, Lacourse, Boivin, Brendgen et al. (2014) explained that the results from their research suggested that a toddler’s aggression is strongly associated with genetic factors.

Many psychologists would agree that “ The only way to understand Human Behaviour is to take a Reductionist approach” for example, Hull (2002) who stated that “ Reductionism at its most extreme asserts that the only level worth investigating is the lowest technologically feasible level. All else is a waste of time.” Given the fact that scientists who use more reductionist

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approaches to understanding human behaviour tend to get the most grant money for their research, publish the most papers and also tend to make the most scientific advances within psychology, this may be true. However, other psychologists believe that the lower states involved in reductionism do not capture the necessary coherence of the rationalisation relation at the higher level and are known as being anti-reductionist.

Biological psychologists explain human behaviour by trying to relate it to the functioning of the brain and the nervous system, relating it to the role of genetic influences and also by putting it down to chemical processes in the brain. These are all reductionist ways to explaining human behaviour due to the fact that, apart from physics, they are the lowest level of explaining behaviour. A prime example of a reductionist explanation to understanding human behaviour such as aggression is through genetics. This type of biological reductionism reduces aggressive behaviour in an individual down to the role of genetic influence, for example Dilalla (2002) concluded from her review on the role of genetics on aggression that there is a “growing body of evidence on the genetic effects on aggression” with “the majority of twin and adoption studies on antisocial behaviour in children suggest that genetic effects are important influences” suggesting that aggressive behaviour is mainly due to the genetic make-up of an individual. This explanation of aggressive human behaviour is solely reductionist and fails to take into account any environmental and cultural factors. The social approach to psychology however, would explain this behaviour through “The Social Learning Theory” by Bandura (1978), putting aggressive behaviour of a child down to factors such as imitation. Bushman & Huesmann (2006)

explored aggression in both children and adults, and found that exposure to violence led to participants becoming more aggressive, suggesting that human behaviour such as aggression can be adopted through imitation, leading one to believe that reductionist approaches to human behaviour, such as the biological approach isn't taking every factor into account that could contribute towards an individual's behaviour.

Reducing human behaviour down to lower levels of psychology that can be studied is useful in trying to understand how things work. Poldrack & Wagner (2008) used Atkinson & Shiffrin's (1968) multi-store model of memory in order to assess long-term and short-term memory. This cognitive approach to understanding human behaviour, suggested that remembering information over either the long-term or short-term was due to how we process this information internally. Reducing this behaviour down to a simple component of the individual means that, for example if an individual has long-term memory loss, it is easier to target one specific part of the brain responsible for this, thus easier to treat. However, even though this is a useful aspect of reductionist explanations of human behaviour, some psychologists, such as Hull, would argue that these explanations offer only a simple solution to a much more complicated problem. Depression, for example, according to the biological approach should be treated with antidepressants as biological psychologists such as Carlson (2005) believe that depression is due to neurotransmitters in the brain. However, social psychologists such as Beattie (2005), who examined the social causes of depression, would say that this is overlooking the real problem which could be issues such as problems within the family. This is a fundamental problem

with the reductionist approach to understanding human behaviour; it tends to ignore social and environmental factors that may also contribute towards behaviour and hence when it comes to applying reductionist approaches to everyday life and having implications for human behaviour, the treatments may not be as reliable as they could be.

Although there are arguments for “ The only way to understand Human Behaviour is to take a Reductionist approach” there are a lot more anti-reductionist arguments. Anti-reductionist psychologists such as Hull & Regenmortel (2002) refer to reductionism in explaining human behaviour as “ as successful as Reductionism has been, it is seriously inadequate and must be supplemented with a more holistic science.” Emotion, for example, is ignored by reductionist explanations due to the fact that it is seen as impossible that an individual’s emotions can be explained through lower levels of psychology, such as neurotransmitters. Thus, factors such as emotion can only be truly explained by less reductionist approaches such as an individual is happy due to the environment that surrounds them, not due to biological factors.

A further approach to understanding human behaviour is taking into account the role of the environment. Reductionist biological approaches do not consider the environment when explaining human behaviour, however there is a lot of research suggesting that although an individual is born with certain biological traits, such as genes, environmental factors, for example an individual’s upbringing and people they are exposed to predominately shapes an individual’s behaviour further. However, taking an environmental approach to understanding human behaviour is also reductionist, but <https://assignbuster.com/understanding-human-behaviour-through-reductionist-approach/>

psychologists specialising in this area such as Brent are starting to integrate the small parts into the whole. In 1995, Brent assessed risk factors for adolescent suicide and suicidal behaviour and stressed the importance of environmental factors such as family, as well as biological factors on these risk factors. Taking a more holistic approach like Brent (2005) instead of a reductionist approach to understanding human behaviour tends to take many factors into account instead of just reducing an explanation down to its simplest form, thus can lead people to believe that a more holistic approach to understanding human behaviour is a lot more valid and reliable as, for example, when treating an individual of an illness such as depression, not only will the biological aspect of the illness be treated with anti-depressants, but the social aspect of the illness can also be treated with a form of counselling.

Using a reductionist approach to understanding human behaviour can be seen to be not so useful when trying to explain individual factors due to the fact that reductionist explanations, although they are reduced to the lowest levels of psychology and thus are in the simplest form, generalise behaviour to a target population. Maguire, Gadian, Johnsrude et al. (2000) found that the amount of time spent as a London taxi driver positively correlated with the volume in the posterior hippocampus and from this, suggested that "the posterior hippocampus stores a spatial representation of the environment and can expand regionally to accommodate." Here, Maguire et al (2000) have generalised their study of male, London taxi drivers to the population as a whole. Every individual is unique and so it would not be right to

generalise these findings to everyone as the same behaviour in people may be due to different explanations, such as our biology and the environment.

In conclusion reductionist approaches to understanding human behaviour can be seen to have led to further scientific advances within psychology due to the fact that reductionist approaches make it easier to find the cause of human behaviour, meaning that it is then easier to treat, by reducing the explanation down to its simplest form. However, as discussed, there are many problems and critiques of the reductionist approach to understanding human behaviour, with the main problem being that the reductionist approaches leave out vital factors such as the environment and social factors when explaining behaviour, thus by using a reductionist explanation it does not give a full explanation for a complex subject such as human behaviour, whereas taking a more holistic approach such as a humanist approach, takes many different factors into account. Therefore, reductionist explanations, is limited when it comes to understanding and explaining human behaviour.

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