

Problems in dictionary making : the future

by

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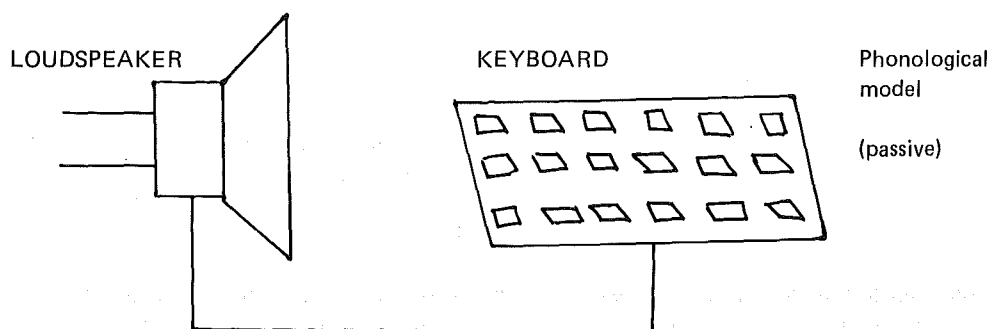
Problems in Dictionary Making : the future

I wish to talk about the future of dictionary making and the problems that the future will bring, by reference to the past - that is to my own experience in compiling dictionaries for two British publishers, William Collins and Longman Group. In considering the future I wish to do so first by talking about the dictionary *as it will be* and then by considering what the dictionary represents in a wider data-processing context, what use it is, and what it will do.

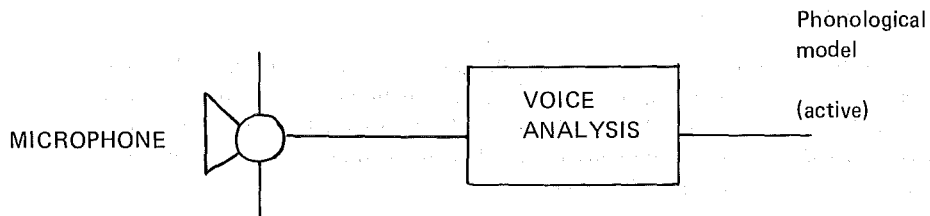
The first I will call *the medium or the message* and *the meaning map*, and the second the *developing brain simulator*.

So first - the medium or the message. The medium has hitherto been taken for granted. It is a book or several books in a set. The alternatives to the book are first of all suggested by the machinery used to create the book - the computer. This is the obvious road - it is by no means the only one. I would like to survey the alternatives and to do so by gradually adding components to a circuit diagram which I shall draw on the blackboard. I will make reference to advantages that different media will give to different kinds of dictionary user. To the seeker of *phonological* information, the book is patently unsuitable - an artificial deformation of the medium to ask it to provide sounds. No. Here we must have immediate spoken forms with regional or national variations. Possibly a transcribed form will be a useful back-up.

So here the technology available suggests a loudspeaker and a keyboard, with an optional screen. I will draw this on the board :



This is of course a totally passive form and perhaps we should look at introducing another well-known electronic component, the microphone.

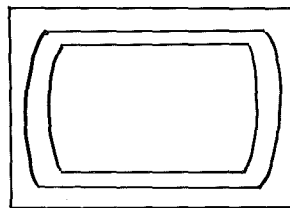


What will this do ? - well it will enable language produced by the dictionary user to be analysed by electronic means, tested for adequacy, accept or rejected, systematically corrected, and so on. The screen might help here in giving visual representation of the ideal to be achieved and the attempt made to achieve that ideal. I will call this *phonological error analysis*.

So much for phonology !

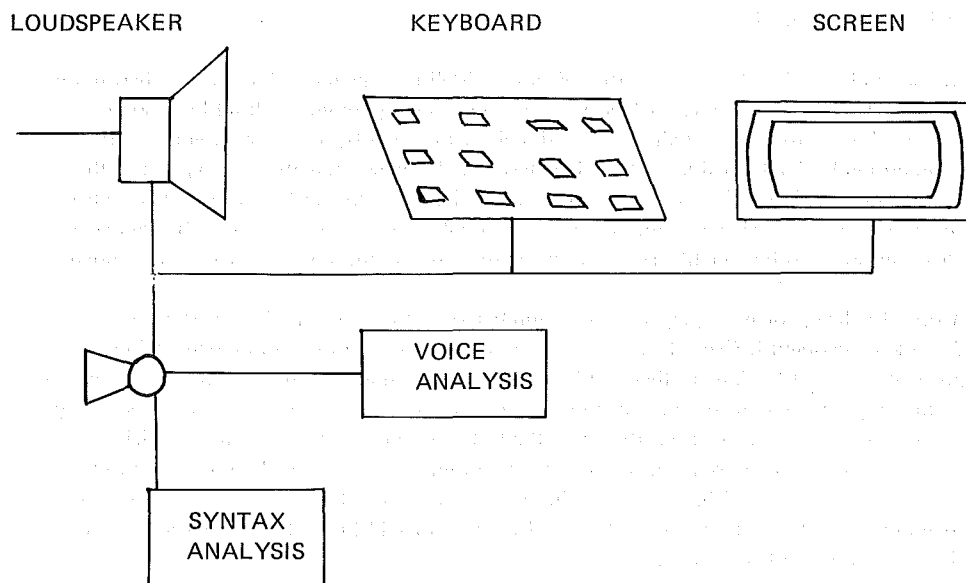
How about *syntax*. Here again the book fails badly. It offers at a rudimentary level parts of speech, at a somewhat more sophisticated level verb patterns, syntactic coding - features found in English monolingual dictionaries designed for the foreign learner of English. What does the seeker after syntax want. He wants to know how a particular word-form, when used in a particular meaning, behaves in sentences. He will need a keyboard of course to key in the word - he will want to see alternative meanings listed - he will want to select one and find out about its behaviour. I would like to give him access to other words which behave similarly (if he wants them). Certainly we must now have a screen and it must have colour and graphics, and movement.

COLOUR SCREEN :
WORDS AND PICTURES :
MOVEMENT

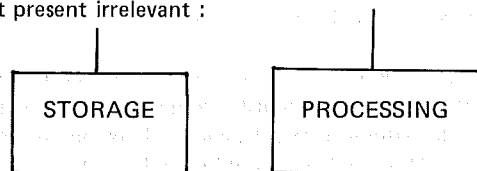


Syntactic model (passive)

As with the phonological model, this is a passive form. What is required in a teaching dictionary is an interactive syntax analyser that will reject the unacceptable and query dubious usages. The picture now looks like this :



I would like for a brief moment to wander away from the model I am building up to talk about what the wires (which conveniently go off the edge of my diagram) are connected to. Well crudely, we have two functions provided, *storage* and *processing*, which I shall connect up now. Whether these are local or central is at present irrelevant :



Coming back to the dictionary, I will move on to *semantics* or what I referred to at the beginning of my talk as the *meaning map*. Semantics is the primary area of description whether monolingual, bilingual or multilingual. What do we want here ? For the *concrete world* we must have pictures and our screen will provide that. Moving pictures will open up all sorts of possibilities. We shall use movement for verbs and prepositions. Because a whole range of contexts will be able to be shown in close sequence, the major disadvantage of over-specificity in pictures in a book will be avoided and this will massively extend the range of pictorial illustration in describing language. All kinds of nouns

and adjectives will benefit from this.

So much for the concrete world. How about the *abstract*. Well here language has to be relied upon to describe language. Contexts, example sentences, translations and synonyms will all be readily available through our keyboard. These will all be optionally supported by the spoken voice. But can't we offer something better than this? Well I believe so. I believe that the lexicographer, the mapper of language, will be able to become a cartographer of language in the far future. The multi-dimensional nature of meaning makes graphic representation, which is often attempted through such devices as matrices, an ideal to be sought after - provided that the graphics are sophisticated enough.

If we look at words for love, for example, we find a number of parameters in which variation can occur. *Intensity* might distinguish *liking* from *love*, but *sexuality* may be one component, while *relative strength of non-sexual feeling* another. *Subservience* is a component in *adoration* and *devotion*, which also vary in the parameter of *intensity* as with *liking* and *love*. *Desire* and *passion* are strongly sexual, perhaps equivalent in terms of intensity, but the latter having a love component which the former may lack. Presenting these complexities in two-dimension graphics - on the contexts in which they may occur - has so far defeated linguists. I believe that they could be mapped through techniques adopted from cartography. The use of colour and movement will highlight appropriate features to give a visual representation of abstract meaning.

If this is the direction in which the dictionary may develop, I should like to ask the question, what will this new dictionary do, in the practical world? Dictionaries are already a major resource on a hidden technical level and will become so increasingly. They stand behind the hyphenation programmes of automatic printing devices, support the first real attempts at machine translation, are a component of voice recognition and synthesis systems, are essential to optical character recognition, and are an essential component of any concept of artificial intelligence.

The growing practice of robotics which is now gathering momentum will call upon lexicographers or their equivalents to provide the data through which linguistic comparisons can be made, in the creation of, interpretation of and response to natural human language. I for one regard these developments with excitement and enthusiasm. This is what I would describe as lexicography's role in the creation of the *developing brain simulator*.