

PSYCHOLINGUISTICS: A CROSS LANGUAGE PERSPECTIVE IN ENGLISH LANGUAGE TEACHING

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ABSTRACT

This study is to investigate whether the application on the Psycholinguistics research significantly discusses in the process english language learning and teaching especially Cross-linguistic studies. Cross-linguistic studies are essential to the identification of universal processes in language development, language use and language breakdown. The concept of method has been substantially conditioned by the sources and principles on which the different methods have emerged throughout history. Accordingly, methods have been characterised by the virtues and deficiencies of such sources and principles. Due to easily understandable reasons, methods have not hitherto had access to the essential cognitive component in learning: the biological support on which it depends, that is to say, the brain, its structure, its functioning, and both the and psycholinguistic elements and processes which trigger learning. It is argued that these factors should not only be studied and considered, but that they should be urgently integrated into the construct of method and its practical implications. Comparative studies in all three areas are reviewed, demonstrating powerful differences across languages in the order in which specific structures are acquired by children, the sparing and impairment of those structures in aphasic patients, and the structures that normal adults rely upon most heavily in real-time word and sentence processing. It is proposed that these differences reflect a cost-benefit trade-off among universal mechanisms for learning and processing (perception, attention, motor planning, memory) that are critical for language, but are not unique to language.

KEYWORDS: Language teaching method, cognitive processes, psycholinguistics

INTRODUCTION

Psychologists have long been interested in language, but psycholinguistics as a field of study did not emerge until the 1960s. It was motivated by Chomsky's work in linguistics, and by his claim that the special properties of language require special mechanisms to handle it (e.g., Chomsky, 1959). The special feature of language on which Chomsky focused was its productivity. Possessed with a grammar, or syntax, humans can produce and understand novel sentences that carry novel messages. We do this in a way that is exquisitely sensitive to the structure of the language. For example, we interpret *The umpire helped the child to third base* and *The umpire helped the child on third base* as conveying distinct messages, although the sentences differ in just one small word. We know that *He showed her baby the pictures* and *He showed her the baby*

pictures describe quite different events, even though the difference in word order is slight. We can even make some sense of *Colorless green ideas sleep furiously* (Chomsky, 1971), which is semantically anomalous but syntactically well formed. The same kinds of abilities are found at other levels of language. We combine *morphemes* (units of meaning) in systematic ways, and so understand Lewis Carroll's (1871/1977) *slithy toves* to refer to more than one tove that has the characteristics of slithiness. And we can combine *phonemes* (units of sound) according to the patterns of our language, accepting *slithy* but not *tlithy* as a potential English word.

Early psycholinguists described our comprehension and production of language in terms of the rules that were postulated by linguists (Fodor, Bever, & Garrett, 1974). The connections between psychology and linguistics were particularly close in the area of syntax, with psycholinguists testing the psychological reality of various proposed linguistic rules. As the field of psycholinguistics developed, it became clear that theories of sentence comprehension and production cannot be based in any simple way on linguistic theories; psycholinguistic theories must consider the properties of the human mind as well as the structure of the language. Psycholinguistics has thus become its own area of inquiry, informed by but not totally dependent on linguistics.

Although Chomsky and the early psycholinguists focused on the creative side of language, language also has its rote side. For example, we store a great deal of information about the properties of words in our *mental lexicon*, and we retrieve this information when we understand or produce language. On some views, different kinds of mechanisms are responsible for the creative and the habitual aspects of language. For example, we may use morpheme-based rules to decompose a complex word like *rewritable* the first few times we encounter it, but after several exposures we may begin to store and access the word as a unit (Caramazza, Laudanna, & Romani, 1988; Schreuder & Baayen, 1995). *Dual-route* views of this kind have been proposed in several areas of psycholinguistics. According to such models, frequency of exposure determines our ability to recall stored instances but not our ability to apply rules. Another idea is that a single set of mechanisms can handle both the creative side and the rote side of language. Connectionist theories (see Rumelhart & McClelland, 1986) take this view. Such theories claim, for instance, that readers use the same system of links between spelling units and sound units to generate the pronunciations of novel written words like *tove* and to access the pronunciations of familiar words, be they words that follow typical spelling-to-sound correspondences, like *stove*, or words that are exceptions to these patterns, like *love* (e.g., Plaut, McClelland, Seidenberg, & Patterson, 1996; Seidenberg & McClelland, 1989). In this view, similarity and frequency both play important roles in processing, with novel items being processed based on their similarity to known ones. The patterns are statistical and probabilistic rather than all-or-none.

Early psycholinguists, following Chomsky, tended to see language as an autonomous system, insulated from other cognitive systems. In this *modular* view (see J.A. Fodor, 1983), the initial stages of word and sentence comprehension are not influenced by higher levels of knowledge. Information about context and about real-world constraints comes into play only after the first steps of linguistic processing have taken place, giving such models a *serial* quality. On an *interactive* view, in contrast, knowledge about linguistic context and about the world plays an

immediate role in the comprehension of words and sentences. In this view, many types of information are used in *parallel*, with the different sources of information working cooperatively or competitively to yield an interpretation. Such ideas are often expressed in connectionist terms. Modular and interactive views may also be distinguished in discussions of language production, where one issue is whether there is a syntactic component that operates independently of conceptual and phonological factors. Another tension in current-day psycholinguistics concerns the proper role of linguistics in the field. Work on syntactic processing, especially in the early days of psycholinguistics, was very much influenced by developments in linguistics. Links between linguistics and psycholinguistics have been less close in other areas, but they do exist. For instance, work on phonological processing has been influenced by linguistic accounts of *prosody* (the melody, rhythm, and stress pattern of spoken language) and of the internal structure of syllables, and some work on word recognition and language production has been influenced by linguistic analyses of *morphology* (the study of morphemes and their combination). Although most psycholinguists believe that linguistics provides an essential foundation for their field, some advocates of interactive approaches have moved away from a reliance on linguistic rules and principles and toward a view of language in terms of probabilistic patterns (e.g., Seidenberg, 1997).

Language teaching methods have usually arisen within the school setting, which is a normal fact taking into account that this is the usual context where teaching has been (and still is) developed. The methods emerged in the school tradition have always been strongly conditioned by the prevalent linguistic theories at the time, both in their conception and in their nourishing sources. In spite of this, it should be recognised that the study of other factors, together with those linguistically-rooted, has enriched teaching theory and practice. These are pedagogical factors, experience (as based on perceived and therefore “experienced” facts), or certain psychological factors of a behavioural nature, such as the case of the Audiolingual Method, which constitutes a clear example of the transference of the results from empirical studies on animal learning into human learning. To a greater or lesser degree, all the preceding factors have undoubtedly constituted the underpinnings in the construct of method. Indeed, none of these disciplines should be excluded. Nevertheless, psycholinguistic parameters have hardly been considered in the theoretical and practical foundations of any method. What we precisely argue in this article is that the absence of psycholinguistics and in the configuration and discussions of language teaching methods is critically flawed. The purpose of psycholinguistic research is to uncover universal processes that govern the development, use and breakdown of language. However, to the extent that research in a given subfield of psycholinguistics is dominated by English, we cannot distinguish between universal mechanisms and English-specific facts. We believe that if language learning is a type of knowledge, knowing the psycholinguistic mechanisms and processes that occur in our mind when learning will be a useful basis, not only to teach foreign languages more effectively, but to conceptualise a method of action as well.

TRADITION AND COGNITIVE FACTORS IN LANGUAGE TEACHING METHODS

Due to their own nature, methods constitute a very important aid for teachers and students, since they offer an integrated, coherent and ordered guide or method of action. We should remember that every method poses advantages and disadvantages, that is to say, they are subject to unavoidable limitations. The disadvantages of a certain method argument if its definition or configuration does not correctly integrate all the necessary elements that should be present. From the perspective of the reasons and motivations that underlie a method and the sources which nourish its principles, it must be stated that if such reasons and motivations are slanted or incomplete, the resulting methodological construct would also be slanted and incomplete. As stated above, the absence of psycholinguistic factors in the configuration of methods constitutes an undesirable omission. In what follows we will analyse how the cognitive principles and processes previously described in section II have either been included or omitted in major foreign language teaching methods. language learning focuses on how universal cognitive processes in language learning and individual differences account for differences in language learning patterns. An introductory section gives background information suggesting that psycholinguistic factors in language learning should receive more attention for two reasons: increasing evidence that there is a critical period for language learning, and the increasing importance of meaning over form as learners age. Subsequent chapters address these issues: comprehension and production strategies in language learning; the role of memory and lexical learning; psycholinguistic processes in language use and language learning; models of language learning

PSYCHOLINGUISTICS AND ENGLISH LANGUAGE TEACHING

Psycholinguistics has taken a particular interest in studying the process of learning and teaching foreign language, especially nowadays, when the role of the teacher is different from the traditional role of teacher in many ways. The studies that we have been carrying out show the “never ending role” of the teacher he / she must take into account a lot of factors which may have an impact on teaching/learning English. From the whole psycholinguistics variables which influence the process of teaching/learning a foreign language, maybe age is an extremely important factor. It is closely related to motivation, abilities and the methods of teaching/learning a foreign language. The teacher provides stimulus and opportunities for the student to experience the language, but the learning occurs inside of the student. The teacher does not have direct control over this. In many activities, the teacher will perform the regular role of language instructor. He /she will present new language, exercise direct control over the learner's performance, evaluate and correct it while activity is in progress, the teacher may be a consultant or an advisor. He/ she may move around the class to check for the strengths and weakness of the students. The teacher can also be a participant in an activity, introducing challenges. As a rule, the teacher sets up the activity and explains the procedure. The students are then free to take the activity in almost any direction they wish providing they stay within given conditions. It may be necessary to move into one method or another slowly because the student are probably not used to all the types of activities. The teacher must make sure that the student know what they are supposed to do in activity. It would probably be wise to begin with activities that make relatively light demands on the student linguistically and from there move step by step to more complicated/ demanding work. This will help build the students' self confidence. With a lot of

encouragement and support from the teacher, creativity usually increases dramatically in the classroom. The teacher can hinder the development of creativity by intervening too much or at the wrong time. The mother tongue should not to be used in the classroom unless absolutely necessary. The teacher should be a psychological support for shy or slow student. Extra assistance and easier roles Can be given to these students in the intial stages so that they have more time to build their self confidence. The taeacher must be understanding, patient, tolerant, genly critical, very encouraging and helpful. Teachers must create classroom atmosphere where the student feel comfortable experimenting with the language. Students should not feel intimidated or afraid to make a mistake. The classroom atmosphere must give the students a feeling of security and value as individuals and must break down their inhibitions, tensions and negative concept regarding their abilities. In the beginning stages of language learning, students must be given a chance to play with the language. As a result of ‘fun’ activites, they gain confidence in their abilities and enjoy talking to each other. Teachers should strive to make input comprehensible through the use of contextual visuals, for example, improves listening comprehension. Visuals serve as advance oraganizers, enhance students’ ability to formulate correct hypotheses and increase students’ interest. In the early stages of language learning, teachers should not ask atudents to produce language before they have absorbed enough language to make production possible. Teachers’ expectation, as expressed in the materials they choose for their students, should be consistent with the students’ capabilities at any particular point in the course. Language teachers should give their students practice sample that they can preview, view, review, and discuss. They should teach student to read/listen for ideas rather than language and to use context to make rational inferences. In other words, teacher should encourage student to guess. Students should have the opportunity to active relevant schema and make prediction. Teacher should seek continually to reduce the principal fears that student have not being able to understand every word and not being able to correctly answer in class. They should make clear to the students that these fears are based on false premises, that with practice these fears will dissipate.

Below we will present a brief and selective review of cross-linguistic research on language development in children, language symptoms in brain injured adults, and language processing in normal adults, in an order that reflects the impact that cross language variations have had on theoretical frameworks within each field. Cross-linguistic studies of monolinguals come in two varieties. One approach treats language as a between-subjects variable, applying the same experimental design in two or more languages to determine how theoretically relevant linguistic differences affect performance. Examples from child language include cross-linguistic comparisons of tense and aspect in narratives, the use of “path verbs” vs. “manner verbs” to describe an action-packed cartoon, the acquisition of spatial locatives (Bowerman & Choi 1994), and differential use to word order, semantics and grammatical morphology to assign agent-object relations in a “Who did the action. A second approach treats languages as experiments of nature, exploiting particular properties of a single target language to ask questions that could not be answered in (for example) English.

CROSS-LANGUAGE CONTRASTS AND THEIR RELEVANCE FOR PROCESSING

We assume that psycholinguistic universals do exist. Languages like English, Italian and Chinese draw on the same mental/neural machinery. They do not “live” in different parts of the brain, and children do not differ in the mechanisms required to learn each one. However, languages can differ (sometimes quite dramatically) in the way this mental/neural substrate is taxed or configured, making differential use of the same basic mechanisms for perceptual processing, encoding and retrieval, working memory, and planning. It is of course well known that languages can vary *qualitatively*, in the presence/absence of specific linguistic features (e.g. Chinese has lexical tone, Russian has nominal case markers, English has neither). In addition, languages can vary *quantitatively*, in the challenge posed by equivalent structures (lexical, phonological, grammatical) for learning and/or realtime use. For example, passives are rare in English, but extremely common in Sesotho, and relative clause constructions are more common in English than Italian. To the extent that frequency and recency facilitate structural access, these differences should result in earlier acquisition and/or a processing advantage.

As we shall see later, this seems to be the case for passives in Sesotho, and for relative clauses in Italian. Holding frequency constant, equivalent lexical, phonological and/or grammatical structures can also vary in their reliability (“cue validity”) and processibility (“cue cost”). These two constructs figure prominently in the Competition Model (Bates & MacWhinney 1989, MacWhinney 1987), a theoretical framework developed explicitly for cross-linguistic research on acquisition, processing and aphasia. Like other interactive-activation or constraint-based theories, the Competition Model assumes parallel processing, with detailed and bidirectional interactions among different information types. Within this framework, cue validity refers to the *information value* of a given phonological, lexical, morphological or syntactic form within a particular language, while cue cost refers to the *amount and type of processing* associated with the activation and deployment of that form (e.g. perceivability, salience, neighborhood density vs. structural uniqueness, demands on memory, demands on speech planning and articulation). These two principles co-determine the nature of linguistic representations in a particular language and the nature of the dynamic processes by which form and meaning are activated and mapped onto each other in real time.

Linguistic information is represented as a broadly distributed network of probabilistic connections among linguistic forms and the meanings they typically express, as in other connectionist theories of language. Linguistic rules are treated as form-meaning and form mappings that can vary in strength, in that the “same” rule may be stronger in one language than it is in another. Within a given language, structures that are high in cue validity should be the ones that normal adults attend to and rely upon most in real-time language processing, and they should also be acquired earlier by children and retained under stress by aphasic patients. However, effects of cue validity may be reduced or amplified by variations in cue cost, especially in young children and/or brain-injured patients whose processing costs are already very high. To illustrate contrasts in cue validity, consider some of the factors that influence sentence interpretation (especially agent-object relations, or “Whodid what to whom”) in English, Italian and Chinese. In English, subjects are obligatory in free-standing declarative sentences (including dummy subjects like “it” in “It is raining”), and word order is preserved with a rigidity that is

unusual among the world's languages. By contrast, Italian is a "pro-drop" language in which it is possible to omit the subject if it can be inferred from the context, or from markings on the verb (e.g. the best translation of "It is raining" in Italian, is "Piove," or "Rains"). Italian also permits extensive variation in word order for pragmatic purposes (e.g. it is possible to say "La lasagna (la) mangia Giovanni," or "The lasagna(it) eats Giovanni," with the normal reading in which people eat pasta, not the other way around). Because of these contrasts, word order (e.g. Noun-Verb-Noun) is a highly reliable cue to agent-object relations in English but a relatively poor cue in Italian. In direct contrast with the situation for word order, subject-verb agreement is a weak cue to agent-object relations in English, but a powerful cue in Italian. For example, English has only two contrasting inflected forms in the present indicative paradigm (singular: I EAT, YOU EAT, HE EATS; plural: WE EAT, YOU ALL EAT, THEY EAT), compared with six in Italian (singular: IO MANGIO, TU MANGI, LUI MANGIA; plural: NOI MANGIAMO, VOI MANGIATE, LORO MANGIANO). Looking at the full verb paradigm, Italian verbs can take up to 47 different forms, compared with only five in English (e.g. EAT, EATING, EATS, ATE, EATEN). Such extensive verb marking provides the listener with a rich source of information about "Who did what to whom" that is not available in English. In contrast with both English and Italian, Chinese has no inflectional paradigms at all (e.g. no plural inflections on nouns or tense inflections on verbs). It does have function words and particles to convey some of the functions carried out by inflections in other languages. However, these particles come in a single unalterable form, are optional in all but a handful of contexts, and most are homophones or near-homophones of the content words from which they were historically derived (e.g. past-tense particle "wan" also means "to finish").

Despite the absence of case or agreement markers to indicate agent-object relations, word order is flexible in Chinese, and both subject and object can be omitted. As a result, a sentence literally translated as "Chicken eat" could mean "The chicken is eating" or "Someone is eating the chicken." Because of all these factors, Chinese listeners have to make flexible and rapid use of many different sources of information in sentence processing, including aspects of prosody, semantics and pragmatics that are less important in English or Italian. These contrasts have clear implications for sentence-level processing (with effects that are discussed below), but they also interact with cross-linguistic differences in word structure to affect lexical access. This includes cross-language differences in lexical ambiguity, and differences in lexical structure that challenge the oft-cited distinction between words and rules (Pinker, 1999). With regard to lexical ambiguity, the rich inflectional morphology of Italian makes it relatively easy to distinguish between nouns, verbs and other grammatical classes. In contrast, the sparse grammatical morphology of English means that nouns, verbs and other word classes often sound alike, and must be disambiguated by context ('the comb' vs. 'to comb'), or by prosodic cues ('to record' vs. 'the record').

In Chinese, the absence of inflectional morphology means that the potential for lexical ambiguity is even greater than it is in English. Some of this ambiguity is reduced in Chinese by lexical tone in the auditory modality (Cutler & Chen 1997), and by the one-to-many mapping between syllables and the non-alphabetic characters that represent them in the written modality (Chen & Tzeng 1992, Chen & Zhou 1999). However, ambiguity is also affected by the rich sublexical

structure of Chinese, due to the dominance and productivity of compounding. More than 80% of Chinese words are compounds (65% disyllabic), and the syllables that comprise them occur in many other words. Hence most words are highly ambiguous on the first syllable, and many are not resolved until the end of the final syllable. A further complication lies in the fact that Chinese compounds and the morphemes inside them can belong to different form classes, including VN compounds that can either be nouns ('zipper'='lalian', literally 'pull-chain') or verbs ('to forge'='da-tie', literally 'strike-iron'). As a result, it is not always clear in Chinese whether we are dealing with a compound word (stored in the lexicon) or a novel noun or verb phrase (compiled on-line) (for a discussion, see Bates et al. 1991a, 1993 and Zhou et al. 1993). With regard to the distinction between words and rules, English morphology and orthography are both highly irregular, a fact that has shaped theories of processing in both domains. To deal with the regular-irregular contrast, "dual route" or "dual mechanism" theories propose that regular forms are handled by a rule-based system, including grammatical rules in morphology and phonological rules in reading (i.e. grapheme-phoneme correspondence rules—Coltheart et al. 1980).

In these theories, irregular or exception forms are handled by rote memory (lexical look-up in morphology; 'whole word' access in reading), or by a limited neural network that is capable of generating new forms by analogy (Pinker 1999). Evidence cited in favor of dual-route models includes differential patterns of acquisition in children, dissociations in brain-injured patients, and differential processing of regulars and irregulars in normal adults. An alternative account is provided by connectionist or interactive-activation theories, in which the same differential patterns for regulars and irregulars are explained by domain-general dimensions like frequency, similarity and set size. Evidence for this alternative view is provided by neural network models in which regular-irregular contrasts (including double dissociations) are simulated within a single architecture. The dual-mechanism debate takes a different form when we move outside the boundaries of English. For example, Italian orthography is extremely transparent (i.e. direct grapheme-phoneme correspondence), but its morphology involves many irregular inflections. This irregularity is often a matter of degree, with multiple subregularities and partially productive patterns that pose an interesting challenge for dual-mechanism theories. Applying the dual-mechanism view to Italian, some proponents of the modular view have proposed that the '-are' conjugation class in Italian is 'regular' (handled by the grammar), but the other two classes ('-ire', '-ere') are irregular. However, this also means that the lexicon contains many highly productive conjugation patterns, an intellectual move that blurs the word-rule dichotomy. Such 'in-between' cases would be easier to handle if regularity were the product of continuous dimensions like frequency and similarity, as proposed by some connectionist accounts.

Chinese poses an even greater challenge to dual mechanism theories, because the regular-irregular distinction simply does not apply (at least in its original form) to reading in a language without an alphabet, or to grammar in a language with no inflectional paradigms. However, there may be analogues to regularity within the lexicon itself, ranging from 'regular' compound patterns (many members, low in frequency and similarity) to irregular or idiosyncratic compound patterns (few members, high in frequency and similarity). To the extent that this kind of regular-irregular distinction can be demonstrated within the lexicon itself, we have to question the English-based assumption that regulars are handled by rules (grammatical and/or

phonological) while irregulars are handled in the lexicon. We are not suggesting that some languages are inherently harder to learn, process or retain under brain damage than others. All languages must have achieved a roughly comparable degree of “learnability” and “processibility” across the course of history, or they would not still be around. However, overall processibility is the product of cost-benefit trade-offs, a constraint satisfaction problem that must be solved across multiple dimensions of the language system. As a result, we may obtain powerful differences between languages in the relative difficulty of specific linguistic structures, with differential effects on performance by children, aphasic patients and healthy normal adults. I will also contend that this kind of cross-language variation in structural difficulty reflects universal facts about perception, learning and processing that are not specific to language at all.

CONCLUSION

The dominance of English in 20th-century psycholinguistics was a historical accident, more socio-political than scientific. However, it has had particularly unfortunate consequences for those fields that try to study the universal psychological and neural underpinnings of language. Psycholinguistics has finally broken away from the hegemony of English, and the field is better for it. There is, however, an immense amount of work that needs to be done, to verify whether English-based findings can be generalized, and to explore the opportunities afforded by the dramatic structural contrasts that characterize human language.

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