SYNTACTICALLY BASED PARSING STRATEGIES: EVIDENCE FROM TYPOLOGICALLY DIFFERENT LANGUAGES

MARICA DE VINCENZI

Institute of Psychology
of the National Research Council
Rome, Italy

1. INTRODUCTION

Crosslinguistic investigation is a very popular topic in sentence processing (see the volumes of Slobin, 1985, and MacWhinney and Bates, 1989). This is certainly a welcome feature in the parsing studies, at least if the goal of the theories is to have a theory of human sentence processing and not merely the description of processing a single language.

In this chapter I would like to illustrate how crosslinguistic studies can motivate the formulation of a parsing strategy, and second, how methodological considerations can affect the comparisons among languages.

The parsing strategies I consider are syntactically based strategies: with this term I mean strategies that are defined over the geometry of the phrase marker of a sentence, regardless of what particular phrase types and languages are involved. Examples of such strategies are the Right Association (Kimball, 1973), Minimal Attachment and the Late Closure strategy (Frazier and Fodor, 1978), the Superstrategy (Fodor, 1979), the Recent Filler Strategy (Frazier, Clifton, and Randall, 1983), the Active Filler Strategy (Frazier, 1987). The basic idea in all these strategies is that they are directly derived from a simple principle: Choose to do whatever costs the least effort in terms of computation. This choice is derived by a
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basic cognitive reason, namely, the restrictions on short-term memory (STM) in
terms of memory and computational space and the fact that the more structured
the material to be stored, the smaller the demand it makes on the STM space
(Miller, 1956). Given that these principles are based on cognitive needs and that
they are not tied to any language-specific aspect, we expect them to be universal.
For these kinds of strategies, therefore, a crosslinguistic test is crucial to assess
their validity, even though they have been initially formulated and tested in En-
glish. In the following I would like to present a syntactically based strategy, the
Minimal Chain Principal (MCP), which has been developed to account also for
the processing of the so-called null-subject languages, like Italian, and I will show
how it accounts for parsing in different languages.

2. THE MINIMAL CHAIN PRINCIPLE

When we extend the application of a processing strategy to a new language,
there can be the need to further specify the strategy to include the parsing of
structures that are not present in the previously studied languages (cf. De Vinc-
cenzi, in press, for a discussion). For example, a processing strategy could be
reconducted to a more abstract level of generalization, so that the principle applies
to different structures, regardless of the form of the superficial string but accord-
ing, say, to the underlying level of syntactic representation. Italian, and some other
natural languages, allow phonetically null subjects in tensed clauses, as shown in (1). Another property systematically correlates with the null-subject property
(Perlmutter, 1978; Rizzi, 1982): a free process of subject inversion, that is, the
subject can appear after the verb (2). In the following examples, “pro” indicates
the lexically null pronominal subjects. English glosses are given below the Italian
examples; the English translation is in quotes.

(1)  pro  telefonera'
    pro will telephone
    ‘he/she will telephone’

(2)  proi  telefonera'  Gianni,
    proi will telephone  Gianni,
    ‘Gianni will telephone’

This means that in Italian (and in the other languages that adopt this linguistic
parameter) there are linguistic dependencies not present in English. Therefore, the
parsing principles referring to movement dependencies and empty elements origi-
nally formulated on the basis of English had to be revised to include the types of