Dissertation Summaries

Kalliopi Katsika. Sentence processing strategies in children and adults: PP Attachment in corpora and psycholinguistic experiments. Aristotle University of Thessaloniki, 2009. [kkatsika@enl.auth.gr]

Keywords
child language, corpus linguistics, experimental linguistics, PP-attachment, sentence processing

1 Introduction

A very important goal of psycholinguistic research is to unravel the architecture and mechanisms of language comprehension. Sentence comprehension is a very rapid process which involves the immediate construction of incoming constituents into larger syntactic and semantic units. It is generally believed that sentence processing occurs incrementally, in a word-by-word fashion, and that the human sentence processor (parser) starts building constituent structures and interpretations the moment each word is heard or read (e.g. Marslen-Wilson 1973, 1975). The incremental nature of sentence comprehension may create brief ambiguity even to strings of spoken or written language that are unambiguous upon the completion of a sentence. Structural ambiguity thus provides a way to investigate the mechanisms that underlie the operation of the parser (Frazier 1979).

This thesis examines a specific type of structural ambiguity, namely the Prepositional Phrase (PP) attachment ambiguity. Even though a considerable amount of research has been conducted on PP attachment ambiguities in English (Altmann & Steedman 1988, Britt 1994, Clifton, Speer, & Abney 1991, Rayner, Carlson, & Frazier 1983, Schütze & Gibson 1999, Taraban & McClelland 1988, to name a few), little research can be found in languages other than English (Frenck-Mestre & Pynte 1997, Konieczny, Hemforth, Scheepers, & Strube 1997, for French and German respectively) and no research on attachment preferences in V-NP-PP structures has been previously conducted in Greek.

The main aim of this thesis is to investigate the extent to which native Greek speakers’ parsing decisions for temporary ambiguous prepositional phrase
structures are influenced by lexical, language-specific grammatical and frequency factors.

2 PP attachment ambiguity

The PP attachment ambiguity involves the possible attachment of a PP either to the preceding VP or to the preceding NP, and can be illustrated in sentences such as:

(1) The girl hit the boy with the apple.

In verb-noun phrase-prepositional phrase (V-NP-PP) sequences such as (1), the ambiguity lies in the possibility of attaching the PP with the apple either to the preceding verb hit denoting the instrument of the action described by the verb, or to the preceding NP boy, as a modifier of the NP.

In order to explore the frequency of PP attachment in naturally produced sentences of written and spoken register and to be able to make valid claims about the role that prior exposure to comparable structures in Greek may have on parsing decisions, a corpus study was conducted. Sample sentences were extracted from two types of corpora: (i) a very large corpus which includes written texts in Modern Greek (Institute for Language and Speech Processing corpus), and (ii) a manually compiled corpus of spoken Greek. The corpus data were analysed on two levels (coarse-grained vs. fine-grained analysis). The coarse-grained analysis allowed testing the predictions of the Tuning Hypothesis (Mitchell, Cuetos, Corley & Brysbaert 1995), which posits that the parser is expected to be “tuned” only to syntactic category (coarse-grained) information during on-line sentence comprehension. Alternatively, constraint-based accounts of sentence comprehension assume that parsing preferences are reflected on corpus frequencies at more fine-grained levels of analysis (e.g. Spivey-Knowlton & Sedivy 1995), at which information such as the lexical choice of preposition and definiteness are taken into account. The results of the written and spoken corpus data analysis indicated that VP attachment is the most frequent type of attachment in Greek V-NP-PP structures and that attachment frequencies vary depending on the preposition that heads the PPs: VP attachment was more frequent than NP attachment for me, se and apo-PPs whereas the opposite pattern was found for ja-PPs.

In addition, the thesis explores native Greek speakers’ parsing preferences for temporary ambiguous PP structures by means of three psycholinguistic experiments (one off-line acceptability judgement and two on-line self-paced reading tasks). Two groups of adults and one group of 11- to 12-year old children participated in the study. All participants were native speakers of Greek