

Chapter 5

Conclusions

In this study, we have proposed and defended a syntactic theory of scope assignment which, besides assuming the operation of a rule of Quantifier Raising, makes use of a diacritic scope marking mechanism. We have assumed that the diacritic scope markings that appear in LF representations unambiguously encode the scopal relations obtaining between the interpretive counterparts of various syntactic constituents.

We can think of the scope marking apparatus as part of a syntactic Theory of Scope. This theory defines the properties of scopal indices, and the conditions under which they may be assigned. In the version of Scope Theory proposed here, scope marking may freely apply under c-command at any level of representation; scope marking is obligatory at LF for constituents moved to an adjoined position by QR, and free otherwise. A further condition states that pronouns may only be scope marked from A-positions.

For the Theory of Scope to be well-defined as a module of grammar, a range of further theoretical issues remains to be resolved. Firstly, we should expect there to be some syntactic definition of the class of constituents that may assign and receive scopal indices. We have proceeded here on the convenient assumption that only those constituents whose semantic interpretations play a role in scopal relations engage in scope assignment. For other types of constituents, empirical evidence of their behavior with respect to the theory of scope will obviously be hard to obtain. Nevertheless, it may be feasible to adduce evidence for some syntactically interesting bifurcation.

Secondly, we have rather carelessly allowed our scope marking mechanism to use the 'referential' indices already assumed in the GB-framework. The reader may have noted that at the same time, we have rather carefully avoided making essential use of any specific binding theoretic properties of these indices. For example, we have presented no evidence that it should be possible for an operator A to be interpreted in the scope of an operator B, not through being c-commanded by it, but through being scope-marked by yet a third operator C that happens to be coindexed with B, either as a result of free or accidental coindexing, or due to some grammatical coindexing mechanism. In fact, we have concluded from our discussion of Haïk's scope indexing theory that a unification of Binding Theory and Scope Theory probably is not desirable. Although we have no evidence at this point that any unwanted consequences follow from our borrowed use of referential indices, it may turn out that Scope Theory requires some alternative diacritic marking, by which nodes in a tree structure may be uniquely identified.

Thirdly, we have paid scant attention to avoiding semantically illicit scope marking configurations. For example, nothing so far prevents two operators from

being marked in each other's scope; also, configurations may perhaps arise in which an operator does not take scope over a constituent that partly contains the chain the operator belongs to. Obviously, we might add conditions on well-formedness to the theory of scope to preclude these options, or even devise some elegant way of avoiding them. We have no evidence, however, that this is required. Either such configurations will be ruled out as semantically uninterpretable, or further research on the interpretation of LF will reveal that definite interpretations may be associated with them: only then will we be able to establish empirically whether the syntactic theory of scope correctly predicts the conditions under which they may occur. At this point, we have no insights to offer on the subject.

A theory of scope that makes use of diacritics differs empirically in at least two respects from a theory that defines scope purely in terms of c-command domains. Firstly, a scope marking theory offers the possibility of leaving selected constituents within the c-command domain of an operator unmarked, thereby causing them to be interpreted as scopally independent objects, or generating 'branching' structures of a sort that cannot be encoded in tree structures. Secondly, such a theory concedes the possibility of scope relations being established at various levels of representation and thereby displaying reconstruction (connectivity) effects, which moreover may not be reducible to scope relations defined over trace positions. In the foregoing chapters, we have presented evidence of both types of effects.

As to the first type of effect, we have examined two phenomena which may be attributed to the selective omission of scope marking: the scopal properties of weak NPs, and the licensing conditions on bound variable pronouns.

We have assumed that weak NPs are not obligatorily scope marked by c-commanding operators. This assumption allows us to explain the specificity phenomenon as an unexceptional consequence of the syntactic theory of scope, rather than as a (lexically determined) irregularity. Also, it correctly predicts that the phenomenon is more general than it is usually assumed to be, giving rise to the notion of Relativized Specificity. Furthermore, the syntactic conditions governing Unselective Binding, which we assume obtains in contexts of Donkey Anaphora, can be correctly described in this manner: a donkey antecedent is interpreted specifically with respect to any operators intervening between it and the unselective binder. Donkey Anaphora of the VP-conjunction variety, which requires an approach without unselective binding, also falls out as a Relativized Specificity effect.

We have assumed further, that pronouns may be scope-marked only from A-positions, which allows us to describe the cross-over restriction on bound variable pronouns as a Scope Theory phenomenon. There are two advantages to treating bound variable licensing in this way, rather than by referring to Binding Theoretic notions. Firstly, the Transitivity Effect found with bound variable licensing follows naturally from the transitivity of scope, generally. Secondly, the fact that a donkey anaphor must be licensed, not by its antecedent, but by its antecedent's containing constituent, is entirely to be expected in a Scope Theory approach. This is not so in a Binding

Theory approach, since there exists no relation of syntactic binding between the anaphor and the antecedent's container.

As to the reconstruction effects predicted by a scope marking theory, we have examined a range of examples that can fruitfully be analyzed as involving scopal reconstruction. The licensing of bound variable pronouns displays the normal reconstruction effects associated with material pied-piped by *wh*-movement. More interestingly, *wh*-operators that have undergone A-bar movement and quantified expressions that have undergone A-movement, may be interpreted in the scope of operators that c-command them only at some level of representation prior to the application of move α . We have argued that neither by allowing trace positions to play a role in the determination of relative scope nor by applying a reconstruction or lowering movement operation, can we reduce these reconstruction cases to c-command relations at LF in any straightforward way¹. If our analysis of these examples is correct, it may be taken to support both a diacritic scope marking mechanism and the existence of a grammatical level of Deep Structure.

Our empirical research has thus touched on two distinctive properties of a diacritic marking approach to scope assignment, and found them to be well-supported. Obviously, we have left a rather large number of interesting and relevant empirical questions unaddressed. For example, it is not clear how the properties of *Wh*-operators, as they interact with other scopal operators in a structure, may be brought in accordance with the semantics of questions. Also, as another example, the scopal properties of weak NPs in *there*-insertion contexts may prove to be especially relevant to our concerns. Other relevant issues include the scope of negation and of adverbs of quantification, the interpretation of reciprocals, the licensing of factivity, polarity, etc. Questions of a rather different nature arise as to the interpretation of LFs with branching quantifier structures. Whereas a Scope Condition that defines scope in terms of c-command domains appears to allow for the semantics to apply compositionally in a more or less straightforward manner, the derivation of semantic representations from scope-marked LFs may require more complex mapping rules. While we have attempted to give some indication of how the semantics for e.g. Relativized Specificity might be derived, we have essentially deferred these questions to further research.

We started this study with the assumption that the T-model of grammar is essentially correct, in that it contains a phrase-structural level of Logical Form, at which scope relations are unambiguously encoded. The additional hypotheses summarized above were motivated by our analysis of some empirical questions on the basis of this assumption. In so far as these hypotheses prove to be successful in explaining the data discussed here and in bringing to light new generalizations, this

¹ It may be possible to describe the reconstruction effects observed here in terms of trace positions at LF, that is if a sufficiently complex statement of the Scope Principle is given. The following is empirically almost equivalent to our proposal: a node A heading a chain α may take scope over a node B heading a chain β only if at LF either A c-commands B, or some A-position in α c-commands some A-position in β .

reflects favorably not only on the specific assumptions made here, but also on the general framework that made them necessary and possible. Whether this is indeed the case depends largely on the interest of the questions raised, and on the course of future research. If it should turn out successful, we may conclude that we have managed to replace some vaguely interesting and ill-defined initial questions with somewhat less vague, and possibly interesting new questions.