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THE TRANSFER-APPROPRIATE-PROCESSING APPROACH AND THE TRILINGUAL'S ORGANISATION OF THE LEXICON

1. INTRODUCTION

A critical question with reference to the theoretical basis of multilingualism is whether the trilingual speaker's total lexicon represents different sets of lexica depending on the similarity of the languages involved. The languages given have different similarities or distances from each other, and thus interconnections have different strengths when they are derived from phonological, morphological and syntactical features of the given languages. In addition, the issue of semantic or conceptual interconnections between languages has to be considered and associated with the question of semantic similarity. The aim of this research is to clarify the issue of conceptual interconnections between second and third language.

2. BILINGUAL AND TRILINGUAL LANGUAGE PROCESSING

Both Paradis and Goldblum (1989) and Perecman (1989) see language processing as taking place on different levels: a prelinguistic conceptual level which reflects properties of the human mind and is common to both of the bilingual's languages because it is independent of language, and then the functionally different semantic - conceptual - lexical level. Perecman (1989) outlines a neurolinguistic model for language processing in bilinguals and then accounts for language variation. The model assumes a hierarchy of processing, at the top of which there is the conceptual level with shared processing of language independent information. Below that there are various linguistic strata — the lexical-semantic, the syntactic, the phonological and the phonetic articulatory levels. Perecman assumes that for monolinguals where the conceptual systems feeds into only one linguistic system, the processing routines from the conceptual down to the phonological forms have become automatized. For the bilingual and the trilingual speaker less routine can be expected: The conceptual level feeds into more than one linguistic system, and the distinction between levels of representation will be more marked (see also Dijkstra, and Franceschini et al., this volume). Perecman stipulates that multiple languages are unified in a single system at the prelinguistic conceptual level, that they are strongly linked at the lexical-

semantic level, and that the links get progressively weaker as processing moves from the lexical-semantic to the articulatory-phonetic level. This may explain the observation frequently made that interference is more likely to occur at the conceptual-lexical level than at levels further down where the links between systems are weaker. The larger the number of linguistic systems at work the more interactions between the various levels of the system are to be expected. Hence, trilingual language processing is more complex than just the doubling of the interactions of a bilingual system. In a trilingual system one or two language systems may be dominant, thus offering the unique opportunity to observe two dominant and one weak system.

The transfer-appropriate-processing approach states that people are generally faster or more efficient in performing a task on a stimulus when there has been previous experience in performing the same task on the same stimulus. The approach applies specifically to memory processes. The degree of overlap between processes engaged during a first study exposure and those engaged during a second test exposure (Bransford, 1979). More recently, the framework has been extended to implicit memory phenomena (Blaxton, 1989; Graf & Ryan, 1990; Roediger & Blaxton, 1987; Roediger, Weldon & Challis, 1989; Srinivas, 1996).

Dissociations between explicit and implicit memory tests are now documented in memory research. Explicit memory tasks are those in which instructions are given to subjects to retrieve the items from the study episode. Standard examples of some explicit tasks are free recall, cued recall and recognition. In implicit memory tasks, subjects are simply asked to complete the tasks with the first solution that comes to mind, to identify speeded presentations of stimuli, or to respond as quickly as possible. For example, in an implicit memory task such as word fragment completion, subjects complete fragments of studied and non-studied items with the first solution that comes to mind. Explicit tasks such as free recall and recognition greatly benefit from conceptual elaboration of material compared to encoding that focuses on perceptual features. In contrast, in implicit tasks such as speeded word identification, word stem completion, and word fragment completion, this conceptual advantage is not obtained; priming on these implicit tests is usually equally facilitated following conceptual or perceptual encoding of the target word (Roediger et al., 1992). Roediger postulated that explicit memory tasks are conceptually driven whereas most implicit memory tasks depend on perceptual processes. Implicit memory tasks such as word fragment completion appear to be relatively insensitive to semantic elaboration at encoding (Srinivas & Roediger, 1990). But Weldon and Roediger (1987) and Challis and Brodbeck (1992) show that word fragment completion is also subject to manipulations concerning the activation of concepts. In tasks like the word fragment completion task in absence of a biasing context, dominant alternatives of possible meanings are activated. In the case of trilingual persons the search strategies for fragment completion include the priority of finding words in the dominant language(s). Furthermore, Basden's et al. (1994) experiments yielded also support for a revised transfer-appropriate-processing framework involving three processes: conceptual processing, lexical access and perceptual overlap.

A study reported by Schönplflug (2000) dealt with the same problem employing the word fragment completion test method to explore the processes used for completing words in a trilingual context. The relationship between the first and the second and the first and the third and the second and the third language are seen as the results of developmental processes. According to Dufour and Kroll (1995) bilingual language competence is a development in the direction of an independent conceptual system for the two languages. Novices in a second language process semantic information through the semantic-conceptual store of their first language.

A recent study by Hamilton and Rajaram (2001) tested the concreteness effect on implicit and explicit memory tests. The rationale of introducing this variable is that concreteness effects indicate that conceptual processes are involved in word fragment completion.

On the other hand, concrete and abstract words have a different number of translation equivalents (Schönplflug, 2000). Concrete words tend to have one translation equivalent whereas abstract ones tend to have more than one. This is the case when translating German words into English and English words into German. Word completions may also be influenced by the number of translation equivalents as Schönplflug's study shows. The study finds differential uniqueness points (number of letters given when correct target word was found) for concrete and abstract words, words with either one or more than one translation equivalent, and long and short words in the subjects second and third language, German and English, respectively. Generally, concrete words have a later uniqueness point than abstract words, words with more than one translation have a later uniqueness point, and words from the third language, English, have a relatively later uniqueness point than words from the second language, German. The subject took more letters to correctly complete word fragments of short words as compared to long words.

3. THE PRESENT STUDY

This study aims at exploring the effects of second and third language active and passive competence on word fragment completions of words of either language. It may be hypothesized that

H1: A trilingual speaker's active and passive competence in their second and third language have an effect on word fragment completions: The more competent the speakers are in their second and third language, the later their uniqueness points in word fragment completions in the respective language. The argument is based on decision theory: The more alternatives there are in the decision-making process the longer takes the process of finding the right alternative.

H2: Trilingual speakers with greater competence in the second than the third language will reveal in their second language more conceptually driven word fragment completions than in their third language. Conceptually driven processing is indicated by effects of concreteness and number of translation equivalents on word fragment completions. The weaker the speaker's