Exceptive constructions

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Lecture 1: *But*-exceptives in English

Introduction: what this class is about

Exceptive constructions

In English, universal quantifiers can occur with exceptive phrases like *but* in (1) and (2).

(1) Every girl but Mary was there.

(universal quantifier)

(2) No girl but Mary was there.

(negative universal quantifier)

Inferences

(1) Every girl but/except Mary was there.

The domain subtraction: ‘Every girl who is not Mary was there.’

The containment inference: ‘Mary is a girl.’

The negative inference: ‘Mary was not there.’

(2) No girl but/except Mary was there.

The domain subtraction: ‘No girl who is not Mary was there.’

The containment inference: ‘Mary is a girl.’

The positive inference: ‘Mary was there.’

(Keenan & Stavi 1986; Hoeksema 1987, 1995; von Fintel 1993, 1994; Moltmann 1995; Lappin 1996; Gajewski 2008; Garcia-Alvarez 2008; Hirsch 2016, etc.)

The distribution puzzle

(3) *Some girls but/except Mary and Ann were there.

(4) *Several girls but/except Mary and Ann were there.

(5) *Three girls but/except Mary and Ann were there.

Horn (1989, p.346)

Semantic variation

Not all exceptive constructions yield ungrammaticality with non-universal quantifiers.

(6) Every girl besides Mary was there.

The domain subtraction: ‘Every girl who is not Mary was there.’

The containment inference: ‘Mary is a girl.’

The negative inference: ‘Mary was not there.’

(7) Some/several girls besides Mary were there.

(8) Three girls besides Mary were there.

Semantic variation: exceptive-additive constructions

(6) Every girl besides Mary was there.

The domain subtraction: ‘Every girl who is not Mary was there.’

The containment inference: ‘Mary is a girl.’

The negative inference: ‘Mary was not there.’

(7) Some girl besides Mary was there.

The domain subtraction: ‘Some girl who is not Mary was there.’

The containment inference: ‘Mary is a girl.’

The positive inference: ‘Mary was there.’

Syntactic variation

(9) I got no presents, except from my mom.

(10) *I got no presents, but from my mom.

Syntactic variation: clausal and phrasal exceptives

(11) Every girl was there except possibly Mary.

(12) *Every girl was there but possibly Mary.

Crosslinguistic variation

Tundra Nenets *xavna* differs from *except* and *but* in that it can co-occur with existential quantifiers.

(13) Malh nje ŋacjekiᵠ Anjaʰ xavna тоᵠ. ⇒ Anja did not come
All woman kid.PL Anja.GEN xavna came.Pl
'All girls except Anya came'

(14) Ɒob.kart nje ŋacjeki Anjaʰ xavna ni тu. ⇒ Anja came
One.even woman kid Anja.GEN xavna NEG came
'No girls except Anya came'

However, it also diverges from *besides* in that, when doing so, it contributes a negative inference

(15) Xanjanyᵠ nje ŋacjekiᵠ Anjaʰ xavna тоᵠ· ⇒ Anja did not come
some woman kid.PL Anja.GEN xavna came.Pl

Besides exceptives

In this class we will also cover:

- quantifiers in natural languages
- the semantic mechanisms underlying the ungrammaticality of ‘some’+’but/except’, which are also pertinent in driving scalar implicatures, NPI licensing, namely EXH operators
- the semantics of modified numerals
- logic and grammar

But-exceptives in English

Simple subtraction is not sufficient

(1) Every girl but Mary was there.

Let's assume that the set of girls is {Mary, Ann, Jane, Ivy}

Then, one idea we could consider is that *but* simply removes Mary from the domain:

(16) $\forall x[x \in \{\text{Ann, Jane, Ivy}\} \rightarrow x \text{ was there}]$

Simple subtraction idea is not sufficient

(1) Every girl but Mary was there.
(16) $\forall x[x \in \{Ann, Jane, Ivy\} \rightarrow x$ was there$]$

- This will not guarantee that Mary is a girl
- This will not capture the inference that Mary was not there
- This does not account for the fact that (3) is not a well-formed sentence.

(3) *Some girl but Mary was there.
(16) $\exists x[x \in \{Ann, Jane, Ivy\}$ & x was there$]$

von Fintel 1993

The classic approach – subtraction + leastness

The contribution of an exceptive is twofold (von Fintel 1993, 1994):

- An exceptive subtracts a set from the domain of a quantifier;

- It also states that this is the minimal set that has to be subtracted in order for the quantificational claim to be true.

The classic approach – subtraction + leastness

(1) Every girl but Mary was there.

domain subtraction

$[\![(1)]\!]^g = T$ iff $\forall x[x \in (\{z: z \text{ is a girl}\} - \{Mary\}) \rightarrow x \text{ was there}]$ &

$\forall Y[\neg(\{Mary\} \subseteq Y) \rightarrow \neg \forall x[x \in (\{z: z \text{ is a girl}\} - Y) \rightarrow x \text{ was there}]]$

leastness

Leastness

(18) $\forall Y[\neg(\{Mary\} \subseteq Y) \rightarrow \neg\forall x[x \in (\{z: z \text{ is a girl}\} - Y) \rightarrow x \text{ was there}]]$

- Take any set that does not have Mary in it;

- if you subtract it from the domain of ‘every’, the quantificational claim is not going to be true.

Leastness

In other words, we need to remove Mary from the domain, otherwise the quantification is not going to be true.

Since the subtraction of this set is necessary for the quantificational claim to be true, Mary has to be a girl and has to be among the people who did not come.

Otherwise, the quantificational claim could not change its truth-value depending on whether we include those two individuals in the domain of quantification or exclude them.

Leastness

Equivalently:

(19) $\forall Y[\neg(\{Mary\} \subseteq Y) \rightarrow \exists x[x \in (\{z: z \text{ is a girl}\} - Y) \ \& \ \neg \text{ x was there}]]$

the set of girls is {Mary, Ann, Jane, Ivy}

One set that does not have Mary in it: {Ann, Jane, Ivy}

(20) $\exists x[x \in (\{Mary, Ann, Jane, Ivy\} - \{Ann, Jane, Ivy\}) \ \& \ \neg \text{ x was there}]$

(21) $\exists x[x \in \{Mary\} \ \& \ \neg \text{ x was there}]$

The classic approach: subtraction + leastness

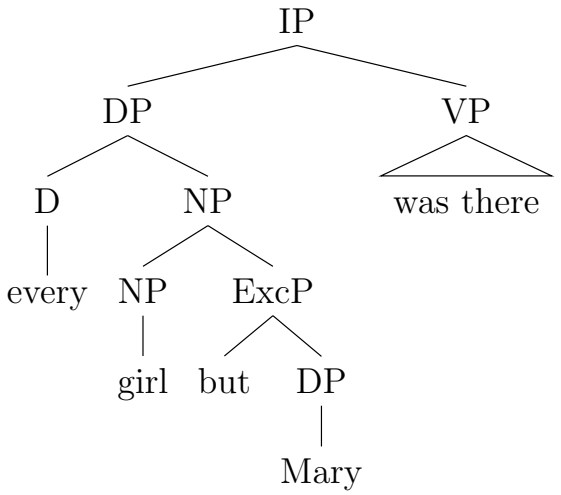
Compositionally:

(22) $[\![\text{but}]\!]^g = \lambda B_{<et>}.\ \lambda A_{<et>}.\ \lambda D_{<<et><<et>t>>}.\ \lambda P_{<et>}.$

sist of *but* restr set determiner scope

$$D(A-B)(P)=1 \quad \& \quad \forall Y[\neg B \subseteq Y \rightarrow \neg D(A-Y)(P)=1]$$

Domain subtraction Leastness

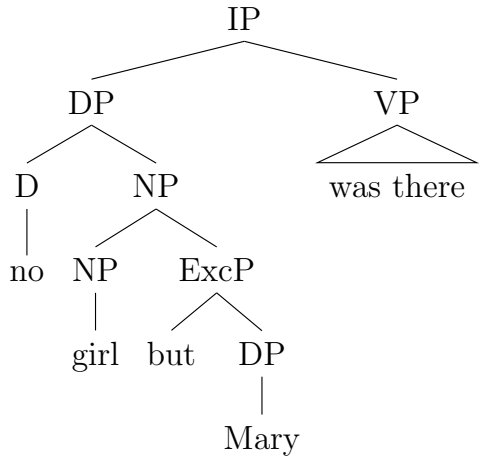


The unified treatment of universal and negative quantifiers

A great advantage of this approach is that it is straightforwardly extendable to negative quantifiers.

negative quantifier + ‘but’

(2) No girl but Mary was there.



domain subtraction

$[\![(2)]\!]^g = \neg\exists x[x\in(\{z: z \text{ is a girl}\} - \{Mary\}) \;\&\; x \text{ was there}] \;\&$

$\forall Y[\neg(\{Mary\}\subseteq Y) \rightarrow \neg\neg\exists x[x\in(\{z: z \text{ is a girl}\} - Y) \;\&\; x \text{ was there}]]$

leastness

negative quantifier + ‘but’

Let’s assume that the set of girls is {Mary, Ann, Jane, Ivy}

One set that does not have Mary in it: {Ann, Jane, Ivy}

(24) $\exists x[x \in (\{Mary, Ann, Jane, Ivy\} - \{Ann, Jane, Ivy\}) \ \&$ x was there]

(25) $\exists x[x \in \{Mary\} \ \&$ x was there]

The distribution puzzle

The key idea: (3) is bad because something is wrong with its meaning.

(3)*Some girls but Mary were there.

domain subtraction

(26) $[\![(3)]\!]^g$ = T iff $\exists x[x \in (\{z: z \text{ is a girl}\} - \{\text{Mary}\}) \;\&\; x \text{ was there}] \;\&$
$\forall Y[\neg(\{\text{Mary}\} \subseteq Y) \rightarrow \neg\exists x[x \in (\{z: z \text{ is a girl}\} - Y) \;\&\; x \text{ was there}]]$

leastness

The distribution puzzle

the set of girls is {Mary, Ann, Jane, Ivy}

One set that does not have Mary in it: ∅

(27) ¬∃x[x∈({Mary, Ann, Jane, Ivy}-∅) & x was there]

Subtracting ∅ means nothing is subtracted:

(28) ¬∃x [x∈{Mary, Ann, Jane, Ivy}& x was there]

This contradicts the first conjunct in (26).

The distribution puzzle

- The meaning resulting from putting together ‘some’ and ‘but’ is contradictory.
- but why does it lead to ungrammaticality?
- After all contradictions are not ungrammatical in natural languages:

(31) John is tall and he is not tall.

- (3) is contradictory due to the combination of ‘some’ and ‘but’ ; it does not matter what lexical elements are in the sentence as well (‘girl’ or ‘student’ or ‘teacher’/ ‘was there’ or ‘got a gift’ or ‘danced’)

(3)*Some girls but Mary were there.

- Gajewski (2002): constructions that are predicted to yield a contradictory or tautological meaning due to the combination of the functional elements are perceived as ungrammatical in natural languages.

The distribution puzzle

(29) *Most girls but Mary were there.

- The sentence without ‘but Mary’ means: more than half of the girls were there;
- This quantifier does not give rise to unique exceptions;
- Leastness leads to a contradiction with the domain subtraction

  Domain subtraction: more than half girls in this set {Ann, Jane, Ivy} came (let’s assume those are Ann and Jane)

  Leastness: take any set that does not have Mary in it: if you subtract it, it is not more than half in the resulting domain came.

  This cannot hold:

  Subtracting {Ann}: not more than half there: {Mary, Jane, Ivy}

  Subtracting {Jane}: not more than half there: {Ann, Mary, Ivy}

  Subtracting {Ivy}: not more than half there: {Ann, Jane, Mary} (leading to the conflict with the domain subtraction)

The distribution puzzle

(29) *Most girls but Mary were there.

- The two claims can be consistent if the domain of individuals consist only of 2 people
- Then it is true that if we do not consider Mary ‘most girls were there’ (the only remaining individual Jane)

  (30) {Mary, Jane}
- But subtracting any set that does not have Mary in it (∅ or {Jane}) will make ‘not more than half’ true)
- This kind of scenario have to be excluded by restrictions on using ‘most’ when the domain contains only one individual

The challenges for the classic approach

Is leastness contributed by ‘but’?

Problem 1

So far, we accounted for the ungrammaticality of sentences like (32).

(32) *I ate some vegetables but cucumbers.

But now we are failing to predict the grammaticality of (33).

(33) I did not eat any vegetables but cucumbers.

- It is conventional to assume that any has an existential semantics and is licensed in a downward entailing environment.
- Leastness is built into the meaning of ‘but’
- The problem arises at the level of putting together ‘any’ and ‘but’

(Gajewski 2008)

Is leastness contributed by ‘but’?

Problem 2

- NPIs like ‘any cucumbers’ are licensed in a DE environment.

(34) No one ate any vegetables.

- DE environment: the environment that supports an inference from a set to a subset:

(35) No one ate vegetables.

(36) No one ate cucumbers.

- If ‘but’ contributed leastness, the grammaticality of (37) is problematic

(37) No one but John ate any cucumbers.

Is leastness contributed by ‘but’?

Problem 2

The issue in a nutshell:

- Leastness is the negation of alternative quantificational claims;
- The negation of the negative quantifier is equivalent to an existential claim;
- The scope of existentials is not a DE environment;
- The positive inference contributed by leastness (that John are cucumbers) breaks the monotonicity pattern;
- This can be appreciated by looking at the entailment pattern for the whole sentence and observing that the position of any is not in a DE environment globally: (38) does not entail (39);
- The former can be true in a scenario where no one other than John ate any vegetables, and John ate only tomatoes.
- The latter is false in that scenario.

(38) No one but John ate vegetables.

(39) No one but John ate cucumbers.

(Gajewski 2008)

Separating domain subtraction and leastness syntactically

Gajewski 2008:

- both problems can be solved if we assume that ‘but’ only contributes domain subtraction

- the leastness – aspect of meaning comes from some other operator

Separating domain subtraction and leastness syntactically

Solution to Problem 1

(33) I did not eat any vegetables but cucumbers.

Let's call the operator contributing the leastness 'LEAST'

We will apply this operator above negation: existential 'any' +NEG = negative quantifier
LF:

(40) LEAST [NEG I eat any vegetables but cucumbers]

Separating domain subtraction and leastness syntactically

Solution to Problem 2

NPIs can be licensed locally even if the global environment is not DE.

(41) It is not true that John did not eat any vegetables.

- Two negations in (41) cancel each other out;
- If we look at the whole sentence, NPI is not in a DE environment;
- No entailment from (42) (could be true if John eat only tomatoes) to (43)

(42) It is not true that John did not eat vegetables.

(43) It is not true that John did not eat cucumbers.

- Conclusion: the NPI in (41) is licensed because there is a syntactic constituent that is a DE environment for ‘any’:
  [John did not eat any vegetables]

Separating domain subtraction and leastness syntactically

Solution to Problem 2

In the same way, the NPI is licensed in (37) locally in the highlighted syntactic constituent.

(37) No one but John ate any cucumbers.

(44) LF: [LEAST [no one but John ate any cucumbers]]

The remaining puzzle to work on

(45) *No student read a book on the list but Moby Dick.

The technical implementation of this idea

(3) No girls but Mary_F were there.

(46) $[\![\text{but}]\!]^g = \lambda B.\ \lambda A.\ A\text{-}B$

But obligatorily marks its complement with an F.

A structured meaning approach to focus (Jacobs 1983, Krifka 1991)

The focus denotation of 'no girls but Mary_F were there':

(47) $\langle \lambda X.\neg\exists x\ [x \in (\{z: z \text{ is a girl}\}\text{-}Y)\ \&\ x \text{ was there}],\ \{\text{Mary}\} \rangle$

(48) $\text{LEAST}(\langle F, X\rangle) = 1$ iff $F(X)=1\ \&\ \forall Y\ [\neg(X \subseteq Y) \rightarrow \neg F(Y)]$

A question for this implementation

LEAST is a silent operator.

What motivates having another unpronounced operator in our inventory of silent operators?

Can we derive all the relevant properties of ‘but’ exceptives in terms of the operators that are attested in other areas of semantics, such as EXH?

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