

Psycholinguistic evidence and the use of dictionaries by L2 learners

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Dictionaries are not normally used for the systematic acquisition of linguistic knowledge; they are used for finding an ad hoc solution to a particular problem of comprehension or production. However, when a dictionary is used, the user progresses from an initial state of competence, say S1, to a new state, S2. The difference between S2 and S1 lies in the information that he/she has found in the dictionary, which then becomes a piece of knowledge to be incorporated into the user's linguistic competence. This new piece of knowledge may be the same as when sources other than dictionaries are used, but this paper will be concerned only with the use of dictionaries, whether monolingual or bilingual.

How dictionaries can help L2 learners

The aim of this paper is to try to establish what sort of linguistic information dictionaries provide, and what part – if any – is played by such information in the acquisition of linguistic competence in L2. In other words, the question is: how does dictionary consultation profit the user, and in what way does it contribute to the improvement of the user's mastery of L2?

The linguistic information provided by the dictionary obviously varies according to what has been looked up. It varies in nature, and also in complexity. Roughly speaking, all information concerning the form, or "signifiant", would seem to be fairly simple, whereas information concerning the content, or "signifié", seems to be complex. For example, if the dictionary is used for spelling or pronunciation, the information is a fairly simple, complete, piece of information. It is unlikely to be modified afterwards, so that the user progresses "in one step", so to speak, from ignorance to total knowledge, on the particular point in question.¹ At the other end of the continuum, the nature of the linguistic information provided by dictionaries is notoriously elusive in the case of acquisition of meaning: the user does not progress at once from ignorance to total knowledge (part of the problem being that one does not know what "total knowledge"

¹ This is admittedly a simplified view of things: see Ingle/Meara 1985 for evidence of a relative complexity as regards acquisition of form; in addition, this complexity varies according to individuals: some need only one exposition to the correct spelling of a word in order to acquire it for good, whereas others may need several, and proceed by more or less logical stages of acquisition.

means when applied to meaning). What he/she has learnt on one particular occasion is likely to be complemented or even modified later.

The difference between form and meaning can be compared to a difference in the metalanguage used to describe them: knowledge of the form of a lexical item can be expressed in rules that, if learnt by heart or assimilated somehow, will guarantee proper use of the lexeme, or at least proper knowledge of the way it should be used; knowledge of the content, however, does not easily lend itself to such metalinguistic explanation. Clearly, dictionaries will be easier to consult over points of form than about meaning. It is to be noted that grammar is halfway between the two extremes: when the dictionary is consulted over points of grammar, the information it provides is more complex and more elusive than when it concerns content.

The acquisition of lexical competence

This paper deals exclusively with the linguistic information that dictionaries provide about meaning. It is concerned only with lexical meaning (as opposed to sentence or text meaning), more particularly in L2. The main question to be examined is this: how exactly, and to what extent, does the information discovered by consulting a dictionary affect the learner's semantic memory (as opposed to episodic memory; on this distinction, see, among others, Tulving 1972, Anderson/Bower 1973, Schaefer 1980).

One important distinction to be kept in mind throughout is the distinction between what I shall call "input"² (that is, semantic information as it is made available to the learner), and the same information as it is processed and stored in the learner's mind. In acquisition of meaning, as every language teacher knows, input can be the linguistic context (though this is a very imprecise description: what is it, indeed, within a linguistic context, that functions as input?), a picture, a gesture, a definition (such as those that can be found in a monolingual dictionary, or offered by a third party) or a translation into L1 (as when a bilingual dictionary is consulted). One could say that input can be either non-linguistic, or linguistic, or again metalinguistic. An intriguing question is: what does that input become when it is processed by the learner? How does the nature of input affect the quality and quantity of semantic acquisition? Which kind of input is conducive to the most efficient acquisition of the meaning of a word?

Lexical competence can be defined (though this is only a convenient simplification) as the ability to associate linguistic forms and meaning. This ability is put to the test by comprehension, in which the subject goes from form to meaning, and by production, in which he/she goes from meaning to form. This is true

² Though the word is used with many different meanings in the literature; see, among others, Menn 1983: 8 ff.

of both L1 and L2. In the general context of L2 acquisition, one question has been considered particularly important: what relation is there between L1 and L2 in the learner's mind? As we shall see, this question is partly relevant to the subject of this paper. When learning a foreign language, the learner already has, so to speak, an organization of meanings (a "conceptual framework") that corresponds to his L1. When he/she learns a new sign in L2, the semantic information is processed and stored somewhere. The problem is: where?³ An answer to this question would tell us something about the nature of the information retained by the user when he/she learns a new lexical item, if only indirectly, by showing what kind of information it is associated with when stored in the mind.

Psycholinguistic studies on bilingualism do not correspond exactly to what we need for a study of lexical acquisition in L2, for different reasons:

1. Bilingualism is not necessarily the same thing as learning a second language in a "classroom" context.

2. Such studies tend to overlook the important distinction between storage and acquisition.

3. Most of them are not concerned with acquisition of meaning at all.

4. Even when the experimenters make use of lexical items, they are not, as a rule, concerned with the "qualitative" aspect of lexical acquisition, but only with its "quantitative" aspect. More often than not, lexical competence is considered in terms of "yes" or "no": either the item is known, or it is not. Clearly, this bears little relation to the realities of lexical acquisition for the L2 learner.

Be that as it may, it is important to see what psycholinguistic literature on bilingualism has to say on the acquisition of lexical information by L2 learners.

The two types of bilingualism

According to the earliest studies of bilingualism, there were, broadly speaking, two types of bilingualism, which could be differentiated by comparing what happens every time a new L2 sign is acquired:

1. Either the new sign joins the pre-existing conceptual framework established for L1, thus creating an association of three elements, not two: an L2 form and a complete L1 sign (form + meaning) (cf Neufeld 1973, as quoted by Channel 1985). This hypothesis corresponds to what Ervin/Osgood, in their now famous typology of bilingualism (after Weinreich 1953) call "compound bilingualism" (Ervin/Osgood 1954).

³ "Where" in that case obviously does not refer to anatomical localization, which is a different story altogether; cf Paradis/Lebrun 1983: 9.

2. Or the new sign, along with the other L2 signs acquired by the learner, forms a second conceptual framework, stored in a different place (and also, perhaps, accessed separately). This second hypothesis corresponds to what Ervin/Osgood call "co-ordinate bilingualism".

Unfortunately, experimental evidence on the subject was inconclusive (1979: 149; Channell 1985). Some specialists suggested that the second hypothesis (two different frameworks for the two languages) was the most probable (see, among others, Le Dorze/Nespoulous 1984: 78). But other authors took the opposite view: Segalowitz 1977, for example (as quoted by Levenston 1979: 149). According to Hamers/Blanc (1983: 141 ff.), the evidence in favour of the second hypothesis (only one conceptual framework for two languages) is more convincing than the evidence for the first.

The latest research on the subject suggests that the two hypotheses might well be gross over-simplifications (Paradis/Lebrun 1983). Apparently, the brain of the bilingual subject functions at different levels; there would be at least two: a lower level, where the two languages are separated, and a higher one where they are joined (this organization in layers reminds us of the hypothesis put forward by Fodor 1983 about the functioning of the mind in general; see also Tulving 1972), and this would seem to be true of all bilinguals. What has clearly been established is that there are always links between the two languages (Meara 1983: 37; Hatch 1983: 59; cf also Erdmenger 1985: 162) – though the exact nature of those links, and how they function, is not fully understood.

It does not seem possible now, contrary to what specialists used to think, to distinguish two (or three) distinct categories of bilingual subjects (Levenston 1979; Grosjean 1982: 243). All individuals seem to possess a certain amount of compound bilingualism, and a certain amount of co-ordinate bilingualism (though there is always a dominant language: Meara 1980: 234, 238), and the learning behaviour of bilinguals seems to vary tremendously (cf Levenston 1979: 150–151). It varies according to age (Hamers/Blanc 1983: 24), level of proficiency in L1 and in L2, to the degree of similarity between L1 and L2, the general context of acquisition, the type of lexical unit to be acquired (Levenston 1979: 149; Meara 1980: 232–233, 239; Hamers/Blanc 1983: 144; Baetens-Beardsmore 1982: 52), and according to individuals (Vogel 1986). Furthermore, the same individual may behave differently at different times. In fact, some authors advocate the neutralization of inter-individual variations (see Wode 1983, as quoted by Labelle 1985: 234), saying that they make the situation hopelessly complicated.

Thus, as we had feared, psycholinguistic research on bilingualism has little to offer on the acquisition of meaning in L2. What it does offer is mostly negative evidence: in the present state of research, it is impossible to say where semantic information about L2 words is stored in the brain of the bilingual subject. This ignorance should make one wary of sweeping generalizations about, for example, the necessity to force learners to think in L2: what does that mean if there is on-

ly one conceptual framework for the two languages? Is it reasonable when we know that the learning behaviour of bilinguals varies enormously according to circumstances and individuals (Hatch 1983: 73–74)? Thus, when the exclusive use of the monolingual L2 dictionary is recommended because it is thought to foster “thinking in L2”, it seems that this recommendation is based on wishful thinking more than on really scientific bases.

The intricacies of the acquisition of meaning

A second source of information in psycholinguistics is the research on processes of the acquisition of meaning, whether in L1 or in L2 (assuming that there are similarities between the two processes, which is not at all certain). This is another area where much remains to be done, particularly for L2 (Felix 1977: 350). However, it does offer a few conclusions:

1. The acquisition of the meaning of a linguistic form is never immediate in L1, and hardly ever in L2. It is not, as a rule, “knowledge at first sight” (Meara 1980: 227; Hatch 1983: 62). Carey (1978: 274–275) says that it takes six months for a child to fully understand the meaning of a word in L1. In L2, the amount of time required, and the actual timing, probably depend on the type of lexical unit, according to whether the complexity of the unit is intensional or extensional (intensional complexity being more easily transferred by the learner from L1 to L2). Among other things, this slow and complex process seems to point to a model of acquisition by semantic features (though this is only one of several hypotheses; see, for example, Barrett’s theory of prototypes, as reported in McShane/Dockrell 1983), but it is not at all certain that we memorize semantic features as such (Zurif/Blumstein 1978: 239). (On the much debated question of the acquisition of polysemy, particularly on the distinction between core and non-core meanings; see McShane/Dockrell 1983).

2. The learner, then, goes through successive stages (Meara 1980: 240; Meara 1983: 35–36). Unfortunately, not much is known about these stages (Meara 1983: 36; though see Anglin 1970 on the process in L1), apart from the rather obvious fact that in the initial stages, the subjects have a vaguer idea of meaning than in the later ones. This process, according to some, is essential to the proper acquisition of meaning (see Rivers 1978: 208).

3. Ease of acquisition varies according to the type of lexical unit (Meara 1980: 232–233, 239). For example, concrete words would seem to be acquired more easily and more quickly than abstract ones (Hamers/Blanc 1983: 144), and words that are semantically similar in L1 and L2 without being exactly the same could be the most difficult to acquire (Baetens-Beardsmore 1982: 52).

4. At every stage of the acquisition of meaning, the learner organizes his knowledge, trying to integrate each new item into the existing framework (on the no-

tion of interlanguage, see Selinker 1972, though he does not say much about lexis; cf also Levenston 1979: 152). Some specialists of language teaching conclude from this observation that words should be taught in "systems" (see, for example, Erdmenger 1985). The conclusion seems perfectly logical, but there is virtually no evidence on how far the fact of teaching words in groups can influence the learner's (mostly subconscious) semantic organization: is this organization intra- or inter-linguistic? This is important, because one of the arguments in favour of the monolingual dictionary is that it teaches lexical relations (which is one important aspect of meaning). But it is not at all certain that the learner stores L2 relations in ways that correspond to the organization of lexis as reflected in dictionary definitions, or even to what linguists have in mind when they speak of lexical "systems", i.e. paradigmatic associations.⁴

5. At every stage, the decoding competence of the learner is superior to his/her encoding competence (at least, this is what most specialists used to think, though it is now believed that the situation is not as clear as it was formerly thought to be: see McShane/Dockrell 1983). The difference between the two would mean that part of the understanding of a message (in decoding) comes from elements other than the knowledge of meaning as it is stored in the learner's brain; for example, the form of the word or indications given by the context.

6. The quality of lexical acquisition may vary according to the nature of input (Carey 1978: 267; O'Rourke 1974: 61). There are numerous contrastive studies of the effect of teaching L2 words through different means, though their conclusions are not altogether clear (Meara 1980: 228, 240). For example, some studies show that if a word is taught along with its translation, it is memorized more easily (Grosjean 1982: 245; Hamers/Blanc 1983: 142 and 145; Nation 1982: 21), but other studies come to the opposite conclusion (Crothers/Suppes 1967; Champagnol 1972). On the whole, however, translation fares no worse than other types of input. As for definitions in L2, virtually nothing is known of their effect on the process of acquisition (see Storck/Looft 1973 for an interesting experimental study of the natural metalanguage of adults and children in L1). As far as I know, no study has ever been made of the effect of different types of metalanguage on the acquisition of meaning (though there are papers on what may logically be inferred from the use of different types of definitions in dictionaries: see for example Jain 1981). Yet, this would be extremely important for dictionary-makers, as well as for teachers of L2.

7. The lexical competence of the learner in L2 at the end of the learning period may be (in fact, most often *is*) different from the competence of the monolingual subject in this same language. It is not a straight-forward scaled-down image of the competence of the native speaker (Vogel 1986: 51).

⁴ In fact, most experiments in word associations show that L2 learners of all ages tend to associate words syntagmatically – just like children in L1; see Meara 1983.

The relative merits of different types of dictionaries

This quick survey of the literature confirms that the acquisition of meaning, both in L1 and in L2, is an extremely complex process. Among the conclusions, one seems particularly important: lexical acquisition is not immediate. This is certainly not a revelation, but it is an important point to bear in mind when discussing the relative merits of different types of dictionaries. It means that consulting a dictionary once (whether monolingual or bilingual) cannot result in the immediate acquisition of meaning (as if, for example, all the elements of a definition could be retained as a set of semantic features).

One argument often used by the advocates of the exclusive use of the monolingual dictionary is what Zgusta calls the "anisomorphism" of languages. Now this is less valid than it looks at first sight. If indeed the learner only acquires part of the meaning of a lexical item at a time, it should not make much difference whether the L2 lexical unit which is being learnt corresponds as a whole to a lexical unit in L1 or not. The question is, in fact, do we ever (consciously or not) have complete "semantic pictures" of lexical units? Or do we consider particular meanings one at a time? The latter is certainly what happens when the dictionary is used only for decoding (see Fodor's model). Then, the information contained in the dictionary entry is used only as a pointer towards whatever semantic information in the user's competence is enough (or thought to be enough) for the decoding of the message to proceed, and in such cases taking into account the complete semantic "portrait" of a form would certainly be a hindrance rather than a help (Fodor 1983). Hence the observation that dictionary entries are seldom read in full (see Miller/Gildea 1985; Tono 1984). This is not surprising; after all, if dictionaries could be used for the systematic, deliberate acquisition of lexical meaning, they would probably be so used.

I have been exploring psycholinguistic literature in order to find evidence that would be relevant to a better understanding of what happens when a learner consults a dictionary in order to find information on the meaning of a lexical unit in L2, and how that information is processed. The evidence provided by the relevant literature is mostly negative. The acquisition of lexical meaning in L2 is an extremely complex process, about which relatively little is known. We do not know where semantic information about L2 words is stored; we do not know through what stages the learners pass when they acquire the meaning of a lexical item. Indeed, what happens when a learner consults a dictionary has hardly ever been studied as such. One way of doing this would be to try and see what happens, in a carefully controlled experimental situation, when a user has different types of input at his/her disposal (for example a translation and a definition), and to check afterwards what has been retained. This is more or less what Tono 1984 does, and more research of the same kind would be extremely useful.

The main conclusion is that one should be extremely careful when advising L2 learners on which dictionaries to use and how to use them. Indeed, either dictionaries are instruments for the acquisition of meaning, in which case the process remains so mysterious that one's recommendations cannot really be based on scientific evidence; or dictionaries are only used at a very superficial level, to allow the users to proceed in whatever they are doing, in which case there is no reasonable criterion for recommendation, apart from the satisfaction of each individual user.

Admittedly, this is only part of the problem. The realities of dictionary consultation are obviously more complex and the fact remains, even if one does not exactly know how and why, that dictionaries are indeed used by L2 learners. This would seem to indicate that they derive a certain satisfaction, and perhaps even some profit, from their consultation.

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