

# Experiment conducted on cognitive development on date report

[Environment](#), [Disaster](#)



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## **Abstract**

The study of cognition has experienced fast growth in the last decade. This topic is elemental both to the science of psychology and to its relevance in real world predicaments. Yet there has conventionally been an enormous fissure between basic research discoveries in this area and practice in the field. Experimental Cognitive Psychology and Its Applications aspire to bridge this gap by bringing together a group of discerned experimental psychologists who show how their findings can be applied in daily life. Attention has been focused on this paper as a sub domain of cognitive psychology. It solves the problem of information overload in cognitive processing systems by selecting some information for further processing, or by managing resources applied to several sources of information simultaneously. Empirical investigation of attention has focused on how and

why attention improves performance, or how the lack of attention hinders performance. The theoretical analysis of attention has taken several major approaches to identify the mechanisms of attention: the signal-detection approach and the similarity-choice approach. This report focuses on this is of attention focusing on ability of eight participants, to undergo conditions that subject them to a cocktail party problem simulation. This paper gives a brief outlook into the cognitive psychology, shows the experiment including methodology, results and discussions in a bid to prove the hypothesis.

## **Introduction**

Cognitive psychology is the methodical exploration of human cognition, namely, all mental abilities; perception, learning, memory, thought, reason, and understanding. Similar to other sciences, the use of experiments is the major research tools in this field of psychology. Frequently, the calculations of such experiments are directly contrasted to human behavior. There are at present three major approaches in cognitive psychology: experimental, computational, and neural cognitive psychology (Philip 19).

Experimental cognitive psychology indulgences cognitive psychology as one of the natural sciences, thus, experimental techniques to examine human cognition is apparently applied. The aspects of Psychophysical reactions, response time, and eye tracking are habitually gauged in this branch of cognitive psychology. In Computational cognitive psychology, recognized mathematical and computational simulations are developed to relate to human cognition on fact of symbolic illustrations, and dynamical structures (Philip 18). Finally, neural cognitive psychology involves the use of brain

imaging and neurobiological techniques to appreciate the neural foundation of human cognition (Philip 23). These three approaches are regularly inter-linked and offer both autonomous and paired approaches in every domain of cognitive psychology. This paper focuses on the experimental cognitive psychology, in which where participants were tested on the aspect of attention.

Experimental psychology is a practical approach that includes diverse fields within psychology. Experimental psychologists have conventionally performed research, issued editorials, and taught classes on neuroscience, developmental psychology, perception, language , sensation, learning , consciousness, memory, thinking, and, attention (Sun 345). It basically involves the study of human behavior in diverse perspectives. Frequently, human participants are inculcated to execute tasks in an experimental setup. As I was done in this experiment where eight participants were subjected to some conditions, (appendix 2-4). Since the 1990s, different software packages have alleviated stimulus management and the quantity of behavior in the psychological laboratory. Aside from the calculation and measurement of response times and error rates, experimental psychologists regularly exploit survey methods prior to, throughout, and subsequent to experimental intercession and observation techniques. Experimental devises can be partitioned into three broad types: experimental, non-experimental and quasi-experimental approaches (Sun 259).

The intricacy of human behavior and overall mental procedures, the uncertainty with which they can be construed and the unconscious courses

to which they are subject gives rise to an importance on sound attitude within experimental psychology. Control of superfluous variables, reducing the prospective for experimenter bias, compensating the order of experimental missions, sufficient sample size, and the exploit of operational designations, which are both consistent and valid, and appropriate statistical scrutiny are fundamental to experimental methods in psychology. Per se, most apprentice programmes in psychology embrace mandatory courses in Research Methods and Statistics (Sun 259).

Concerning this particular experiment, the feature of cognitive psychology being investigated was attention. Attention is the cognitive process of one being selectively focused on one characteristic of the environment while disregarding other things (Sun 259). It has also been referred to as the allotment of processing resources, for instance, listening cautiously to what someone is saying while disregarding other conversations within the same room. Attention is one of the most extremely studied topics within psychology and cognitive neuroscience. It remains a key area of exploration within the field of psychology. Regions of active examination engage determining the basis of the signals that spawns attention, the consequences of these signals on the modification properties of sensory neurons, and the relationship between attention and other cognitive processes like operational memory and alertness.

## **Literature reviews**

Contemporary research on attention began with the investigation of the famous cocktail party predicament in 1953 by Colin Cherry (Philip 50). At a

cocktail party how do people choose the discussion that they are listening to and disregard the rest? This predicament is at times referred to as focused attention as antagonistic to divided attention. Collin Cherry executed a number of experiments which developed into being known as dichotic listening. Donald Broadbent and others further extended this ideology, (Philip 54). In a characteristic experiment, subjects would utilize a set of headphones to listen to two flows of words in different ears and discriminatingly concentrate to one flow. After the assignment, the experimenter would query the subjects about the substance of the unattended flow (Philip 54). Experimentations by Gray and Wedderburn and afterwards by Anne Treisman indicated assorted difficulties in Broadbent's early representation and ultimately led to the Deutsch-Norman simulation in 1968. In this simulation, no signal is sieved out, but all are processed to the aim of stimulating their stored demonstrations in memory. The summit at which attention becomes discriminating is when one of the memory illustrations is chosen for supplementary processing. At any time, only one can be picked, ensuing in the attention bottleneck (Philip 56).

This argument became branded as the early-selection vs. late-selection simulations. In the early selection models, primarily suggested by Donald Broadbent and Anne Treisman, attention attenuates dispensation in the unfocused ear before the mind can scrutinize its semantic content. In the late selection models, initially suggested by J. Anthony Deutsch and Diana Deutsch, the substance in both ears is scrutinized semantically, but the phrases in the unattended ear cannot access consciousness (Treisman). This

debate has still not been determined.

On the other hand, Anne Treisman extended the extremely significant aspect integration theory. Consistent with this representation, attention connects diverse characteristics of an object that is colour and shape into deliberately experienced wholes. Though this simulation has entertained much disparagement, it is still extensively mentioned and generated similar theories with amendment to Jeremy Wolfe's Guided Search Theory.

## **Hypothesis**

Attention is best portrayed as the continued center of cognitive resources on information while sieving and or disregarding extraneous information. It may be distinguished along with its status as overt versus covert. Overt attention is the deed of expressing sense organs towards a stimulus supply while Covert attention is the act of psychologically focusing on one of numerous probable sensory stimuli. Covert attention is reflected to be a neural process that augments the signal from a meticulous part of the sensory panorama (Treisman).

From this information, it can be deduced that this experiment hypothesis is; as an aspect of cognitive psychology, is it factual that attention entails selective concentration on one aspect of the environment while ignoring others.

## **Methodology**

A field experiment

The type of experiment done is known as a field experiment. A field experiment is an experiment that is performed in a real world stipulation. Participants were made aware of the experiment, this showed by the subsequent signing of consent forms (appendix) by the participants. After which they were subjected to a series of condition (appendix 2-4) to prove the hypothesis.

### Observation

Another method used to collect data was observation. Observation is a method of data gathering in which a qualified person watches, or walks through, the actual processing associated with a system. It is best for studying processes, Useful for studying the workflow through an office for example and could be active or passive. The participants were observed as they tackled the issue within the conditions to prove the hypothesis. The advantage of this method was it enabled the experimenter to Capture the whole event as it occurred in its natural environment.

### Participants

There were a total of eight participants, four men and four women. The participants were given consent forms to sign showing their voluntary action of consent on their part. After which they were subjected to two conditions to prove the hypothesis. In the first condition, a paper was placed in front of the participants. They were then instructed to tick next to the respective names on the paper on both rows starting with the first row, then to the second. As they did this, they were also subjected to series of mathematical questions



and instructed to answer them. the above procedure was repeated in condition two, except for the numbers were being ticked against instead.

## Results

### PARTICIPANT

### AGE

### SEX

### ORDER OF CONDITIONS

### CONDITION 1 RESPONSE TO THE NEAREST SECOND

### CONDITION 2 RESPONSE TO THE NEAREST SECOND

### MATH QUESTIONS ANSWERED CORRECTLY

### CONDITION ONE

### CONDITION TWO

## Validity of results

The data was collected from participants who were willingly consented to be part of this experiment. In addition, the experiment were done in a controlled environment with minimal outside interference. Finally, the experiment was backed by a series of literature reviews.

## **Discussion**

It is evident that the issue of attention is a sub domain of cognitive psychology. From the results above, there is a general slow response time in the answer of the questions in both conditions. The answering of the auditory mathematical questions (appendix 4) is also poor bearing in mind, the easiness of the questions. It is apparent therefore that the issue of attention plays a vital role in the experiment above. In accordance to the feature-integration theory of attention, it is suggested that attention must be directed serially to each stimulus in a display whenever conjunctions of more than one separable feature are needed to characterize or distinguish the possible objects presented. There were two features presented to these eight individuals, the ticking of colours and numbers while answering questions from the stream of information. The results were in general consistent with the hypothesis. They proffer a new set of criterion for differentiating distinguishable from integral characteristics and a new rationale for predicting which tasks will show attention limits and which will not.

## **Conclusion**

The results were consistent with the hypothesis. The hypothesis stands proved.

Consent to participate

I have been asked to participate in an experiment that investigates one aspect of cognitive psychology and give my free consent by signing this form.

I have been informed about the research and why it is taking place.

I understand that my participation in this research is voluntary.

I understand that I can withdraw from the research at any time.

I understand that my data will be anonymous.

I understand that I will be provided with a debrief after taking part in the experiment.

## **Work Cited**

Treisman, A., Feature Binding, Attention and Object Perception; London; Phil Trans R. Soc 1998.

Philip J. Benson. Behavioral and Brain Sciences 21 (1): 18-56, 1998.

Sun, R. The Cambridge Handbook of Computational Psychology New York; Cambridge University Press, 2008.