decisions can be only which trees to select; it cannot get access to smaller units of linguistic structure, and larger ones can only be formed by the combination of entire trees.

This primary fact can be leveraged for corollaries applying to incremental generation, to criteria by which trees are grouped into families, and to the relationship between the content of individual trees and the speaker's conceptual representation. One can also couple the properties of TAG with a particular approach to generation, for example message-directed processing. We can then project back from this to draw conclusions about how information may be structured in the mind, and then again forward to suggest how trees are composed through adjunction and substitution.

## Features in a Lexicalized TAG for English Sharon Cote Department of Linguistics University of Pennsylvania 618 Williams HALL Philadelphia, PA 19104, USA cote@linc.cis.upenn.edu

This talk is an overview of the current state of the English LTAG and a discussion of some issues that have arisen in designing features for this grammar.

I explore the possibility that the only types of features required in a LTAG are those that specify the properties of lexical items (Lexical feature Principal). These features are characterized as either Anchor Features, which are bottom features, or "Argument" Features which are top features. Structural Features would be used only to carry information that is relevant above the level of sentence grammar.

I also consider the special nature of the category feature and suggest that auxiliary trees do not necessarily have to be defined as trees with a root and foot node of the same, fully pre-specified category.

> A TAG analysis of the Third construction in German Anthony Kroch, Beatrice Santorini, Aravind Joshi Department of Computer and Information Science R-555 Moore School University of Philadelphia 220 South Street 33rd Street Philadelphia, PA 19104-6389, USA kroch or beatrice or joshi@linc.cis.upenn.edu

In this paper, we consider the so-called third construction in German, illustrated in (1):

(1) Der Lehrer hat das Theorem versucht zu beweisen. the teacher has the theorem attempted to prove 'the teacher attempted to prove the theorem'

While syntactically distinct from the well-known West Germanic verb raising construction, the third construction is similar to it in that it exhibits cross-serial dependencies and is hence not context-free. Recently, Joshi 1990 has proposed an analysis of the parsing of verb sequences using extended push down automata (EPDA) which presents a formal model of the differential psycholinguistic processing complexity of cross-serial vs. nested dependencies, as reported by Bach, Brown and Marslen-Wilson 1989. Interestingly, den Besten and Rutten 1989 have proposed an analysis of the third construction (in Dutch) according to which it reflects two independently motivated syntactic processes: long distance scrambling (leftward movement) and extraposition. Joshi's EPDA for cross-serial dependencies corresponds directly to den Besten and Rutten's grammer of the third construction - a result that is striking since the motivation for Joshi's EPDA lies in the explanation of processing complexity, while the motivation for den Besten and Rutten's analysis lies in distributional generalizations of the conventional linguistic type. We presented two TAG analysis of the third construction. The first analysis requires only one-part trees; however, it has certain linguistic drawbacks - in particular, it requires relaxing the important constraint that traces be c-commanded by their antecedents, and it is unable to derive instances of pure long-distance scrambling, which German (like many verb-final languages) allows. As a result, we present an analysis of the third construction using multicomponent adjunction which does not have the above-mentioned drawbacks. Even this analysis, however, is unable to derive certain instances of long-distance scrambling (in particular, one in which a long-distance scrambled constituent interrupts two matrix arguments). We propose a multicomponent adjunction analysis which relies crucially on introducing arguments of the verb on a par with adjuncts. We conclude by presenting linguistic evidence based on facts concerning weak crossover and parasitic gaps, which support the last multicomponent adjunction analysis presented.

> French and english determiners: Interaction of morphology, syntax and semantics in Lexicalized Tree Adjoining Grammars Anne Abeillé LADL & UFRL University of Paris 7 - Jussieu F-75005 Paris, France abeille@franz.ibp.fr

Tree adjoining grammars have proved quite relevant for handling numerous linguistic phenomena, for example unbounded dependencies (A. Kroch and A. Joshi 1985, A. Kroch 1987), light-verb constructions (A. Abeillé 1988) and idioms (A. Abeillé and Y. Schabes 1989, 1990). Two sizable grammars have been written for French and English (A. Abeillé 1988, A. Abeillé, K. Bishop, S. Cote, Y. Schabes