

Psychology is defined as the study of mind, emotion and behaviour. One major perspective within psychology is known as cognitive psychology, which is primarily concerned with the explanation of thought processes through the development of theoretical mental systems. Cognitivism is somewhat broad in its approaches to psychology and only linked in its goal to create hypothetical mental structures to explain behaviour (“History & Scope Of Psychology”).

The exact origins of cognitivism are difficult to pinpoint. Ideas that make up the perspective have been traced back to ancient Greece; however it is in modern times that it has developed to its prominent status of today. This period of time is referred to as the “cognitive revolution” of the 1960’s, led by the work of those such as Piaget and Chomsky. Prior to this revolution, behaviourism (the study of cause and effect; environmental factors and their effect upon behaviour) was considered to be the dominant school of thought in psychology; however cognitivism soon emerged as the new dominant perspective. (“The History & Scope of Psychology”). It was in the 1967 publication of *Cognitive Psychology* by Neisser that a name was coined for the rising field of psychological science, and an outline of major research-to-date and significant concepts was offered. (Maclin & Solso, 2000)

The goals of cognitivism are to attempt to understand the way in which the many processes of our minds work, through use of the scientific research method. It emphasises the importance of the mind in behaviour, something that was virtually disregarded in perspectives such as behaviourism. Focus is placed upon thinking, memory, perception, attention, pattern recognition, consciousness, decision-making, language and attention. It aims to understand the *mental accompaniment of everyday perceptions and actions* (Barber, 1988). By devising mental structures of mental functions and the way in which information is processed, it could then be possible to explain observable behaviour.

The most significant concept of cognitivism is the computer or information processor metaphor. It underlies the majority of theoretical and empirical research in the field (Frensch, 2001). This analogy related the mind to a computer with sequences of computational processes. *A Mathematical Theory of Communication* was an influential paper written by Claude Shannon (published in 1948) which first presented the idea that to be communicated; information had to travel via signals through a sequence of stages and transformations. Such theories gave a substantially more complicated view of human behaviour, especially in comparison to simpler stimulus-response theories formed in behaviourism, by adding the important dimension of the mind. This concept gave a mechanical view of the human mind and behaviour, implying that the brain works similarly to piece of computer software programmed to perform pre-defined functions.

Cognitivism also introduced the concept of an intervening process between stimuli and responses, and that associative relations were not as significant in learning as the learning of concepts and categories (Bruner, Goodnow & Austin, 1956). It was further stated that stimulus value can actually assessed by the brain. This was shown in experiments by Kamin (1969) who found that rats noticed and were conditioned to anticipate an electric shock from a certain cue, however in other experiments chose to ignore a different cue. Other concepts in cognitivism tend to be extremely specific, especially in comparison to the information processing analogy, and do not encompass all areas of the broad field.

There many influential cognitivists with ideas that helped shape cognitive psychology as it is understood today. William Wundt, a psychologist during the 1870's, is often heralded as the founder of psychological science as the author of the first psychology textbook and founder of the first university-based psychology laboratory. (History & Scope of Psychology). His opinions and work could classify him as a cognitivist. He also developed the first methods of scientific research to analyse perception and sensations. Claude Shannon's publications (1948)

were the birth of information processing theories. Neisser (1976) stated that the basis of the cognitive processes is perception, which acts as a building block for all cognitive thoughts. In addition, he was responsible for first defining cognitivism as a branch of psychology. Linguist Noam Chomsky's publications, *Syntactic Structures* (1957) and a review of Skinner's *Verbal Behaviour* (1959) were considered to be ground-breaking, playing a significance role in the rise of psycholinguistics and the decline in popularity of Behaviourism. Chomsky's argument was that language and its acquisition were formed on a basis of pre-existing mental rules, structures and syntactical abilities, rather than learnt solely by a stimulus-response system. Jean Piaget, a Swiss psychologist, conducted research and found that that children of different ages have dramatically differing abilities to understand concepts and reason, and theorised that there must be a series of stages of development that humans go through, which he named the mental 'schemes'. He went further to state humans experienced universally the same sequence of stages, albeit at slightly different ages. Another contributor was Donald Broadbent who made a distinction between a short term memory and long term memory, a discovery which still underlies much research and experimentation. He created models of attention and memory and led to the development of countless models of cognitive processes, and the formation of this separate area in cognitivism. These are just a handful of the cognitivists that have made a significant impact on this area of psychology.

Since cognitive psychology is concerned with the mind and chiefly unobservable mental processes, much of cognitive psychology remains to be theory-based. (Balota & Cortese, 2000). Theories are formed and/or tested in a manner firmly rooted in the scientific approach. Experimental methods are used frequently in the field, in which independent variables are manipulated and dependent variables are measured. Within cognitive psychology, there are six main research methods which are used in conjunction with standard hypothesis testing and inferential statistics (Balota & Watson, 2000). Chronometric methods involve the calculation of the speed of certain mental functions according to reaction times. Memory methods are

techniques to measure between three separate memory aspects, such as use of memory tests.

Case studies are useful for determining specific mental operations used in various tasks. Many insightful case studies were conducted on suspected brain-injured war victims, which lead to data concerning perception, memory and language skills. Cross population studies can be effective in researching differences between the mental operations of various population groups. A fifth technique involves measuring brain activities through methods such as PET, in which scans of brain activity are conducted by injection of radioactive isotopes. Computational modelling is the mapping of possible cognitive networks and processes through computer simulations, an exciting example of the effect of technological advances upon cognitive psychology.

The theories and concepts in cognitive psychology as a whole do not have a significant impact upon the famous nature versus nurture debate. Cognitivists do not clearly favour nature or nurture; however emphasises the existence of a naturally occurring system of mind and thinking (eg. Chomsky's ideas of pre-existing linguistic capacity and syntactical skills). Piaget theories on definite stages in the mind's development, which are invariably and biologically present in all humans, is an idea that emphasises the significance of natural influences.

Cognitivism is a broad field of study, meaning it is extremely difficult to encompass every specific and diverse idea into complete explanations of behaviour (Eysenck, 1994). It's experiments are limited to studying extremely precise functions or processes of the mind. Furthermore, the fact remains that while much behaviour is observable, mental processes are not; therefore many of the cognitive concepts and theories are exceedingly difficult to concretely prove. Cognitivism gives a somewhat limiting mechanical view of human nature and behaviour. While understanding and hypothesising over the specific mental processes may be a vital step to understanding behaviour, no emphasis or consideration is placed on the influence of environmental factors upon behaviour. This leads to an incomplete method of

explaining human behaviour. Studying the specific mental accompaniments of behaviour has a limited impact on discovery of methods of which to control, treat or manipulate behaviour.

Cognitivism is considered as the dominant perspective in psychology today. This extremely broad science, with many notable contributors such as Piaget, Chomsky and Shannon, is concerned with the inner workings and processes of our mind. It is difficult to summarise each specific topic area, except to describe its aim to understand the mental accompaniment of behaviour. Through the scientific method, experiments, inferential statistics, hypothesised mental structures and theories; cognitivism provides a complex, yet mechanical, view of the mind and its relationship to behaviour. It is generally more focused on attempts to understand and interpret what accompanies behaviour, rather than the causes of behaviour or ways in which it can be manipulated. However, it fails to give a complete and thorough explanation of human behaviour, as it is specifically focused upon the mind, and is not concerned with other significant influences such as environment and culture. Nevertheless, cognitivism is a strong, imperative and fascinating branch of psychology.

**References:**

- Barber, Paul J (1988) Applied Cognitive Psychology Methuen & Co: New York.
- Balota, David A & Cortese, Michael J (2000) Cognitive Psychology: Theories in Encyclopedia of Psychology Vol 2, American Psychological Association: New York.
- Balota, David A ”& Watson, Cognitive Psychology: Research Methods in Encyclopedia of Psychology Vol2, American Psychological Association: New York
- Broadbent, D (1958) Perception and Communication. Permanon: New York
- Bruner, JS & Goodnow, JJ & Austin, G A. (1956) A Study Of Thinking. Wiley: New York
- Charles, Timothy (1995) Psychology: a course for VCE units 3 and 4. Oxford University Press: Melbourne
- Chomsky, N (1957) Syntactic Structures Mouton: Netherlands.
- Chomsky, N (1957) Review Of BF Skinner’s Verbal Behaviour
- Eysenck, Michael W (1994) Perspectives On Psychology. Lawrence Baum Associates: UK.
- Frensch, P A (2001) “Cognitive Psychology: Overview” in The International Encyclopedia of the Social & Behavioral Sciences, Vol 3. Elsevier: Oxford
- “The History and Scope Of Psychology”, Class Handout.
- Kamin, L.J (1969) Predictability, surprise, attention, and conditioning. In B.A. Campbell & R. M Church (eds), *Punishment and adverse behaviour*. Appleton Century Crofts: New York.
- Maclin, Otto H & Solso, Robert L. (2000) “Cognitive Psychology: History Of The Field” in Encyclopedia Of Psychology, Vol 2. American Psychological Association: New York.
- Neisser, U (1967) Cognitive Psychology. Appleton-Century-Crofts: New York.
- Piaget, J (1962) Play, Dreams & Imitation In Childhood. WW Norton: New York.
- Piaget, J (1970), Piaget's theory. In P. Mussen (ed) Handbook of child psychology, Vol.1. Wiley: New York.
- Ross, Suzanne L & Sharpe, Pete R. (1987) Living Psychology. Scribe Publications: Victoria
- Shannon, CE (1948) Mathematical Theory Of Communication in *Bell System Tech. J.* **27**, 379-423, 623-656
- Smith, E.E (2001) “Cognitive Psychology: History” in Encyclopedia of Social and Behavioral Sciences, Vol 3. Elsevier: Oxford

(Word Count: 1481)