

BASIC & FUNDAMENTAL TERMINOLOGY IN PSYCHOLINGUISTICS

ACCESS CODE. The form in which spoken or written material is submitted to the lexicon (vocabulary store) for a word match. It is assumed that the words in our minds are grouped in sets rather like dictionaries. The sight of the letters ALO would open up a set which included ALOFT – ALONE–ALONG – ALOUD, and the reader would work through the set until a match was found for the word on the page.

ACQUISITION. The process of developing competence in a language. The term is used for infants acquiring their native language (first language acquisition) and for those learning a second or foreign language (second language acquisition). In this general sense, it is unproblematic; but researchers run into trouble when they apply the term to the mastery of a specific syntactic structure or lexical item. Here, 'acquisition' is often defined as having occurred when the target form is used with 90 per cent accuracy or in 90 per cent of contexts which require it.

ACTIVATION. An important metaphor in models of language processing, based on the way information is transmitted within the brain by electrical impulses. It is often employed in theories of lexical access. Thus, reading the sequence fro- would activate FROG, FROM, FRONT, FROST etc. for a reader. The items would not all be activated to the same degree: some (e.g. FROM) start off with an advantage (or perhaps a lower recognition threshold) because they are more frequent. If the next letter the reader encounters is g, this new information boosts the activation of FROG to a point where it 'fires': i.e. the word on the page is regarded as successfully matched to the item FROG in the reader's lexicon. At this point, the activation of the other words (known as competitors) begins to decay.

AMBIGUITY, LEXICAL. Ambiguity at word level, as represented in a sentence such as *Tick the right box*. Early experiments discovered that subjects' reactions were slower immediately after reading an ambiguous word. This suggested that the **processing of ambiguous words demands additional attentional resources** because two senses of the word are activated rather than just one.

AMBIGUITY, SYNTACTIC. The most recurrent is **standing ambiguity** where a sentence remains ambiguous even after it is complete. In (e.g.) John killed the man with the gun, the gun might be carried by either John or the man, and the ambiguity can only be resolved by the **wider context**.

ANXIETY. General anxiety is one of several affective factors which can influence **attention** and hence lead to a **deterioration** in **language performance**. But there are also specific types of anxiety related to language which reflect the complexity or perceived importance of a language task and the extent to which the task places a premium on accuracy (in exams for example). An additional factor might be the individual's uncertainty about their ability to perform the task. Anxiety might result from introvert personality traits, from a lack of self-confidence or from awareness of limitations in a particular language skill area.

APHASIA. A disorder in the ability to produce or to understand **spoken language**. It usually results from brain damage caused by an accident, a stroke or invasive surgery; but some accounts include the effects of dementia. Evidence from aphasics provides possible insights into the location of

language in the brain, and into the constituent parts of language processing, some of which may be lost by an aphasic and others retained.

ASSOCIATION. The way words are associated in the mind. Subjects in word association tasks usually respond with a word that is connected to the stimulus by meaning rather than form. Words which rhyme with the stimulus (clang responses) are relatively rare. This suggests that **meaning associations in the lexicon are stronger** than those of phonological or graphological similarity. The meaning associations are usually **based upon semantic groupings**, not physical resemblance (needle associates with thread rather than with nail). There is also a tendency to choose a word in the same word class as the stimulus.

The three strongest **types** of association appear to be: **co-ordination** (salt and pepper), **collocation** (butterfly and net, salt and water) and **superordination** (butterfly and insect). However, co-hyponyms (butterfly and moth, red and green), synonyms (hungry and starving) and 'opposites' (hungry and thirsty) also feature.

ATTENTION.

ATTRITION. The decline of competence in a language over time, usually as the result of contact with another language. Attrition is distinguished from language loss as a result of ageing.

- 1- **Primary language attrition** particularly affects **immigrant populations**, and arises as the result of extended exposure to a second language and of circumstances in which the first language is little used. Attrition may be indicated by a speaker's inability to make grammaticality judgements in the native language, but is often evident in performance: in an inability to retrieve vocabulary, in a loss of native-like pronunciation, in the use of non-standard syntax or in a general lack of fluency. Attrition tends to affect production to a greater degree than reception, and may also vary between writing and speaking.
- 2- **Second language attrition** commonly occurs when a speaker has not had occasion to use a foreign language for some time. It is difficult to research because of the difficulty of establishing the level of competence in L2 prior to the attrition; but it would appear that lexis is more readily subject to attrition than syntax. Some commentators argue that language is represented differently in the minds of native and non-native speakers. If this is the case, then L2 attrition **may be different in kind** from primary language attrition.

CAPACITY THEORIES. Theories based on a view that the processing of linguistic information is affected by the limitations of the human processor. The constraints on performance are usually said to derive from our limited **working memory capacity**, which determines the amount of information we can process at any given time and/or the number of processes that we can apply. If one task demands great resources of attention, it restricts the amount of working memory that is available for performing others. Thus, if a reader has to focus a great deal of attention upon decoding the words on the page, he/she has very limited resources to spare for building the words into higher-level meaning. It is advantageous for us to develop a high degree of automaticity in performing tasks such as decoding. Automatic processes make few demands upon working memory, leaving us with ample capacity for other operations

CHILD DIRECTED SPEECH (CDS). A speech register used by adults when addressing infants. Also known as motherese, parentese, caretaker talk, baby talk. Parents simplify their speech in consistent ways when speaking to children. For English speakers, the linguistic modifications include:

- 1- Phonological features: simplification, higher pitch, emphatic stress, greater pausing, longer pauses, a slower speech rate.
- 2- Lexical features: restricted vocabulary, local topics, special forms.
- 3- Syntactic features: shorter utterances, less complex utterances.

CHUNKING. Memory constraints mean that we can only deal with a limited number of pieces of information (probably around seven units) at a time. The way in which we overcome this limitation is to 'chunk' or combine items into larger units. There appear to be a large number of lexical phrases and syntactic sequences in our lexicon which are pre-assembled and which we produce as a single chunk with a single or composite sense (e.g., should've = past + obligation + unfulfilled). These sequences make a major **contribution to fluency**: they enable speakers to assemble sentences efficiently without undue pausing for planning.

CLUTTERING. A disorder **affecting fluency**, in which the sufferer attempts to speak too quickly, resulting in distorted articulation and disrupted rhythm. Syllables may be truncated, words repeated, sounds omitted or misarticulated. It is possible that planning at the phonetic level is implicated: speech is uttered in staccato bursts, which sometimes interfere with syntax. As the utterance proceeds, the speaker may well speed up (festination) rather than slowing down. Cluttering sometimes occurs in conjunction with stuttering. One possible cause is brain damage.

CONCEPT. The core (decontextualised) meaning of a word; the set of entities or events in the real world which a word is understood to refer to. The notion has impinged upon psycholinguistics in several ways:

- 1- Issues raised by linguistic determinism. If our perception of the real world is indeed shaped by the language we speak, then it should be possible to provide evidence that conceptual categories vary markedly from language to language.
- 2- The question of how concepts are represented in the mind. How can we recognise an animal as a tiger if it does not possess the full characteristics of the animal – if it has lost its teeth or its tawny colour? The situation is complicated by the fact that some concepts have vague boundaries: it is difficult, for example, to say where a RIVER ends or where a MOUNTAIN becomes a VALLEY.
- 3- The process of concept formation in which initial conceptual categories developed by infants are gradually adjusted to resemble those of adults.

CRITICAL PERIOD. A period early in life during which a human being is uniquely endowed with the capacity to acquire a first language (also applied to second language acquisition). Some commentators prefer the term sensitive period, arguing that language can be acquired outside the period, even if less completely.

DISORDER. In psycholinguistics, a divergence from the normal processes of speech and comprehension which is due to cognitive or affective factors. Elsewhere, the term also covers problems of speech production and reception which are physiological in origin.

FLUENCY. The ability to speak a first or foreign language at a natural rate, with appropriate prosody and without disruptive hesitation patterns. The impression of fluency derives partly from predictably placed planning pauses and from a lack of pausing within syntactic or intonational units. Fluency is partly achieved by composing recurrent sequences into memorised chunks which can be produced ready-formed, thus reducing the burden of planning utterances. Foreign language learners who have been resident in target-language environments give an impression of increased fluency which derives from reduced pausing and greater average length of run (number of syllables between each pause). Their rate of articulation does not increase markedly, however.

FOSSILISATION. Persistence by a second language learner in producing an incorrect syntactic form despite continuing exposure to correct forms. It can also be a state in which the overall linguistic and communicative competence of a language learner reaches a « *learning plateau* » and fails to progress—sometimes because the learner is no longer motivated, sometimes because he/she is conscious of having achieved an acceptable level of comprehensibility.

INFORMATION PROCESSING. An approach developed by Donald Broadbent in the 1950s which aims to chart the flow of information through the mind as a particular cognitive task is performed. Underlying the approach is a view that the information is acted upon stage by stage and progressively reshaped. There is a fixed sequence to the mental operations involved, which can be represented in flow-chart form. This approach to analysing cognition has influenced psychological descriptions of the language skills, which are seen to involve passing linguistic information through various levels of representation (e.g. sound, syllable, word, syntactic structure), at each of which it is combined and reclassified. The information-processing approach also underlies the influential three-store model of human memory. This represents information from an external stimulus being passed in turn through: a sensory store, a short-term store and (potentially) a long-term store.

LANGUAGE ACQUISITION DEVICE (LAD). A Term formerly used by Chomsky (1965) for a hypothesised innate mechanism in the brain of an infant which triggers and supports the process of acquiring a first language. Now replaced by the notion of an innate Universal Grammar which specifies features common to all languages.

LONG-TERM MEMORY (LTM). A store for permanent information, including world knowledge, the lexicon and general linguistic competence. In many accounts, LTM is distinguished from a sensory memory store of very brief duration, and from a limited-capacity working memory (WM) which holds currently relevant information and handles cognitive operations. LTM supplies information to WM when it is required and receives information from WM that is destined for long-term storage.

PERCEPTION. The operation of analysing a stimulus. Particularly applied to bottom-up processes, where the language user is decoding information that is physically present on the page or in the speech signal. Decoding in reading is often referred to as visual perception and decoding in listening as auditory perception. An important distinction is made between perception and sensation, the unanalysed experience of sound reaching one's ear or visual patterns reaching one's eye.

PROCESSING. The analysis, classification and interpretation of a stimulus. In psycholinguistics, particularly used for the cognitive operations underlying (a) the four language skills (speaking, listening, reading, writing); (b) the retrieval of lexical items; and (c) the construction of meaning

representations. The term sometimes refers more narrowly to the receptive process of listening and reading.

Current models of processing owe much to early information- processing theory, which represented cognitive behaviour in terms of mental states and of processes that modify the states in clearly defined stages. One development was a view of language processing as involving the transmission of linguistic data through a series of levels of representation (feature, phoneme/letter, word, syntactic unit), at each of which it was reshaped.

SCHEMA THEORY. A schema (plural: schemas or schemata) is a complex knowledge structure which groups all that an individual knows about or associates with a particular concept/vocabulary item.

As an example, an adult has a schema for RESTAURANT which entails: waiters/waitresses – a meal (not a snack) – a meal eaten on the premises – a main course with optional first course and dessert – menus – a bill – a chef (unseen) – cutlery – glasses – napkins etc. This begins as episodic knowledge based on individual experiences of restaurants, but turns into semantic knowledge as the individual's experience of restaurants grows.

SHORT-TERM MEMORY. A memory store in which information is briefly retained for the purpose of a current piece of processing. The information may come from external sources (e.g. a visual or spoken stimulus) or may have been withdrawn from the more permanent store in long-term memory. The term working memory is often preferred to short-term memory because it emphasises the fact that this component of memory does not simply store information but also processes it.

SLIPS OF THE TONGUE (SOT). Speech errors by normal speakers which provide insights into: (a) how we store and retrieve lexical items; and (b) how we assemble speech. Most errors are collected during normal conversation, but the data is sometimes supplemented by errors which are induced under laboratory conditions. Evidence from selection errors is often supported by evidence from Tip of the Tongue (TOT) experiments.

There are two main types of SOT:

- 1- **Selection errors**, where there is a problem in retrieving a word from the lexicon. It might involve the substitution of one word for another (castanets ! clarinets) or it might result in words or non-words which are blends of two related items (expect p suppose ! expose; shout/yell ! shell).

This type of error provides insights into how items are stored in the lexicon and how they are retrieved. The substituted word is often linked to the target by similarity of form or by similarity of meaning; sometimes both seem to be involved. Selection errors thus demonstrate that both meaning and form play a part in the way we associate words in our minds and the way we retrieve them when we need them.

In terms of meaning, the substituted word is often an antonym of the target or from the same lexical set. In terms of form:

- a- Beginnings and endings of words are often correct, and thus seem to be important cues in retrieving words. This is sometimes called the bathtub effect: the important parts of the word are like a bather's head and feet sticking out of the water.
- b- The stressed syllable of a word is more likely to be correct, especially if the word is a short one. In addition, the stress pattern of the target word is often retained, and may be a characterising feature.
- c- The number of syllables is often correct. When it is wrong, there seems, in English, to be a tendency towards a three-syllable substitute word.
- 2- **Assemblage errors**, where the appropriate lexical item is retrieved but is not produced correctly: example, caterpillar ! patter-killer. Or a whole string of words is planned but is delivered in the wrong syntactic order. By identifying different types of assemblage error, we can identify stages in the process of constructing an utterance and the order in which they seem to occur. Assemblage errors provide insights into:
 - a- Choosing a syntactic structure that fits the target verb; Example: She swore me to secrecy ! She promised me to secrecy
 - b- Fitting words into a syntactic frame; Example: one spoon of sugar ! one sugar of spoon
 - c- Attaching inflections; Example: she slants her writing ! she writes her slanting
 - d- Assignment of lexical stress; Example: moBILity ! mobility
 - e- Phonetic planning for articulation. Example: fight very hard ! fart very hide

One finding from assemblage SOTs is how robust the syllable is. Individual phonemes become dislocated, but they end up in the same syllabic position (beginning-middle-end) as in the target. This suggests that the syllable may be an important unit of planning.

SOT data is not easy to obtain. To be sure of the context in which slips occur, they should ideally be recorded. However, slips are not frequent in speech; indeed one of the remarkable things about speech is that it is so error-free.

Some slips are difficult to categorise in terms of what the speaker's intention was and of how that intention failed. It is also important to distinguish between Slips of the Tongue and malapropisms (e.g. bubonic plague → blue bonnet plague) which are due to the speaker's ignorance of the correct term.