

Morton J. Interaction of information in word recognition.

Psychol. Rev. 76:165-78, 1969.

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Quantitative predictions are made from a model of word recognition on the effects of word frequency on recognition; the interaction of stimulus and context information, and the effects of repeated presentation of stimuli. The relevance of the model for studies of memory is discussed. [The *Social Sciences Citation Index*® (SSCI)® indicates that this paper has been cited over 205 times since 1969.]

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"As a graduate student I looked at the effect of a Reading Efficiency Course. It became clear that slow readers often had skills that were not being used, such as knowledge of the structure of language which could be used to 'predict' what was being read. So I studied the role of context on word recognition and showed that less stimuli information was required for a word to be identified if the word fit into a context. From this, I conceived the idea of a 'unit' corresponding to each word, at which stimulus and contextual information could interact and I described its properties. This unit was later called a 'logogen,' following a suggestion at a conference by the physiologist Hallowell Davis (probably the most useful comment I have ever had at a conference!).

"My thesis was finished in 1961 and the material reached the journals in 1964. There wasn't much interest in the model I had developed and I did other things for a few years until I got interested in signal detection. I then realised that I could treat the model mathematically, which I did, and went on to write the cited paper which was a

less technical version of the same thing together with a discussion of more general psychological implications for a wider audience. This paper was finished at Yale University, where I was spending the year working with Tex Garner. In the first draft I had spent a lot of space criticising other people. Tex advised me most emphatically to cut all that out and concentrate on the positive side of my own contribution. Incidentally, the qualitative aspects of the model formed the theoretical basis of another *Citation Classic*, in collaboration with Bob Crowder, whom I met at Yale that year.¹

"The model turns out to have been far too simple in certain respects, but I found that out myself a few years later before anyone else did.² As it stood, the model made certain predictions which we falsified experimentally. So the model was changed, though the name, the Logogen Model, was carried over from the original. Now, the revised version is being used extensively for describing dyslexia and other results of brain damage.^{3,4}

"I think the paper has been popular because it showed the utility of an information processing approach to psychological theory within which a model could be clearly expressed. In addition, in this and other papers, I showed how experimental results on a variety of human skills could be related by means of purely psychological models of the brain processes.

"There is a strong visual component to the expression of the model which I find useful in keeping track of its complexity but which has stimulated others to criticise 'this pre-occupation with boxes and arrows'—to quote a reviewer's comment on a recently submitted paper! However, the ideas have also been attacked seriously (as well as supported), which is healthy. Curiously, no one has challenged the quantitative aspects of the paper, which, I am sure, originally gave it respectability."

1. Crowder R G & Morton J. Precategorical acoustic storage (PAS). *Percept. Psychophys.* 5:365-73, 1969.

[Citation Classic. *Current Contents/Social & Behavioral Sciences* 11(47):10, 19 November 1979.]

2. Morton J. Facilitation in word recognition: experiments causing change in the Logogen Model.

(Kolers P A, Wrolstad M E & Bouma H, eds.) *Processing in visible language*.

New York: Plenum, 1979. Vol. 1. p. 259-68.

3. Morton J & Patterson K. A new attempt at an interpretation. (Coltheart M, Patterson K E & Marshall J C, eds.)

Deep dyslexia. London: Routledge and Kegan Paul, 1980. p. 91-118.

4. Beauvols M F, Derouesne J & Saubert B. Syndromes neuropsychologiques et psychologie cognitive. Trois exemples:

aphasie tactile, alexie phonologique et aggraphie lexicale. *Cah. Psychol.* 23:211-46, 1980.