To David
With compliments
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A WORD IN SEASON: CONCEPTS, CONTEXTS, AND COMMUNICATION OF MEANING

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Words seem to have a life of their own. We speak of cutting words, wise words, sweet words, soft words, ugly words, words in season and untimely words, odd words, taboo words, and overly familiar words. Words are of the essence of our personal and professional lives, of our innermost feelings, and of our courteous exterior. We speak of word power, of being at a loss for words and being left wordless. We do not even know for sure how many words there are in our language, nor how many we ourselves know. Here I am using the term "words" to cover not only individual words, but also phrases and short sentences that serve many purposes _ set expressions or lexical phrases (Nattinger 1988) as we sometimes call them. Words in this sense are building blocks that combine to form the structure of meaningful messages.

Words play tricks on us. Because we know the words or understand the words, we think we understand the message or the speaker's intention. We understand many words for which we are at a loss to give a precise meaning. Changing circumstances bring us new words with which we have to develop familiarity to feel comfortable _+"fungible" and "virtual" reality, for instance. Old words change meanings as we grow older. A younger generation feels at home with "heavy metal", as their parents did with "rock"

No wonder that acquiring words and their meanings is the most important part of language learning, and the most difficult for a nonnative speaker to control. To learners of a new language, even onomatopeic words

are a new experience and not necessarily obvious in meaning, although context helps. An English-speaking child will wave a piece of wood and cry: "Bang! Bang!" while a French-speaking child will cry "Crac! Crac!" An English sheep will "baa", while a Spanish speaker will hear "meee". *Crac, Bang/ Baa, Meee* _ knowing the meaning of the action and the sound represented by these expressions, we may declare some similarity, but objectively we must admit that in phonological shape and graphic representation, they have little in common. We are all familiar with the concept of the arbitrary relationship between sound-form and meaning. Even so-called onomatopeic words are specific to particular languages and only represent the sound that the speakers of that particular language have chosen to perceive.. This is the simplest of our problems.

Unfortunately, meanings in first and second languages rarely occur as one-to-one equivalents in substitutable words, even for simple concrete objects. Such common items as *bread* and *lemon* have different meanings for persons of different languages and cultures. "Bread " to the French represents the warmth of family togetherness over a meal; "lemon" to an American represents something disappointing _ an object that fails to be what it is vaunted to be and leaves a "sour taste in the mouth". Beyond these culturally rich connotations, meaning is also personal and covert, sometimes deliberately concealed in euphemisms or prevarications, especially in subgroup jargons (among children, or sports fans, among doctors or prisoners); at other times, it is partially and tentatively revealed through the selection of words, but frequently requires illustration or gesture to make it clear.

Meaning comprehended is a creation of the receiver: again personal, individual, and covert. Communication of meanings even in a common

language is not simple. How often do we hear such exclamations as: "He never understands what I tell him!" "She seems almost deliberately to misinterpret everything I say!" "They react in the strangest ways! Don't they understand plain English!" Winston Churchill once observed that England and the United States were two countries divided by a common language. Different world views can lead to quite different semantic content for outwardly identical words. We may speak, then, of the chameleon-like quality of words, whose meanings (and often forms) change and blend to create new meanings. Even borrowings from other languages cease to be reliable, as they interact with existing words of the language.

Words express concepts. What, then, is a concept? For Saussure "initially the concept is nothing;" it is "only a value, determined by its relations with other similar values and ... without [relations among values] the signification would not exist" (1959:117). What is the meaning, for instance, of *warm* or *cool*? For a language that has only *hot* or *cold* in its vocabulary, these are difficult concepts to pin down. Even for us, what is hot in one situation may be cold in another. We may find the room hot at a temperature at which we would consider the tea or coffee cold. In the Saussurean sense, *warm* and *cool* have a signification only in relation to *hot* and *cold*, to each other, and to such terms as *piping hot, tepid, lukewarm, warmish*, or *coolish*. Without a culturally accepted relationship among these terms, they have no definable meaning of themselves. Their meaning derives essentially from their relationships and associations.

Cognitive psychologists share this linguistic viewpoint. In the structure of memory, say Collins and Quillian, "a concept" is "a set of relationships among other concepts, not a primitive absolute...Everything is defined in terms of everything else"(1972:313-4). Darkness is absence of

light; without the existence of light, there would be no concept of darkness. What is twilight, for instance? _ between light and the absence of light or between the swallow and the bat, as one language puts it. Since concepts have no primitive term, no one absolute meaning, when may we call an object a cup and not a mug, a beaker, or a tumbler? When is a stone a stone and not a piece of grit, a pebble, a rock, or a boulder. Without the concepts of "pebble" and "rock" we would not be able to define "stone". Concepts are elusive and elastic, while words are definite and delimited, so the fit is difficult. Yet it is through words that concepts find expression in language use. Concepts straddle words, words straddle concepts and develop new meanings as they enter into different combinations and relationships. It is by using cups and beakers and mugs, by emptying our shoes of small pebbles, throwing stones, tripping over rocks, and climbing over boulders that we learn these concepts and understand their meanings in context. It is through such experiences that we learn to use words appropriately in our first language. If this is a lengthy process in our own language, how much more is it compounded by the shifting concepts behind the words of another language! Then, to muddy the waters further, idiom and metaphor enter the picture (This may not be your cup of tea, and you may consider that I am making mountains out of molehills.) No wonder learning to use a language is a lengthy and effortful process.

Concepts find realization in the words of a language (in this extended sense), and concepts, combining to form complex meanings direct the behavior of words. Concepts enter into the skins of words and push, shove, and pull them into combinations and associations to meet their purposes in the expression of meaning. It is similar concepts to those intended, aroused in our minds, that we as listeners use to extract meaning from the

combinations and permutations that we hear. Even then we can never be sure that the meaning we are creating is a perfect match. Nevertheless, this process makes communication of meaning sound at least possible, until context steps in.

Context is the broadest term of all. It can be linguistic, physical, or perceptual (including the individual perception of the physical or the linguistic); it can be social or psychological. The psychological context brings with it the effects of expectations, emotions, attention focus or distraction related to personal intentions, wants, needs, fears, and even ego involvement, often resulting in the extraction of a message the listener wanted to hear, rather than the one the speaker wished to convey. Concepts can find expression in words, but without context they are trapped, as it were, in sealed units or black boxes.

Hymes has pointed out that language users are not abstract isolated individuals, almost unmotivated cognitive mechanisms, as some linguists, teachers, and materials writers seem to see them, but they are persons in a social world who need to be able to communicate.(1979:8). To be able to communicate in a social world the student, quite obviously, must learn to communicate in a social world, not in a sterile test tube. So all use of language, second as well as first languages, must be in a meaningful context.

Terrell, the originator of the Natural Approach, recognized the importance of vocabulary and of learning vocabulary in a comprehensible context. In "A Natural Approach to Second Language Acquisition and Learning," he says: "The learning of vocabulary is the key to comprehension and speech production. With a large enough vocabulary the student(s) can comprehend and speak a great deal of L2 even if (their) knowledge of

structure is for all practical purposes non-existent" (1977:333). He quotes Bolinger as saying that anyone who has mastered a foreign language knows well that a great deal of the time is spent mastering the lexicon of that language _ "the most important thing is to get the words in" (1970:78). This view is also that of Lozanov, who has found that students can learn 2,000 words in 24 days in an intensive learning situation (1978: 321-2). These words should always be learned in comprehensible contexts. Students of Languages for Specific Purposes (LSP) especially need to be familiar with many words whose meanings they might not even have encountered in their own language. They should be learning content along with lexicon, so that they can develop the concepts along with the words in context.

Words apart from situations are mere formulas, and language becomes more like algebra, of a kind that is the delight of the abstract linguist. For the general run of humanity, language is fleshed out with meaningful words: expressive words, trite words, cliches, metaphorical expressions or idioms. Language teachers have long known this fact and have tried in many ways to help students to learn vocabulary. This process has never been easy, because vocabulary cannot be inculcated. It can only be learned by individuals, who absorb it into their cognitive systems (their semantic networks), because it seems to have some use or because it has a certain beauty or whimsicality that appeals to the learner.

Halliday's concept of "meaning potential" encapsulates this view of concepts and words. Halliday speaks of "sets of options, or alternatives in meaning [that is, choices] available to the speaker-hearer" in the context of a situation that is culturally determined (1973:72). He emphasizes the dependence of the meaning of each word, for the individual, upon practical experience and of the structure of each utterance upon the momentary

situation in which it is spoken. For Halliday, context refers to the inner as well as the outer context _ the outer context being the observable features of the situation, while the inner context, linguistic and emotional, is strongly influenced by the attitudes and values that the speaker-hearer has derived from the cultural environment.

In a new language then, we need practice in making choices, if we are to develop an extensive vocabulary that will enable us to express our meaning to the fullest. We need to acquire words for concepts through practical experience in culturally appropriate situations or authentic materials with which we feel involved. In this sense each student's vocabulary is an individual achievement and a personal possession, which can neither be used by another nor taken away from its possessor. It can be lost temporarily, only to be retrieved inexplicably through very personal associations, as with material that disappears from the computer screen only to turn up again at the most unexpected moment. Or it can become irretrievable in some more permanent fashion in ways we do not yet understand.

Let us examine for a moment the psychological mechanisms that account for the extraordinary ability we possess to expand our means of comprehension and expression daily, hourly, minute by minute?

The *first R* of vocabulary use is *recognition*. Learners of another language must perceive a particular group of sounds or graphic symbols as representing a specific meaning or set of meanings for the users of that language. Having perceived this fact, they must recognize a further occurrence of this form, in slightly varying pronunciation or graphic shape,

transparent across languages).

Semantic transparency, which helps with metaphorical expressions (e.g., coat of paint, flower bed, glass ceiling).

Each of these forms of transparency helps students to infer meanings of many unfamiliar words. To these may be added the *translation transparency* of cognate words and the modern industrial, professional, and cultural international vocabulary that is sweeping the world, e.g., jet, jazz, jeans, stress, information, pollution (see also Rivers 1983). Laufer (1989) reminds us of the need to warn students of the dangers of *deceptive transparency*: misleading morphological structure (e.g., "shortcomings" interpreted as "short visits"); idioms whose meaning is not made transparent by the elements of which they are constructed (e.g., "you can't bank on it"); false friends, that is, cognates that look or sound familiar but actually diverge in meaning (French/English: *accesion*); words with multiple meanings of which the students are aware of only one (English *bow* or *figure*); and synforms, or words that are coincidentally similar in lexical form, sound, or morphology (*crack*; *sew/sow*; *undiluted/undulate*). Students must be aware of the degree of their ignorance, so that they can maintain a cautious approach to apparent transparencies, checking their insights first against context and the development of the discourse, then in a dictionary only when the degree of frustration warrants it. The effort of figuring out meaning circulates the word through the cognitive system, thus increasing the probability of its being retained.

Awareness of the mechanisms of word formation in a new language provides the student with a vast area of what Palmer (1989) calls *potential vocabulary*, and with growing confidence students can draw on this reservoir, while watching out for possible traps and pitfalls (the word

"pitfall" being itself a semantically transparent word). In Haastrup's (1989) investigations in Denmark, the low English proficiency group (L) tended to draw inferences about the whole word from the context, while the high English proficiency group (H) looked for linguistic cues within the word to fill out the meaning that inference from context left imprecise. For example, in working out the meaning of "*insatiable* political ambitions", the L group decided "insatiable" meant "great", while the H group, delving into the form of the word, came up with "not to be satisfied" (Haastrup 1989:38).

Students can be encouraged to use such procedures as *tapping and tailing* (examining prefix, nucleus, and suffix); *dissolving compounds* (making expressions like "fail-safe", "child-proof" more transparent); *penetrating disguises* (applying regular phonological or orthographic transformations to words in the new language in order to detect hidden cognates, e.g., for Spanish speakers, such words as *security*: *seguridad* ; *physics*: *fisica* ; *photograph*: *fotografia*). Techniques like these reduce the information load for storage in memory. In reverse, students can be challenged to make up *possible words* of the language applying these transformations; this may occasionally produce non-existent words, but ones that sound perfectly English, Spanish, German, or French. For example, "glass shatterer" may not exist as an occupational word in English dictionaries, but it is a possible word, that conforms to the rules of word formation , for a demonstrator who takes out his or her frustrations on public buildings. In ways like these, we exploit potential vocabulary and make it actual, while giving the students a "feel" for the language.

Essential to all autonomous language learning for use is the inductive process of *inferencing*. According to cognitive psychologists, we possess a

semantic memory in the form of complex networks in which conceptual nodes (not verbal nodes) are linked by inferential relations that draw on redundancies within concepts. Thus there are innumerable directions in which these networks can take off. Perhaps *gatepost* does not link in your mind with *pouring rain* and *money in the pocket*, but it does for me, because one very dark night in pouring rain I forgot that my drive gate was closed, ran into a gatepost and collected accident insurance. Our personal networks are as distinctly individual as this.

Note that the nodes in semantic networks are conceptual, not language-specific. In 1985, when I was learning Spanish in Chile, I found myself one day, while traveling with a Spanish-speaking group, producing for a straightforward concept of opposition the conglomeration *mais aber sed pero*. I had reached the conceptual node for *but* and retrieved several associated words in different languages _ French (in which I am very fluent), German (of which I have elementary knowledge), and Latin (which I thought I had forgotten) _ before connecting with the sought-after Spanish word *pero* (Rivers 1981:510).

Words of a new language become linked in all kinds of ways with the interconnections of the conceptual networks and proceed to draw on the redundancies within established concepts and on the inferential relations among these _ in other words, we draw on our knowledge of the world, which is expanded and enriched by the cultural notions of the new language. As words and expressions are absorbed into the organizational structure they become usable. For effective use, however, the forms of the new language must be linked up with their own culture-specific inferences, which are created through experiences with the language within the culture, either in actuality or vicariously through authentic print and video

materials or contacts with native speakers in the area. We must come to know the limitations, expansions, and cross-associations of meanings in the new language in relation to apparently similar meanings of words and expressions in our first language. For this we need to experience the new expressions in a culturally and linguistically rich context. Language learning must be through purposeful use in culturally probable ways. According to Jenkins, "The mind remembers what the mind *does*, not what the world does" (1973:170). Vocabulary acquisition, like all aspects of language acquisition, is a dynamic process within a constantly active mind.

RETENTION

Time was when memory as regarded as a locatable storage space, a series of bins (short-term and intermediate stores, now more likely to be called working memory), through which selected items passed on their way to long-term storage. More recent models of memory are notably dynamic and process-oriented. Memory is now viewed as a process, whereby knowledge (factual and experience-derived) enters into networks with a multiplicity of interconnected nodes (like the neurons in the nervous system). The nodes are conceptual and the interconnecting networks are relational, as noted above. Entering information activates nodes, which activate nodes on nodes, so that processing of the information is effected by many processes occurring at the same time, that is, in parallel. Anything one encounters, and selectively or peripherally perceives, enters the networks and is immediately bounced around, compared, discriminated, matched, linked up in the networks with information related to it in a multiplicity of obvious and unexpected ways, to serve some purpose

eventually along with all the other elements operating in parallel. (For detailed description , see Hinton and Anderson 1989). Consequently, memories come to us in many unexpected ways and through a variety of sensory stimuli. As Rumelhart and Norman have expressed it, "Information is better thought of as 'evoked' than 'found' (in Hinton and Andersion 1989:17).

Memory storage is facilitated by *chunking* information, that is, grouping items according to some common feature or semantic link. Alliteration, for instance, links words beginning with a particular sound, so that "stinking, smoking stack" is easier to retain in memory than "malodorous, black-belching factory chimney". Vocabulary, it has been found, is learned more easily when there is some collocational link among items, for example, "castles, manors, and cottages" links different types of dwellings. Similarly the mind *organizes* material for storage: "the beautiful roses in the garden" is easier to remember than six disparate, unconnected words. Where words have no obvious relationship, we inevitably create a mental organization or semantic link to draw them together. Consequently, words learned in a short context are much more memorable. Visual images also organize material for recall; Roman orators, it seems, remembered the order of points in their speeches by picturing their passage through different rooms in a house and associating various points they wished to make with the sequence of rooms. (Many interesting examples of visual memory are recounted in Luria 1968.) The more we know about the way memory works, the more we can help students improve their learning strategies.

In recent years interest has revived in long-practiced techniques of *mnemonics* to help students remember unfamiliar words by developing all

kinds of links in their memory networks. Some learners are visually oriented and will create visual images that they associate with the new word _ images that in some way relate to the meaning of the word; the author has found this useful for remembering Chinese and Japanese characters, for instance. Others prefer to associate sound images, sometimes associating the new word with a sound image from the native language and a visual image that recalls the meaning of the new word (the Spanish *jefe*, for instance, might be associated with *heavy* and a visual image of a physically imposing leader, and *falda* might be associated with the *folds* in a skirt). This has been called the keyword technique and is discussed in more detail in Nation (1990:166-8). Other techniques are numerous or gestural associations; association with a word in a third language; learning the unfamiliar word in association with a familiar word of the new language (*una falda negra*); or associating the word with a musical intonation pattern, sometimes grouping several semantically related words (we all remember words we learned in songs, for instance, particularly refrains, or in rhythmic chants). Terrell (1986) describes a number of associational techniques that lead to binding of vocabulary. "Binding," he says, "is complete when the form evokes the meaning without delay and the form finally 'sounds like what it means'" (1986:214).

Because our associational networks in memory are very personal and individual, students, with encouragement and a few examples, will soon develop their own techniques, which will work much better for them, just because they are their own. For amusement, they may share these with their fellow students in the early stages. However they go about it, students need to develop ways of relieving the load on memory of great numbers of unfamiliar and confusing items. Through trying out other

approaches like these they will soon realize that simple rote memorization is ineffectual.

There is a strong affective element in what we will select and retain in memory. Learners will seek the meaning of words that are important to them in texts that interest them, and this involvement and attention focus facilitate retention. Since learners show a marked predilection for their own personally selected vocabularies, they should be encouraged to gather their own treasures from their reading and their communicative activities. This they will do if given some real choice in areas about which they are to read or converse. They should also be given many opportunities to introduce into their learning activities in speech and writing these personally culled vocabularies. Since rehearsal or recirculation in different contexts of material stored in memory helps strengthen associational links, games, word puzzles, and other activities that evoke these associations and encourage students to use vocabulary previously encountered are valuable; here, students can shine by demonstrating aspects of their personal vocabularies, and this is motivationally stimulating. Some provision should be made in tests for students to display vocabulary they have personally collected.

RETRIEVAL

According to recent theorists, because of the interrelationships of the semantic networks, items of knowledge and memory traces of events are not localized but *distributed throughout the system*: rather than our being able to retrieve them from one node or spot in long-term storage through a few cues or triggers, memory traces can be accessed anywhere in

the system through the multitude of different connections firing simultaneously; for this reason this approach to memory is called parallel distributed processing or PDP (1) It is the many relationships that make this possible. Consequently, memories come to us in many unexpected ways and through a variety of sensory stimuli. This approach tallies with common experience, where we are frequently bombarded with activated memories, perhaps on encountering a particular scent or taste (as with Proust's famous *madeleine*), or in searching for a word or the name of a person or place.

With this approach to memory, accessibility becomes the keyword as basic to retrieval. Schouten-van Parreren observes that often "when the memory of a word is 'forgotten', it has not disappeared from memory, but it simply cannot be retrieved" (1989:77). She reports on an experiment on retention of unfamiliar vocabulary acquired from reading of different types of material in different languages at various levels of difficulty. Through think-aloud protocols, she discovered that students used many different access roads to retrieve word meanings. She quotes the following strategies: (1) drawing on recollections of: the situation in which a word had occurred in the text; (2) recalling images that formed in their minds during the reading process; (3) recalling the literal word group or sentence in which the word occurred or the position of the word in the text; (4) recollection of the fact that the word had occurred more than once in the text, or (5) that a word with the same root had also appeared; (6) thinking back to the emotions or experiences that the word or text had evoked while they were reading, e.g., experiencing the word as "funny" or "strange", feeling proud about a correct guess or stupid when having to look the same word up twice (p. 78). These reactions are very illustrative of the many

ways in which the mind absorbs cues or triggers for retrieval and this supports the use in classroom learning of as many different approaches through different modalities as possible, thus allowing for the great diversity of learning styles and personal strategies gathered together in any one class. In this way, we ensure more accessibility for retrieval for more students than by imposing one way of learning on all.

Parallel distributed processing theory throws light also on the observed fact that speakers of several languages acquire a new vocabulary more easily than monolinguals and frequently produce in communication a word or expression from another language they know that seems to convey more appropriately a semantic nuance or a relationship; hence the mixing of languages that occurs when two or three speakers are equally bilingual. It also explains the word blocks speakers sometimes experience in their native language after a period of immersion in a second language, when the only word or expression that comes to mind is the way the second language encodes the concept. Syntactic structures also convey meanings and, again, having learned to operate within the syntactic systems of several languages seems to facilitate operation within yet another system for expressing propositional relations, time, aspect, comparison, actual and hypothetical occurrences, and so on. Parallel distributed processing further illuminates the "tip of the tongue phenomenon" (Brown 1970:274-301), when we seek for a name or a word in another language and come up with candidate words that are related phonologically, in what seem like extraordinary nonsequiturs (e.g., hula hoop, hooligan, Mulligan, *Goolagong*); or when we replace words when reading aloud with synonyms of quite a different perceptual shape (reading, for instance, "storm" when the word in the text is "tempest"). It also provides a psychological explanation of how it is possible to translate

from one language to another and to recognize the untranslatable (Rheingold 1989). It illustrates the way we find approximations in the second language to the meanings conveyed by the first when parallel terms do not exist; this process of paraphrasing and circumlocuting is a very useful one, for which the second-language learner should have much practice. Finally, it provides a plausible explanation for the speed with which simultaneous interpreters can perform their task.

In brief, then, vocabulary cannot be taught; it is learned by motivated individuals, in individual ways, to satisfy individual interests and needs. Imaginative teaching arouses this motivation. Even in the native language many people become fascinated with words, word puzzles, the use of fancy words. Learners will commit words and expressions to memory and retrieve them in very individual and idiosyncratic ways – the important thing is not how they are recalled, but their actual retrieval for active use in expressing personal meanings. For this, language learners need many opportunities to use their own resources in innovative ways. An interactive, participatory class encourages and rewards such creativity.

NOTES

1 For further discussion of parallel distributed processing (PDP) in relation to language learning, see W. M. Rivers (1990-91).

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