May (1977, 1985)

Pairs of subject and object QPs are typically ambiguous. All QPs move from their Case position to distinct scope positions.

(1) Some man loves every woman.

 $\exists > \forall \rightarrow$ surface reading

 $\forall > \exists \rightarrow$ inverse reading

Problematic cases:

(2) Somebody loves no woman. $\exists > \neg \exists \rightarrow \text{surface reading}$ $* \neg \exists > \exists$

(3) Two students met 3 girls.
2>3 → surface reading
*3>2

Checking Theory of Scope (Beghelli & Stowell 1994)

Central assumptions:

- Quantifier scope is determined by c-command relations
- Quantifier Phrases (QP) move to their scope positions in the derivation of LF

Central innovative aspect:

- Distinctions among various QP-types
- Certain QP-types may take scope in their Case positions
- Other QP-types must move to distinct LF scope positions reserved for them

QP types and their scope positions

- **WhQPs**: Interrogative QPs bear the [+Wh] feature and take scope in the SpecCP These are QPs like *what, which man, etc.*
- NQPs: Negative QPs bear a feature [+Neg] and take scope in the Spec of NegP These are QPs as nobody, no man, etc.
- **DQPs**: Distributive-Universal QPs (headed by *every* and *each*) bear a distributive feature [+Dist] and a feature of universality [+Univ]. Normally they move to Spec-DistP.

- **CQPs**: Counting QPs, count individuals with a given property and have a very local scope. They are interpreted in their Case positions. These are decreasing QPs as *few, fewer than five, at most six* and expressions built by modified numerals like *more than five, between four and six, more ... than...*
- **GQPs**: Group-Denotating QPs denote groups, including plural individuals. There are indefinite QPs headed by a, *some, several*, bare-numeral QPs *three students* and definite QPs like *the*.

They need to check group reference [+ group ref] with an existential operator-head (\exists). This is located in both Share⁰ and Ref⁰.

- \circ definite GQPs \rightarrow Spec RefP
- \circ indefinite or bare numerals \rightarrow Spec ShareP or Spec RefP
- when a GQP has a feature that marks the subject of predication \rightarrow Spec RefP, otherwise \rightarrow Spec ShareP
- indefinite GQPs with absence of [+ group ref] feature, behave like CQPs (take scope in Case position) and are interpreted non-specifically.

Corresponding hierarchy of operators in the clause:



- \rightarrow Scope is a byproduct of agreement processes.
- \rightarrow Scope positions can be reached through movement, or by reconstruction to a lower link in the QP chain.
- \rightarrow Each QP- chain is implicated with one scope position, which reflects the featural specification of the QP

Some examples:

(4) Two students read every book.



The indefinite GQP headed by *two* could be constructed inside or outside the scope of the DQP headed by *every*.

The DQP will always end up in Spec DistP (1). The ambiguity occurs because the indefinite GQP has an ambiguous quantifier type and so two possible land sites, Spec ShareP and Spec RefP. The narrow scope construal involves a reconstruction on a lower scope position in Spec ShareP (2). In the case of wide scope the GQP moves to the Spec RefP (3).

- → If a sentence contains two DQPs "Every boy read every book." the Spec position could be multiply filled.
- (5) Two/ some students read no books.

The NQP is located at the NegP level. The indefinite GQP has two possible landing sites (Spec ShareP and Spec RefP) above NegP.

The GQP subject must take wide scope relative to negation, because there is no position below where the GQP could be reconstruct to.



(6) Some students visited more than two girls.



CQPs in object position are not able to take inverse scope over the subject. The reading 'For more than two girls it is the case that some student visited her.' is not possible. That is because the object CQP is not able to scope higher than Spec of Agro-P and the subject GQP cannot reconstruct lower than Spec ShareP.

The distributive nature of every and each compared to all

(6) a. The Pope looked at all the members of his flock.b. The Pope looked at every member of his flock.c. The Pope looked at every member of his flock.

Only (6a) allows a collective reading with a single looking-event.

- (7) a. All the boys surrounded the fort.
 - b. ? Every boy surrounded the fort.
 - c. ? Each boy surrounded the fort.

The predicated surround demands a semantically plural agent for a collective (nondistributive) reading. The reading in (7b) and (7c) are incompatible with the semantics of the predicate.

- (8) a. A (different) boy read every book.
 - b. A (different) boy read each book.
 - c. *A (different) boy read all the books.

DQP objects headed by every/ each can assume the distributor function, GQPs headed by *all* cannot.

In (8a, b) *different* differentiates among the referents of a distributed share. *Different* in (8c) means some other boy mentioned previously in the discourse.

 \rightarrow each and every are STRONG DISTRIBUTIVE quantifiers; inverse scope construals \rightarrow all is a WEAK DISTRIBUTIVE quantifier; no inverse scope construals

(9) Some man loves every woman.vs.Some man loves all women. $\rightarrow 2$ readings (distributive/ collective) $\rightarrow 1$ reading (collective)

Chain of syntactic dependencies for strong distributive DQPs

 \rightarrow Integration of the strong distributivity in the hierarchy (shown above) DQPs bear [+Dist] feature, which has to be checked. These DQPs appear in Spec DistP. The Dist⁰-head has as complement a functional category, which contains the QP of distributed share.

When a DQP takes distributive scope over an indefinite GQP, this indefinite has to move to Spec ShareP. If there is no overt indefinite a covert quantifier over events has to move to Spec ShareP.



Strong distributivity and negation

(10) a. ?? Every boy didn't leave.b. ?? John didn't read each book.

DQP scopes over negation (with neutral, non-focussed intonation) \rightarrow ungrammatical/ awkward in most cases

DQP moves to Spec DistP, activates $Dist^0$ and its complement ShareP. But there is no existential QP to fill the Spec ShareP and satisfy the checking requirements. In both examples there is neither an indefinite GQP nor an accessible event variable. The event variable is bound by the event-NQP n't.

The result are grammatical, if the DQP is exchange by a universally GQP headed by *all*. (11) All the boys didn't leave.