The Epistemic Containment Principle (ECP)

von Fintel & Iatridou (F&I) 2003 argue that QPs and EMs do not scopally interact.

(3) Every student in this room might be the smartest student.

Every := might : sensible, but not available(?) reading:
for each student in this room, it is possible that this student is the smartest student.

might := every : not sensible, but available, reading:
for each student in this room, it is possible that each student is the smartest student.

(4) Fill’s Epistemic Containment Principle (ECP): A QP cannot bind its trace across an epistemic modal condition on QR.

Assuming a free QR, and if the only available reading in clauses with every and might is inverse scope, then what would force reconstruction? Thus, we ask: does such a condition on QR exist?

Can we account for the data in another way?

Every vs. each

Every is licensed by one source QP, that is, all QPs that can be assigned scope by every alone, and does not interact with the epistemic modals any more.

Each is licensed by two sources: (1) every QP which can be assigned scope by every alone, and (2) the epistemic modals.

The Epistemic Containment Principle (ECP)

We propose that the set variable introduced by every QPs is bound by the EM, blocking movement to [Spec, DistP], parallel to cases in Fill’s. Independent evidence for the binding of every QPs is that, unlike each- QPs, they can be interpreted generically (Bi/S), and modals can unselectively bind (Heim 1982; Kratzer 1987). Therefore, we attribute the behavior of these quantifiers w.r.t EMs as a result of their particular syntactic/semantics. We identify a projection site for EMs below DistP and ShareP in Bi/S articulated clausal topology:

(5) Licensing of every N

a. every-QPs are specified [+singular agr.], and underspecified for [distribution]. They can, but need not, move to [Spec, DistP].

b. every-QPs move to [Spec, DistP] only when the set variable introduced by them is bound by an existential operator in [Spec, RefP]. When there, every-QPs support Strong Distributivity.

c. Semantically, the set variable introduced by every-QPs must be bound by an existential or question operator.

d. Every-QPs do not move to [Spec, DistP];

(6) Licensing of each N

a. each-QPs are specified [+singular agr.], +distribution) and must move to [Spec, DistP] at LF.

b. each-QPs always support Strong Distributivity.

c. When the closer binder is a negative or question operator, every-QPs do not move to [Spec, DistP];

We develop a topological approach which captures the differential behavior of each/every with EMs. Unlike every-QPs, each-QPs do not respect Fill’s representational constraint.

(7) each but not every scopes over might

a. #Every boy might love Mary, but some of them don’t

b. Each boy might love Mary, but some of them don’t.

Neither are they homogenously relative to other operators (e.g. negation, subjunctive-operators):

(8) each/every interact differently with negation and subjunctive-operators

a. John didn’t read every book

b. ??John didn’t read each book

We attribute the behavior of these quantifiers w.r.t EMs as a result of their particular syntactic/semantics. We identify a projection site for EMs below DistP and ShareP in Bi/S articulated clausal topology:

Derivational vs. Representational Constraints

The approach we offer differs from Fill’s: it involves derivational rather than representational constraints. The facts that the ECP purports to track is derived by the syntactic and semantic behavior of particular QPs.

The numerous arguments collected in Szabolcsi (1997) for treating QPs in a non-uniform manner are rather convincing, and this non-uniformity allows for an account of the ECP facts without additional stipulations.

If QPs are non-uniform, and if the topological approach of B&S is on the right track, then representational constraints which apply (arbitrarily) to a subset of QPs is extraneous.

Further, we add to B&S’ discussion of the differential properties of each and every-QPs w.r.t. the latter’s occasional loss of ability to strongly distribute: EMs, like negation and subjunctive-operators, bind the set variable introduced by every-QPs.

Excursus: Objective obviation?

Tancredi (2007), also Huittink (2009) argues that Fill’s ECP applies only to subjective epistemics, and may be obviated in objective contexts. Anand & Hacquard (2007) divided attitude verbs into subjective/objective categories.

A woman tells a story and a man makes a comment about it, participants judge whether he is ‘correct’ or ‘incorrect’ (press F or J, Expt.1), or whether his comment is appropriate (1- ‘appropriate’, 3- ‘not sure’, 5- ‘inappropriate’). Pictures as visual aids (Exp.1).

Expt. 1. embedding x evidence (subjective, objective) x quantifier (every, control: any/not)

Expt. 2. evidence x quantifier

Expt. 3. evidence x quantifier

Prediscepts requiring unique satisiers (e.g. be the winner).

matrix - subjective - every

Every student might have left

matrix - objective - every

Objectively speaking, every student might have left

embedded - subjective - every

Martin believes that every student might have left

embedded - subjective - every

Martin claimed that every student might have left

Results:

Expt. 1 - no difference between every in subjective / objective or matrix / embedded contexts (avg ‘true’ 24.8%)

Expt. 2 - no difference with every across conditions (average rating of ‘appropriateness’, 1.67 subjective, 1.67 objective)

Expt. 3 - no difference in proportion of ‘true’ responses with every (avg ‘true’ 43% subjective, 48% objective)

Acknowledgments & references

Tanskanen & Gazdar 2001 propose that EMs do not all raise to the same position, instead, they posit a hierarchy of functional projections with particular landing sites for different quantificational operators. You know that the building has an elevator; you can’t tell who has left.

Every student might have left

Matrix - objective - every

Every student might have left

Matrix - subjective - every

Every student might have left

Every student might have left

Objectively speaking, every student might have left

Embodied - subjective - every

Martin claimed that every student might have left

Embodied - subjective - every

Martin claims that every student might have left

References:

Anand & Hacquard 2007


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