

## An unexceptional semantics for expressions of exception

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**Introduction.** Exceptive phrases with *but* pose several puzzles. How does (1) come to entail that John did not come (‘negative entailment’, 1a), and that every other student came (‘otherness entailment’, 1b)? Why is *but* generally unable to occur with non-universal quantifiers, e.g. (2)? Why can *but* still occur with existential *any* under negation, (3)?

(1) *Every student but John came.* a.  $\neg \text{came}(\text{John})$  b.  $\forall x [(student(x) \ \& \ x \neq \text{John}) \rightarrow \text{came}(x)]$

(2) \**Some student but John came.* (3) *John didn’t talk to any student but Mary.*

Gajewski (2008, 2013) gives a unified framework to resolve these puzzles, developing ideas in von Stechow (1993): *but* itself denotes set subtraction (responsible for the otherness entailment), activates alternatives to its complement, and is strengthened by a higher operator (responsible for the negative entailment and (2)), which can take scope non-locally to *but* (responsible for the effect of negation in (3)). In this framework, exceptives become a testing ground for two general questions: how are alternatives computed, and what is the inventory of grammatical strengtheners?

This paper adopts Gajewski’s framework, and argues that exceptives are compatible with an “unexceptional” hypothesis: alternatives are computed à la Rooth (1985, 1992), and the only strengthener is the Exh operator of e.g. Fox (2007). This hypothesis was anticipated in Gajewski (2008, 2013), but rejected: it faces a challenge in accounting for the distribution of *but*, which led Gajewski to conclude that *but* must either introduce more complex alternatives (Gajewski 2013), or be strengthened by an unfamiliar operator whose denotation requires structured meanings (Gajewski 2008). I suggest a way to overcome the challenge, making exceptives, too, an argument for traditional methods of alternative computation and strengthening. I then provide new arguments for the framework itself by extending its coverage to account for the incompatibility of *but* with quantifiers like *all six/both*, and the behavior of *other than*.

**Alternatives: Roothian; strengthening operator: Exh.** In (1), *but* subtracts John from the set of students, making the restrictor of *every* the set of students who are not John. *But* obligatorily co-occurs with Exh, which takes propositional scope. Exh’s arguments are a proposition (‘prejacent’, p) and a set of alternatives to the prejacent (ALT). Assuming the Exh of Fox (2007) (adapting Gajewski), Exh returns the proposition that p is true and that all elements in ALT are false, so long as they are not entailed by p and can be negated without a contradiction (“innocent exclusion”).

(4) a.  $[[\text{Exh}]](\text{ALT}_{\langle \text{st}, \text{t} \rangle})(\text{p}_{\text{st}})$  (simplification)  
 $= \lambda w . \text{p}(w) \ \& \ \forall q \in \text{ALT} [(p \not\Rightarrow q \ \& \ q \text{ is innocently excludable given ALT}) \rightarrow q(w) = 0]$

b.  $q$  is innocently excludable given ALT if  $\neg \exists q' \in \text{ALT} [p \not\Rightarrow q' \ \& \ (p \ \& \ \neg q \Rightarrow q')]$

**The entailments in (1) follow:** The prejacent of Exh, cf. (5), is the proposition that every student who is not John came. By asserting the truth of the prejacent, Exh introduces the otherness entailment in (1b). The negative entailment in (1a) comes from Exh negating alternatives. The complement of *but* is obligatorily F-marked (Gajewski 2008), and alternatives are computed by replacing the complement with other elements of type e à la Rooth (1985, 1992).

(5)  $\text{Exh}[\text{every student but John}_F \text{ came}]$  (6)  $\{(a) \text{ every student but Bill came}\} \subset \text{ALT}$

ALT includes (6a), which is not entailed by the prejacent and so is asserted to be false. (6a) says that every student who is not Bill came. If (6a) is false, there must be some non-Bill student who did not come. Since the prejacent establishes that every non-John student came, the non-Bill student who did not come must be John. Hence, (1a).

**The distribution of ‘but’ almost follows, focusing on (2):** The prejacent of Exh is the proposition that some non-John student came, (7). Supposing a scenario with three (or more) students (e.g. John, Bill, Mary), ALT includes (8a-b). (8a-b) are not, though, innocently excludable.

(7)  $\text{Exh}[\text{some student but John}_F \text{ came}]$

(8)  $\{(a) \text{ some student but Bill came}, (b) \text{ some student but Mary came}\} \subset \text{ALT}$

By the prejacent, Bill or Mary came. If (8a) is false, Mary must not have come. If (8b) is false, Bill must not have come. The prejacent and  $\neg(8a)$  entail that Bill came, contradicting  $\neg(8b)$ , so (8a) cannot be excluded — and similarly for (8b). This reasoning extends to every other alternative, with the result that Exh cannot negate any alternative. (2) could then be ruled out by a constraint prohibiting vacuous application of Exh (cf. Fox & Spector 2009, Spector 2013, Gajewski 2013).

There is, however, a complication, which leads Gajewski to reject an analysis like the one I have given: it is possible to construct a scenario where there are innocently excludable alternatives for Exh to negate in (2), namely a scenario in which there are only two students (John, Bill). With the smaller

domain, (9a-b) are the only alternatives to the prejacent, and both can be consistently negated. If Bill but not John came, the prejacent is true (some non-John student came), and (9a-b) are false.

(9) *{(a) some student but Bill came, (b) some student but John and Bill came}* = ALT

So, why isn't (2) grammatical and felicitous in a scenario with two students?

**Anti-singleton constraint:** I suggest a constraint that existential quantification is infelicitous when the speaker and hearer can know that the restrictor of the existential is necessarily a singleton without knowing the extension of the restricting NP or the conversationally determined domain of quantification ('anti-singleton'). This is independently supported by e.g. like (10)-(11):

(10) #*Some father of the victim came.* (Heim 1991) (11) #*Some tallest student in the class is here.*

For (2), in the scenario with two students, the restrictor of the existential in the prejacent is a singleton: *but* subtracts *John* from the set of students {John, Bill} yielding {Bill} as the restrictor of *some*. Since this is the only scenario where (2) is not ruled out by the constraint against vacuous Exh, the speaker/hearer must know that the restrictor is necessarily a singleton, and (2) is then fully ruled out by the anti-singleton constraint.

The phenomenon, as Gajewski observes, generalizes. Any sentence with the schema in (12) is predicted to involve non-vacuous exhaustification only in a scenario where there is one student left over when *x, y ... , z* are subtracted; the anti-singleton constraint thus fully rules out the sentence.

(12) \**Some student but x, y, ..., z came.* (13) \**Exactly three students but John came.*

(13) can be diagnosed in the same way. (13) involves non-vacuous exhaustification only in a scenario where there are exactly four students (John and three others); if *exactly three* involves existential quantification over three-membered pluralities (+strengthening), this is a scenario where only one three-membered plurality is left over after subtraction in the prejacent. So again, given the anti-singleton constraint, the sentence is ruled out, capturing the distribution of *but*.

**Presupposition projection.** Although *but* can in general occur with universal quantifiers, *but* cannot occur with *all six* (Moltmann 1995, fn. 2) and *both*, which have universal force, but carry a presupposition about the size of the domain over which they quantify (a cardinality of six for *all six*, duality for *both*). Relatedly, *but* cannot occur with singular definites, presupposing uniqueness.

(14) *{(a) \*All six students, (b) \*Both students, (c) \*The student} but John came.*

I argue that the effect of presupposition can be understood in Gajewski's framework — provided, as I will defend, that presuppositions project universally out of alternatives. E.g. in (14a), the prejacent of Exh presupposes that there are exactly six students who are not John (15a), and the alternative in (15b) presupposes that there are exactly six students who are not John or Bill.

(15) a. *Prejacent: all six students but John came. Presupp: 7 students total (incl. John).*

b. *Alt: all six students but John and Bill came. Presupp: 8 students total (incl. John/Bill)*

The presuppositions are incompatible, and with the presupposition in (15b) projecting, the sentence is ruled out due to presupposition conflict.

**Beyond but.** It has been observed that connected exceptives differ on two dimensions: (i) whether they are restricted to occur with universal quantifiers, and (ii) whether they introduce the negative entailment. Of the four possible combinations of (i) and (ii), two are clearly attested in English (adjacent table). (16) shows that *other than* is not restricted to universals (occurs with *three*), and has no negative entailment (John could have come too or not).

	Negative entailment	No negative entailment
Restricted to universals	<i>but</i>	-
Not restricted to universals	-	<i>other than</i>

(16) *Three students other than John came.* (e.g. Moltmann 1995: 230)

Since the negative entailment and distributional restrictions are both linked to exhaustification, the table is predicted in a principled way. *But* and *other than* are a spell-out of the same set subtraction operator, but differ in whether or not they co-occur with Exh. *But* is an optional allomorph when Exh is present; *other than* can occur without Exh as in (16) — or with Exh, as demonstrated by (17).

(17) *Either every student other than John came, or every student came including John.*

Hurford's Constraint (HC) bans a disjunction when one disjunct entails the other (Hurford 1974). Without Exh in the first disjunct in (17), the first disjunct says that everyone who is not John came, which is entailed by the second disjunct. With Exh, the first disjunct says also that John did not come, which the second disjunct does not entail. The fact that (17) is felicitous argues that there is an available parse of the first disjunct with Exh (cf. Chierchia et al. 2009). Importantly, when *other than* occurs in an environment where Exh is impossible, HC violations do occur, e.g. with *some*:

(18) #*Either some student other than John came, or John and some other student came.*