Conversation Theory and Second Language Lexical Acquisition

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Abstract: Adult second language learners often comprehend second language lexical Items by transferring the conceptual meaning of first language equivalents. Since translation equivalents between two languages often only partially overlap in meaning, learners' acquisition of lexical Items must evolve from the Initial transferred meaning to the target language conceptual meaning. In this paper, a semantic perspective is adopted in analyzing what Is Involved in L2 lexical learning, and a number of Ideas from Pask's conversation theory such as participants (trans-body and intra-body 'p' individuals), self organization, learner In conversation and coherence are applied to provide a cybernetic systemic description of the L2 lexical learning process. Some insights are gained into instructional design issues, control and adaptiveness in teaching, and fossilization In second language learning.

Resume: Pour comprendre le sens des elements lexicologiques d'une langue seconde l'etudiant adulte dolt souvent faire appel au sens conceptuel des equivalents de sa propre langue. Comme les significations des equivalents ne se chevauchent souvent que partiellement d'une langue a l'autre, l'acquisition des elements lexicologiques doit evoluer a partir du sens transfere initialement au sens conceptuel de la langue d'arrivee. C'est dans une perspective semantique que nous analysons ce que comporte l'apprentissage d'un deuxleme lexique L2. Certains concepts decoulant de la Theorie Conversationnelle de Gordon Pask, entre autres les trans-corps et intra-corps des Indivldus 'p' (trans-body and intra-body 'p' Indivuals), l'auto-organisation et I'etudiant en conversation et en coherence sont utilises pour apporter une description cybernetique systemique au processus d'apprentissage du lexique L2. Des eclairclssementssont apportessur les questions concernant la conception du materiel didactique, le controle et l'adaptation pedagogiques et la fossilisatlon dans l'apprentissage d'une langue seconde.

Learning second language (L2) lexical items is not simply a matter of acquiring L2 lexical forms. It involves acquiring the L2 conceptual system underlying the L2 lexical system. The learning process is further complicated by the fact that learners transfer first language (LI) conceptual meaning to L2 translation equivalents, which overlap with and differ from the LI lexical items in numerous ways. The learners' task consists of traversing the interlanguage stages (Selinker, 1972) and emerging at the target end with native-like L2 lexical system and its underlying conceptual meaning system. In describing the L2 learning process and designing teaching syllabus for it, researchers tend to look

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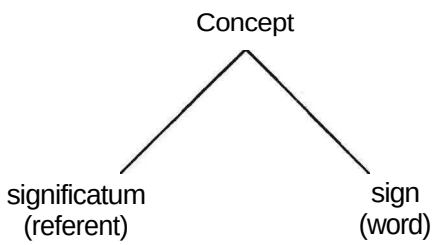
at linguistic and sociolinguistic factors (Rod Ellis, 1986; Breen & Candlin, 1980; Littlewood, 1981; Stern, 1983). But like learning of other subject matters, L2 learning in general and L2 lexical learning in particular has a communication and control aspect. Pask's conversation theory (Pask, 1975, 1976, 1984) can provide a cybernetic systemic perspective to understanding the L2 lexical learning process. The paper has two parts. In Part One, we will discuss three points. First, a lexical system has a formal level and conceptual level, the duality of a lexical system. Second, two lexical systems may differ at both formal and conceptual levels in such a complex way that it defies attempts to map or to systematically describe the differences. We refer to this kind of differences as cross language incongruity. Third, against this cross language incongruity at both formal and conceptual levels, L2 learners use combined strategies of LI transfer and L2 experience-based hypothesis testing to build an L2 lexical system. These three points constitute an L2 lexical learning context in which we, in Part Two, discuss Paskian ideas such as "p" individual participants, self organization and coherence, etc.

PAET ONE

Lexical System and Conceptual System

Philosophers and linguists such as Humboldt, De Saussure, Ogden and Richards have long explained the relationship between language, concept and reality through the well-known triangular diagram, which was first set out by Ogden and Richards (1923). John Lyons (1977) gives a simplified form of the triangular diagram.



These linguists first used this triangular diagram to explain that language is not directly related to reality. Reality has to be first perceived and interpreted by the human mind in terms of conceptual meaning which is then coded into linguistic forms. What is immediately relevant to our discussion is the relationship between conceptual and linguistic systems, namely, linguistic systems which resulted from grammatizing and lexicalizing the conceptual meanings have underlying conceptual systems.

Generally it is very difficult to discuss conceptual and lexical systems separately, as concept formation and lexicalization may be of the same process.

But the following two questions may help us see some cognitive and linguistic characteristics of the relationship between the conceptual system and lexical system. First, is there a difference between the meaning expressed by a lexical item and that expressed with a syntactic construction? Second, why is a conceptual category likely to be lexicalized?

Leech (1981) argues that the word as a lexical element has a concept defining role. He uses the following examples to show the point. Agent nouns such as "driver", "copywriter", and "bed-maker" have in the first stages of adoption a transparent equivalent to relative clauses, so that, for example, "driver" may be defined as "a person who drives", "bed-maker" as "one who makes beds", etc.. But it would be false to claim that the single word and the syntactic construction have exactly the same meaning, for the word carries an additional message, namely, the calling into existence of a category. The word "bed-maker" asserts that there is a special institutional category of persons, whose function or habit is to make beds. Notice the difference, for example, between asking the question *"Is* she a bed-maker?" and the question "Does she make beds?" A person questioned in this way may well reply: "Well, she does make beds, but she is not a bed-maker."

Leech's example argues convincingly that lexical items are of particular importance to a language, and cannot be replaced by syntactic constructions. They are important perhaps because meaning in a lexical item is regarded as a packaged unit and is functionally more needed and therefore more fundamental in the inventory of the language. In other words, lexical items are better defined as conceptual categories. Lexical items reflect both the extent of detail to which we classify a field of experience and the way we classify it. For instance, we know well that the more a field is studied, the more fine-grained the classification will be, because we need more distinct categories to operate with.

But why is a conceptual category likely to be lexicalized? The question can be answered from the linguistic point of view. Some meaning may, at the beginning, be expressed by a syntactic construction such as "persons who write novels". But as soon as a conceptual category has been formed of these persons writing novels (i.e. Novel writing is seen as an institutionalized profession) and consequently there is a frequent need to refer to this group of persons, syntax will not tolerate always allocating them long syntactic constructions such as relative clauses which function as a single semantic unit in the sentence. Syntax will pressurize the prepackaged meaning to lexicalize and appear in the sentence in the form of a single lexical item. In other words, lexicalization is a meaning-chunking mechanism. If languages were not to have such a mechanism of lexicalization, it is hard to imagine how languages cou Id function as they do because we then would have only semantic primitives such as [Human] [Adult] [Male] to operate with and would have to rely excessively on syntactic constructions to express our thoughts.

LI and L2 Lexical Systems

If a lexical system has an underlying conceptual system, what are the implications of this duality to cross language lexical analysis?

Hudson (1989) applied Jackendoffs preference rules (Jackendoff, 1983) in cross language lexical analysis. Briefly, Jackendoffs preference rules revealed that lexical information is organized out of a complex interaction of three conditions: necessity, centrality and typicality. This would imply that people, when learning their LI, learn the cultural-specific criteria for organizing lexical information. For instance, they learn to use a certain ratio between width and height in judging whether a container of certain size can be called "cup". If the ratio between width and height, which is the necessity condition, is deemed inappropriate to call the container "cup", the addition of a handle to the container, a typicality condition, may help to classify the container as a cup. Furthermore, when sufficient data in the environment are not available for a judgement, native speakers will rely on the global organization principles in making inferences to supply default values. However, "it seems obvious that the ability of a native speaker to make reference to the culturally appropriate default values may not be shared by L2 speakers in the face of what is an incomplete set of facts. In this light, lexical transfer can be seen as the basing of hypotheses about a word not only on the conditions operant in specific LI equivalents but also on more global Li-based default values." (p. 235) This view emphasizes the cultural experience based criteria for lexical information organization.

Since lexicalization is motivated by conceptual categorization, which is culture specific, LI and L2 lexical systems can differ in many ways. The following list is intended to be illustrative and it is not exhaustive.

- An experience field can be classified to different degrees of specificity (e.g., The number of colour terms varies across languages.)
- An experience field can be classified in different ways (e.g., English and French classify furniture differently, as will be shown below.)
- The internal structure of a lexical item may differ from language to language even though it may be regarded as translation equivalents.
- Metaphorical use of an equivalent lexical item (e.g., "We hit the road at daybreak.") as opposed to prototypical use,(e.g., "Hit the nail on the head.") may differ from language to language, because different languages may extend and suppress different semantic features of a lexical item.
- As lexical items / concepts exist in a network system, the differences outlined above imply the different organizations of lexical systems across languages.

Let us see some examples of the differences between lexical systems outlined above.

Difference in the level of specificity of classification. Kinship systems of English and Chinese share many similarities but there are also quite many

differences. For example, in English, there is only one word denoting children of parents' siblings, namely, "cousin". In other words, children of parents' siblings do not constitute a semantic field in English. "Cousin" is a member of the semantic field of kinship. From the viewpoint of the Chinese culture, the term is too general to be functionally adequate. In Chinese, a cousin's sex, whether younger or older than oneself, has to be specified as part of semantic features in a lexical item. Thus we have:

tangxiong	(father's brother's son, older than oneself)
tang di	(father's brother's son, younger than oneself)
tangjie	(father's brother's daughter, older than oneself)
tang mei	(father's brother's daughter, younger than oneself)
biao xiong	(father's sister's son or mother's brother's or sister's son, older than oneself)
biaodi	(father's sister's son or mother's brother's or sister's son, younger than oneself)
biaojie	(father's sister's daughter or mother's brother's or sister's daughter, older than oneself)
biao mei	(father's sister's daughter or mother's brother's or sister's daughter, younger than oneself)

We can observe certain characteristics in this system of classification. 1) Children of parents' siblings constitute a sub-semantic field in the field of kinship. 2) The levels of specificity of "tang" and "biao" are different. "Tang" is more specified than "biao". Note that the distinction between "tang" and "biao" is not determined by whether the cousin is of one's father's side or mother's side, but by whether the relation between the speaker and the cousin has crossed the sex line in one's parent generation. One's relation with father's brother's children, all denoted by the morpheme "tang", has not crossed the sex line in one's parent generation and they all bear the same family name as oneself. The relation between oneself and the rest of the cousins, all denoted by the morpheme *"biao"*, has crossed the sex line. These cousins do not have the same family name as oneself. This system of classification clearly reflects aspects of the Chinese culture, specifically the view of family, which we do not have space to look into here.

Difference in semantic componentsoftranslationequiualents.Theboundaries between the meanings of what at first sight appear to be semantically equivalent words in different languages may be incongruent. To show the point being made here, John Lyons (1977) analyses translating into French the sentence "The cat sat on the mat". We first come to the problem of translating the English word "cat". Should we put it as "le chat", knowing that the animal being referred to was male or being ignorant of and unconcerned with its sex? Or as "la chatte" knowing that it was female? 'The fact that French will use ~chatte' in reference to a female cat, known to be female, whereas English will not necessarily use a phrase like "tabby cat' in thesamecircumstances means that "cat' and ~chat' are denotationally non-

equivalent." The translation of "the mat" is more interesting. "The mat" is translatable into a number of distinct, nonsynonymous French lexemes: "paillasson" (a door-mat); "descente de lit" (a bedside mat); or "tapis" (a small rug). "There is a set of lexemes in English, "mat*, "rug", 'carpet', etc. and a set of lexemes in French, "tapis', "paillasson', "carpette', etc., and none of the French words has the same denotation as any one of the English lexemes. Each set of lexemes divides, or categorizes, a certain part of the universe of domestic furnishings in a different way; and the two systems of categorization are incommensurate." (p. 238) In other words, each language divides up the semantic space of a particular field in its own way, and the denotation of a lexeme is limited by the relations of sense which hold between it and other lexemes in the same language. The denotation of "mat" is limited by its contrast in sense with "rug" and "carpet"; the denotation of "paillasson" in French is limited by its contrast in sense with "tapis" and other lexemes. Therefore the meanings of words are internal to the language to which they belong.

L2 Lexical Learning

We can now look into some details at how a learner, in the process of learning L2 vocabulary, constructs an L2 lexical system, at both the formal level and the level of substance. But before that, let us take a brief look at Clark's (1973) and Nelson's (1974) studies on children learning LI words. Both of these studies are valuable to language acquisition research in their view that children do not learn a word overnight. A child does not either know or not know a word. Rather, there is a process of learning a word, as a word is meaningful to him/her only so far as the child perceives and conceptualizes certain experience that the word has lexicalized. In other words, at a certain stage, the child may be able to use a word for part of its meaning, but s/he has not acquired the word to the full extent. S/he may even have to readjust the perceived semantic distinctions of the word. For instance, the child may call both an apple and a ball "ball" because the semantic distinction s/he has perceived is [Round]. So at a certain time, s/he will disassociate "apple" from "ball" while continues to expand his/her perception of other semantic features of the word. For instance, apart from [Round], "ball" has other features such as [Bounce]. Later on, the child has to learn sense relations between words (e.g., the relation between "parent" and "child"), and construct a hierarchical order of words (e.g. Flower and trees are plants.) What we see here is that a child's lexical development is closely related to his/her conceptual, cognitive development.

An adult L2 learner probably does not have a cognitive maturity issue. And it is controversial whether the L2 learner acquires the L2 conceptual system separate from the LI conceptual system. How do we describe the process of an adult L2 learner learning L2 vocabulary? Selinker (1972) proposes the notion of interlanguage. An interlanguage has three basic characteristics: 1) at any given stage the learner's language is a rule-governed system; 2) the system is permeable as it evolves toward the target language; and 3) the learner's language may fossilize at a certain stage and the learner falls short of acquiringa native-like L2

system. The interlanguage theory is one of the ways to describe the learner's evolving L2. We would suggest that L2 learners learn L2 vocabulary in a way similar to LI children learning words of their mother tongue, with one important difference. That is, when an LI child has not perceived and conceptualized certain semantic features of a lexical item, or relations between lexical items, s/he is, to that extent, cognitively and expressively restricted. But an adult L2 learner is likely to understand L2 lexical items from the perspectives of his/her LI, as pointed out by Hudson (1989).

The learner's interlanguage lexicon at any stage is different from those of LI and L2. S/he may, on the one hand, transfer LI meanings to L2 lexical forms, (using a deductive process in applying LI global organization principles) and, on the other hand, acquire L2 cultural experience-based information of the lexical item, (using an inductive process) to form hypotheses on L2 lexical items (Hudson, 1989). So the learner's lexicon has a system of its own and with its own variations. Transfer of LI lexical meanings in order to understand L2 words is facilitative to L2 acquisition but may also inhibit a native-like mastery of an L2 lexical item.

PART TWO

Conversation Theory

From our analysis above, we see that the duality of lexical system, cross language incongruity, and learners' combined strategies of LI transfer and L2 experienced-based hypothesis forming make L2 lexical learning a complex, dynamic and ever evolving process. An adequate description of such a process requires a cybernetic dimension which conversation theory can provide. Given the limited space, we can here only attempt a short summary on the two fundamental issues of conversation theory.

What Learns ? The commonsense answer: that individuals learn, is probably a most misleading answer. Integrated whole-self learning is the rare achievement of only very mature individuals (Boyd & Myers,1988), while learning by semi-autonomous parts of persons, or by distributed assemblages of parts [intra-body and trans-body *"p'* individuals (Strawson, 1959; Pask, 1975; & Boyd, 1991)], are the usual kinds of learning. Actually, the answer to the question: WHAT LEARNS? appears to be a dual or triple one: both parts of people, and networks of parts of people associating in groups do learn, as well as indeed, but more rarely whole integrated "Selves'.

Conversation Theory postulates that we have prototypical autopoietic virtual organisms in our minds/Central Nervous Systems (CNS) which develop into viable participant individuals "V individuals" through external and internal learning/teaching 'conversations', 'p' individuals do not correspond directly to biological individuals. Each biological individual carries many intra-body **p'* individuals (both personae, and dynamic conceptual complexes), and also carries parts of some distributed or trans-body 'p' individuals (such as: languages, religions, ideologies, team-spirit, etc.) Current work in cognitive science

(Martindale, 1991) and neurophysiology indicates that different kinds of learning *occur* in different parts of the CNS and that the various kinds of memories associated with a particular episode are somehow "bound" together by as yet undefined mechanisms. We are inclined to interpret 'p' individuals, or what we prefer to call AVOs (Autopoietic Virtual Organisms), as the "binding[1] agents — whatever they may actually be physiologically.

How Do "p'Individuals Learn? Paskian conversation theory asserts that: If the conversations are related to an objective domain and are devoted to the elaboration, comparison, and correction of conceptual entailment meshes representing that domain, then valid knowledge will be constructed, will be bound together, will be remembered, and probably will be transferred as needed for the viability of the 'p' individuals.

There are similarities with George Kelly's "Personal Scientist" theory. However, binary categorization has no special importance for conversation theory. Harri-Augstein and Thomas's learning conversation methodology (1991) sort of combines Kelly's theory and Pask's theory, but practically, rather than with any formal rigour. There are similarities with Scandura's structural learning theory, but Scandura does not posit 'p' individuals. Since entailment meshes are flexibly hetrarchical, not intrinsically hierarchical, Gagne's hierarchical learning & instructional theory is a sort of degenerate case of conversation theory (again without 'p' individuals).

Participants

A participant is "a system of concepts that is organizationally closed, informationally open, and self-organizing" (Pask, 1984 p. 12). The value of this definition seems to be twofold. One is that a '/p' individual is an organizationally closed system, able to maintain its integrity and distinctiveness. But it is informationally open. It accepts information that coheres with it and rejects information that does not cohere with it. Thus, the system can grow while maintaining its distinctiveness or identity.

The other advantage of this definition is that it transcends the biological boundary of persons. It thus accommodates a system of concepts residing in a computer or a human group. The definition captures a very important insight in that we can regard a particular system of concepts residing in a student as participant A and a similar system residing in the public as participant B. Thus, a student can go to professor Smith's lecture, read Professor Brown's book or use computer-aided instruction. The relevant system residing in the lecture, the book and the computer-aided instruction is Participant B. Through interaction with this Participant B, Participant A residing in the student grows and refines itself.

A further property of'p' individual is self-organizing, a notion which we will discuss later.

In the literature of second language acquisition, the minimum unit participant is implicitly taken to be a person, although a person is looked at from different perspectives such as his/her cognitive style, socio-economic environment etc. Pask's definition of participant would enable us to focus on the

acquisition of particular systems of L2. For example, a learner's English tense system, his/her conceptual organization of L2 kinship, and even his/her use of a particular set of semantically related L2 lexical items can be viewed as participants. The concepts in these systems are the personal concepts and they will, through interaction in the task domain, evolve toward the public concepts residing in L2 native speakers and their language productions.

Self Organization

Self organization is manifested when a person in a task context executes the task efficiently, adaptively and with relevance to what is going on around him/her (Harri-Augstein and Thomas, 1991). Self organization thus contrasts with ritualized execution of a task in which a person performs a task in a robot-like manner.

What does it mean by 'p' individual being capable of self organization? It means the 'p' individual in a task context must set up a feedback loop with the environment and carry a conversation with itself. The feedback loop is needed for it to assess the environment, set intermediate goals and formulate concepts, rules and strategies to guide its interaction. Then as the learner interacts with the environment, it must constantly assess the effects of the interaction in relation to its goals and evaluate the mental model which guides the interaction. During this process, the 'p' individual carries on a conversation with itself in constructing and revising the mental models alongside the progression of the task. Learning occurs as successively revised mental models enable it to approach ever closer to thesuccessful completion of the task, because its mental models now approximate more closely than before to what is in the environment.

This aspect of self organization is in agreement with Simon's view of learning that our cognitive complexity is due to the complexity of the environment and is acquired through our interaction with the environment (Simon, 1981).

In L2 acquisition literature, the communicative approach (Littlewood, 1981, 1984; Ellis, 1986, 1990; Stern, 1983; Canale & Swain, 1980) and under its umbrella, the tasked-based syllabus (Breen & Candlin, 1980; Breen, 1987a, 1987b, 1987c; Candlin, 1984; Foley, 1991; Nunan, 1989) are based largely on semantic and sociolinguistic considerations, namely, that learners should focus their attention on the meaning in communication rather than on linguistic forms. Few researchers are aware that the strength of the task-based syllabus may be also due to the fact that it utilizes the notion of self organization. Self organization in an L2 learning task context has two important aspects. First, it brings out the control and communication aspect of L2 lexical learning to which little attention has been given so far. Second, it raises the issue of designing optimal tasks in relation to learner sophistication.

By definition, if a **p'* individual executes procedures of language processing with complete automaticity while performing a task, s/he is not self organizing in terms of language learning. In other words, s/he has to have some challenge in constructingand executing procedures of language processing in order to activate

self organization. Only when the learner is self organizing in a task context, can the task become both a source of L2 lexical information and a medium.

When participant A in an L2 learner is self organizing in a task context, it is open to the information coming out of the complex interaction of three L2 lexical organization conditions: necessity, centrality and typicality and to the global organization principles in default of sufficient information, of which Hudson (1989) speaks. This experience based information gained through interaction with participant B in L2 culture is the basis on which L2 lexical hypotheses are formed and tested. It is the foundation of the whole L2 lexical system. And in case of disagreement, it will override any information transferred from LI equivalents.

Task as a medium enables the learner to set up a feedback loop with the environment. The learner thus can assess the effect of language use in relation to task progression. For instance, correct use leads to successful communication which in turn leads to task progress. Incorrect use results in unsuccessful communication (confusion or misunderstanding) which leads to no task progress. With the feedback loop, the learner is engaged in conversation with him/herself, perceiving needs, looking for solutions, acting upon hypothesis, reflecting on the effect of the action and revising the hypothesis. The learner is thus self organizing in the task context. The task provides an environment for this process. But the process will only occur on the condition that the learner be self organizing.

The second aspect of the notion concerns the complexity of the task as opposed to learner sophistication. Two extreme cases would ensue if one set of variables (either task complexity or learner sophistication) is held constant while the other grows in complexity. If the variation of the task environment is fixed at a manageable level, while the variation of the learner increases as s/he acquires correct rules and concepts, the learner will soon adapt to the environment. On the other hand, if the variation of the task environment increases while the variation of the learner remains constant, the learner will quickly find that his/her hope of successful performance is disappearing.

The notion of self organization has raised an issue of optimalization. How can we arrange the task environment in such a way that the learner's self organization is optimally utilized? Optimalization is an issue that has consequences not only in learning efficiency but also in motivation, for both boredom from the lack of challenge and despair from the lack of hope of success tend to destroy motivation.

Optimalization concerns the ratio of change in the complexify of task to the change in learner sophistication. To achieve the optimal utilization of self organization by arranging appropriate task environments, the following topics have to be researched:

- What are the variables that constitute task complexity?
- What are the variables that constitute learner sophistication? (For a discussion of task complexity and learner sophistication variables, see Nunan, 1989 pp.96-116.)

- What relationships exist among these variables?
- What is the optimal rate of change in the values of the variables in the task environment as opposed to the rate of change in the values of the learner sophistication variables?

Furthermore, these research topics concern only optimal utilization of self organization, an efficiency issue. There is also an effectiveness issue of what kind of tasks for developing a particular competence.

L2 Learners in Conversation

We have defined participants and discussed self organization in a task environment. Now let us see how an L2 participant actually engages in a conversation through which an early interlanguage lexicalsystem evolves toward the L2 lexical system.

Information transfer can occur at two channels: within-participant channel and between-participants channel. In L2 lexical learning, within-participant information transfer deals with the problem of achieving automaticity of an L2 item. The between-participant information transfer describes the process of acquiring the conceptual meaning of an L2 item. In this section, we will discuss the between-participant information transfer and leave the within-participant information transfer to the discussion of coherence.

In the between-participant information transfer, participant A is a subsystem of L2 residing in a learner. Participant *B* is a subsystem of L2, not necessarily biologically bound. In an *A-B* interaction, *A* displays, in the task domain, the personal concept or hypothesis of a certain item which could be a lexical item in L2 form but with elements of equivalent LI meaning or usage. *B* displays its uses of the same item. A lack of agreement between *A* and *B* may be perceived by both *A* and *B, if B* resides in a tutor or native speaker. Here we have an issue of communication threshold. If the disagreement between *A* and *B* over the item is severe, communication breaks down, resulting in confusion and misunderstanding. The situation has to be rectified quickly. *A* tries to build a mental model of *B's* understanding or usage of the item in order to revise his/her own, so s/he can understand *B's* use of the item and be understood. *B* tries to build a model of *A's* understanding or usage in order to identify the confusion and misunderstanding, or help A. A now is also engaged in a conversation with him/herself, for s/he has used an item and has perceived the effects of the use through the feedback loop. The assessment of the effects indicates that his/her hypothesis of the item needs to be changed. *A* is thus self organizing. In fact, *B* is also self organizing. However, the benefits for *B* is not language learning, but the progression of communication and perhaps learning something about tutoring an L2 learner. *A* and *B* are thus mutually adaptive.

Let us see a concrete example of *A-B* interaction. If a Chinese learner of English initially understands "catch" through LI transfer, s/he finds agreement with an English speaker in using "catch a bird", "catch a ball", "catch a thief, etc.. However, when the Chinese learner says "catch something firmly", as his/her LI

equivalent has this usage, there is a disagreement between A and *B*. *B* never uses "catch" here but "hold" or "grasp." A makes an adjustment. On the other hand, *B* also uses "catch a cold", "catch a bus", which A never uses in LI for the translation equivalent of "catch". A acquires these uses. Now as the interaction goes on, A builds a model of B's understanding of the word "catch" in order to learn. *B* also builds a model of A's understanding of the word "catch" in order to teach.

The important thing, of course, is not that A has correctly suppressed a usage of "catch" transferred from LI, and successfully acquired two correct usages. What is important is that s/he can now see the connection, in his/her conceptual system, of the uses of "catch" in all the contexts in which the word is used, and derive from these uses a more accurate meaning of the item.

Here again, we have come to the issue of devising appropriate tasks for instructional design. Communication threshold serves as a go or no-go communication traffic light. However, this threshold is generally easy to surmount. Languages have built-in redundancies (e.g., Words in a sentence can explain and predict each other). Contextual clues help prevent communication from a total breakdown even if participant A's use of an item is not in agreement with B's. Furthermore, a specific task may not exact a high level of accuracy in communication. If the task based syllabus hopes to enable learners to attain a high L2 competence (both fluency and accuracy) by utilizing self organization in task context, it has to be able to fine tune the tasks so as to raise the communication threshold to present increasingly greater challenges to learners.

Some of the techniques for fine tuning the tasks may actually include the reduction of language redundancies and removal of some contextual clues in addition to devising tasks which require higher accuracy of language use. Complementary to successively fine tuning the tasks is to motivate and enable the learner to acquire some sensitivity and conscious control over his/her learning, so that even if a communication task is accomplished with less than perfect L2 use, the learner will reflect on his/her L2 system and revise part of it to move it closer to the target L2 system.

Coherence

Coherence is a desired result of conversations. Pask (1984) speaks of coherence at three levels. Firstly, there is the coherence of procedures that make up a particular personal concept and coherence between new procedures a personal concept produces and other existing concepts (p.9). Secondly, there is the coherence, also called agreement between participants A and B. The process of achieving type two coherence was described in the preceding section. Thirdly, there is coherence of concepts in a mental organization. In L2 lexical acquisition, type three coherence refers to the coherence at the level of a subsystem such as the entire L2 lexicon or grammar and at the level of the L2 system. A language item, whether a grammatical category or a lexical item, exists in a network system. This fact entails that an L2 learner needs to achieve agreement not only at the level of individual items, but also at the level of the whole subsystems. However, how this level of coherence is achieved is unknown. Here we will

concentrate on type one coherence. Type one coherence in L2 learning is automaticity achieved through the within-participant information transfer, which is defined by Pask in terms of awareness within a participant. "So, as you learn, there is a stage of awareness of[x] how to do things', even though you may not be proficient at doing it. As conceptual proficiency increases, so you are increasingly aware of what to do, but find it hard to answer a[s] how question'. Later still, a concept is applied automatically and, as a rule, proficiently. There is no internal information transfer, unless various kinds of disturbances take place." (Pask 1984, p. 11)

Is this type of information transfer and coherence applicable to L2 lexical learning? The answer seems to depend on whether L2 learners using communicative approach are conscious of the linguistic rules being acquired. Unfortunately, this is still an unsolved issue in L2 research (Chaudron 1988, pp. 6-7). We believe that learners vary in degree of their awareness of their actually constructing and applying "algorithms" when first using an L2 lexical item or a grammatical item. In a sense, it does not matter here whether they are aware of the process of constructing and applying the procedures. What matters is the fact that the execution of the procedures when trying for the first time to use an item takes longer time and takes up more attention space than if the item is familiar to the learner. The longer time and more attention space are needed for the internal information transfer.

Ideally, automaticity should occur alongside the evolution of the interlanguage item toward the target L2 item. Both of these processes occur in a self organized learning in a task environment. The application of an item by executing a set of procedures in the task domain produces a new set of executable procedures. In other words, to the learner, each application of the lexical item in a new context is a hypothesis test, which may well result in a set of revised procedures or new procedures.

Before automaticity is fully achieved, the information transfer via the feedback loop is still open. The learner is in conversation with him/herself in assessing the meaning of the item in each new context and in hypothesizing the criteria of L2 lexical information organization. Thus, the applications of an item, on the one hand, helps to move the learner's conceptual understanding of the item closer to that of native speakers'. On the other hand, each application of the item in the task domain makes the procedures more coherent and when a sufficient range of contexts in which the item is used has been familiarized and no new procedures are produced through applications, no internal information transfer between the precept of the concept and application of it is needed. The execution becomes more automatic.

Fossilization

All the three types of coherence are very desirable in L2 learning. Here L2 learning differs from the learning of other subjects such as sciences. In learning a science, cognitive growth is in terms of cognitive complexity. Pask's type three coherence and its subsequent conflict with the need to maintain identity and

distinctiveness of concepts captures the insights that cognitive growth proceeds by concept cohering and splitting, an apparently paradoxical process. Coherence and no information transfer could mean intellectual stagnation. In L2 learning, cognitive growth is in terms of conducting cognitive activities in another conceptual/linguistic system. All the three types of coherence are ends in themselves. However, it is crucial to keep automaticity from setting in before type two and three coherences attained the desired level.

In terms of conversation theory, fossilization can be defined as coherence of type one without coherences of type two and three. That is, the learner gets into the automatic execution of procedures and stops being self-organizing. Unfortunately, such automaticity often occurs before the learner's personal concept has successfully evolved to the target L2 concept and before the learner's interlanguage subsystems and system have evolved to the L2 subsystems and system. Thus, a learner may speak L2 with a foreign accent all his/her life, use LI structure all the time (e.g., "He has been here since three years), and use LI lexical meaning (e.g., *Close* the light, please).

The solution to fossilization is of great interest to instructional design in L2 learning. According to our analysis of fossilization, the solution seems to lie in introducing disturbances with the aim to make the learner alert about his/her uses of an item. In other words, ways must be found to help the learner set up the feedback loop again for information transfer between the conceptual understanding and execution procedures in the task domain, so that the learner will once again perceive disagreement between his/her uses and participant B's uses of the item and revise his/her understanding.

The disturbances are generally in the forms of new challenges or difficulties which halt the automatic execution of procedures and force the learner to reexamine his/her understanding and uses of the item. Ironically, redundancy in language and contextual clues, which facilitate communication, present some difficulties for designing ways to alert the learner. For example, short of explicitly pointing to the learner that his/her use of "close" in "Close the light, please" is in disagreement with the L2 lexical system, how do we design tasks that raise the communication threshold to block the communication because of this use of "close"? In most cases, when the communication threshold does not catch an interlanguage item by blocking the communication, the natural mechanisms in the learning environment, which set the learner to be self-organizing, cease to function.

In a situation like this, some recourse must be found to continue to move the interlanguage item toward the target L2 item. One is the explicit pointing to the item to the learner by a teacher or tutor. This is error correction. Chaudron (1988) reviewed empirical studies on error correction in L2 classroom and concluded that error correction does not constitute a major proportion of the activity in L2 classroom which focuses on communicative activities and that it is a great error to assume that what occurs as "correction" in classroom interaction automatically leads to learning on the part of the student (pp. 134-153).

If customary error correction consists of simply pointing out the error and providing the correct use of a word or correct word for a situation, lack of effectiveness is perhaps due to two causes. First, this is a simplistic approach. As we have seen, the meaning of a language item is culture-based. A key factor in acquisition of the item is experiencing the culture, on the basis of which the learner learns criteria of lexical information organization and the principles for making inferences in cases of incomplete data for a judgement. Conversational error correction works largely at the level of linguistic forms instead of culture experiencing. Secondly, since the acquisition of the meaning of an L2 item requires experiencing relevant L2 culture and experiencing has its own rate of progression, which is still largely unknown, the learner has an "internal syllabus". This explains why the learner may readily learn some items but not others despite repeated corrections. Error correction basically ignores this learner readiness factor.

However, error correction has its usefulness as a complementary approach. First of all, it calls the learner's attention to his/her use of an item and may make him/her notice the disagreement, which, otherwise, may never come to his/her attention. Secondly, when left alone to figureout the meaning of an L2 lexical item and its usage entirely on his/her own, the learner generally needs more time to form, test and reform the hypotheses before s/he finally gets the L2 conceptual understanding and usage of an item. Some learners may never get it. Thirdly, error correction as a recourse supplementary to communication focused activities can overcome the problems mentioned above, if the task context in which the learner is self organizing provides ample opportunities for L2 culture experience.

The implication of this analysis is that when task based syllabus could not be provided or when it becomes too expensive to design the task environment at a high fine tuning level in order to continue to utilize learner's self organization, instructional design should consider other recourses as complementary approaches.

CONCLUSION

A semantic and cognitive analysis reveals that L2 lexical acquisition must have an L2 cultural experience base. The best environment for such a base to form is an L2 task context. However, the task context has to be arranged in such a way that the relevant participant residing in the learner is self organizing. Only when self organization is activated, can the task becomes an effective source of L2 lexical information.

Effective and optimal utilization of self organization of ~p' individuals presents a great challenge to task-based syllabus and L2 instruction design in general. The learner must be self organizing and yet must not be overwhelmed by the task complexity. Furthermore, we have yet to find a way to prevent automaticity from setting in before desired level of type two and type three

coherences is achieved. Finally, task-based syllabus can be profitably complemented by more linguistic form oriented approaches such as error correction.

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