Semantic representation and left visual field bias in encoding report examples

Sociology, Communication



Psychology Report

Theories are continuously being conceived concerning the organization of the memory system. The memory system is the representative of meaning in terms of words and objects (Deacon, 467). Researcher of day consider the early models as local, in view of the information they give with the mapping of an item with a single memory node (Collins et al, 1975).

Recent studies have more concentration on semantic distribution in the sense that, individual aggregate of item features are in representation by a different node, except in the extreme cases where the attribute will map itself onto an individual node (Masson, 1995). In addition, other models add the visual aspects and the meaning of words are represented based on data derived from foveally presented stimuli. In this case, the hemispheres in the cerebral are stimulated (Chearelo, 1991).

The right and the left hemisphere of the brain play a key role in semantic memory of both visual and verbal cognition. For the visual aspects, each of these hemispheres produces an effect in presence of a stimulus. This is a guarantee by anatomical properties of the visual system, which enable selective stimulation by a visual hemifield.

In the presentation of data in the cerebral, there is a proposal in the arrangement of semantic memory in which items are represented locally in the left hemisphere and information regarding similar items is distributed across all nodes in the right hemisphere (Deacon et al,). A hypothesis exists for this ideology and suggests that items are systemically represented holistically or locally in the left hemisphere and are on the basis f distribution of features coding in the right hemisphere. Experiments continue to manipulate this aspect of priming and stimulation of the visual field. The first experiment, semantic relatedness was manipulated with no relation or related words. One experiment found no association in priming in the hemispheres when there is a lateralization of the prime and the target (Chiarello et al, 1990). In this research theory, associative links exist only among the left hemisphere representation and priming was only in prediction when words with relation were n presentation in the left hemisphere of the cerebral. There was no expectation of priming in presentation of related words in the right cerebral as there was no semantic features shared.

The other experiment was concerned with consideration of whether priming based on shared features may occur in the right hemisphere and not the right hemisphere of the cerebral. The experiment found that, there may be priming of this nature when there are sequentially adjacent words that share semantic features, even if they are categorical or associatively related (Deacon et al, 2002). In contrast, priming should not occur in the left hemisphere of the cerebral from the holistic representation and the preactivation that occurs in the associative links.

On this issue, an experiment was conducted to analyze and infer on associative relatedness. The experiment considered 8males and 7 females, who speak English as their fist language and the only language, between the ages of 18 to 49 (Deacon et al, 2002).

The results found that there is a 70% accuracy of manual responses to words chosen I the experiment. Hence, there is huge priming elicitation from the right visual field, which is the left cerebral hemisphere. Also, in separation, there is a difference that result to wrong direction, which means prime is more negative than the unprimed (Deacon et al, 2002) Another experiment investigates issues of shard features. They were selected in a gender sensitive manner, with five women and five men, who ranged from the age of 20 to 38. The experiment concluded that psychological evidence of priming was a product of overlapping semantic featurs, which were in presentation to the left visual field but not presented in the right visual field. It was observed that there were no priming effects in electrode used in the experiment. To the contrary, in the left visual field is the separation in the ERPs, which is consistent with the electrodes (Deacon et al, 2002).

The presence of priming in the right hemisphere supports the Hopfield-like network representation of items, with whose features are distributed across nodes. Priming is thus proved to occur in the right hemisphere when features overlap due to correspondence of node pattern and the prime, which requires partial resetting in order to represent the target (Deacon et al, 2002). on the other hand , the absence of priming in the left hemisphere indicates that items cannot be in code for the same ways they are in the opposing cerebral hemisphere.

For verbal task, there is a right side advantage in performance in the right and the left hemispheres of the brain. Subjects perform more rapidly when information is presented in the right field visual field (Lambert et al, 1993). Conversely, tasks with strong spatial components usually give rise to a left sided advantage (Lambertet al, 1993). This means that, a rapid and accurate response can arise from left visual field presentation. However, exceptions may arise from this information.

The right visual field's advantage can be stopped or reversed when the condition of perception are rendered difficult of in the situation of a new secondary task introduction. This is in relation with selective attention. In research, there is production of strong indirect effects on verbal task performance because of unattended verbal information (Lambert et al, 1993). A good example of this is categorization of task by unattended word in the left visual field, which is describes in the researches.

Furthermore, there is slow response by latencies when the words on the left visual fields originate from the same overall category as a word that is attended in the central vision. The researches termed this effect ' same category slow effect,' the interpretation of which, is an inhibitory effect of unattended information (Tipper, 1985). In addition, this effects show great encoding facilitation of verbal-semantic characteristics from left visual field, especially when there is resistance in encoding the unattended words. In other experiments, there is proof that shows the occurrence of the effect, independently in conscious awareness of the brain. A research on a splitbrain patient shows that the left hemisphere has direct verbal semantic information received by the right hemisphere, which suggest that an intact corpus callosum is unnecessary for the effect of unattended semantic information (Lambert et al, 1993). The findings suggest a mediation of the effects by the sub-cortical pathways.

The aims of these experiments were set to; establish if the effects of unattended verbal words would generalize a different task and to resolve the ambiguity of the latter experiments. Possibilities originate from the idea that words in the same category have close meaning relation than those in different categories, which suggest the effects driven by semantic relations. In the alternate, the effects may have location in stages of response production and occur due to similar responses produced by words of this nature.

For semantic relatedness to be true there needs to be a slow-down of in central presentation of words in the response latencies. This is contra to unrelated unattended words presentation to the left visual field. The effect should occur even if related and unrelated word pair shares the same response category (Lambert et al, 1993).

Experiment objective

The objective of this study is to prove the relevance of Lambert and Voot's report on semantic response. Comparison is made between Deacons experiments, Lambert, and Voot's experiments for analysis.

Hypothesis

If Lamber and Voot's explanation for the same caregory-slower effect is correct then there will be inhibition for targets shown in a related compared to an unrelated context for both word types but only in the LVF/RH. However, if Deacon et al's model is correct then inhibition will occur for words presented in an associated-related context compared to words shown in an unrelated context in the RVF/LH and for words presented in a categoryfeature related context compared to words shown in an unrelated context in the LVF/RH.

Participants

An experiment was set to compare these effects on the semantic category from unattended words presentation to the left visual field (Lambert et al, 1993). The experiment used 161 participants, with 42 males and 118 females. The mean of the participants was 23. 65. the mean and the total number is relevant in calculation of the standard deviation, which is 7. 48 from the mean.

Results

A series of dependent groups t-tests were used to examine the hypotheses.

Mean and Standard Error Scores for error rates in each condition

Mean and Standard Error rates for Response Time in each condition The above results agree with the hypothesis. The semantic response of the individual is with relation to the hemispheres. The errors form a percentage of less than 21, with deviations of less than one. The highest error recorded was 20. 5, which is Associatively Related Right Hemisphere error. The lowest error recorded was 17. 89% on Associatively Related Left Hemisphere. Although this shows the error extremes, the deviations were, 0. 68% and 0. 89%.

Notably, there is a difference in cognitive thinking between male individuals and female individuals, with either left or right lesions (Vandyke et al, 2012). Women with lesion in ether hemisphere exhibit less severe and less specific cognitive deficits compared to men, whereas men with left-hemisphere lesion show specific deficit in the verbal cognition. In addition to sex selection, language uniformity was considered and all the subjects were English speaking. The subject participated voluntarily to avoid false results.

Limitations

The study tried as much as possible to deal with upcoming issues that may affect the result. Some of the limitation that were encountered include, gender sensitivity: the study had more women than men, that is 43 men and 118 women. Forced samples for example, all results were in standard of two decimal places.

The results above show direct relation with Lambert's experiments. From them, there was a significant effect of the Central Letter String on response latency (Lambert et al, 1993). words which are centrally presented have shorter decision latencies than centrally presented non-words. For semantic relatedness in the latencies, there was no significance in effects of visual field of unattended words. Furthermore, there was no significant effect resulting from semantic relatedness. On the other hand, a planed comparison revealed the opposite.

The results from Lamberts model are closely related to this research report recorded aove

Lambert's research strongly suggests that slow effect of response is caused by semantic relatedness and not assignment. This is the same as the results above. They revealed that-when an unattended word is in presentation to the left visual field, the individuals responded slowly in relation to the central target (Lambert et al, 1993). This is in consistency with an interpretation, which favors semantic relatedness (Lambert et al, 1988). Hence, and inhibitory effect of semantic relatedness can contribute to an effect of response category within the condition of word presentation centrally (Lambert et al, 1993).

All the results of the experiment were consistent. Earlier studies produce an inhibitory. Although there was less significance in the response category, there were slower trends of the latencies when words were presented centrally. Earlier experiments are in confirmation with the current experiments, that there is slow response to the left visual field in terms of response.

In the conceptualization of semantic representation, the left and the right hemisphere are major role players in identification of normal items. On the contrary, there exist a difference in priming between the two hemisphere when objects of similar and different semantic categories, when delivered to them.

In conclusion, verbal and visual processing are normal aspects normal individuals and split-brain individuals. For the case of verbal processing, there is great influence coming from the presentation of unattended words, which fall on the left of the visual field (Lambert et al, 1993).

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