Exceptives and cardinality

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An observation

- Cardinal determiners seem not to tolerate exceptives

(1) a. all eleven Argentinian players got a yellow card
b. #all eleven Argentinian players except Messi and Otamendi got a yellow card

(2) a. both parents of the child came to the meeting
b. #both parents of the child except his father came to the meeting

quick solution

- Cardinal determiners imposes a condition on the size of their restrictor

(3) a. $[\![\text{all eleven}]\!] = \lambda P : |P| = 11.\ \lambda Q.\ \forall x : Px \rightarrow Qx$
b. $[\![\text{both}]\!] = \lambda P : |P| = 2.\ \lambda Q.\ \forall x : Px \rightarrow Qx$

- exceptives are NP modifiers and have subtractive semantics (von Fintel, 1993; Gajewski, 2008; Hirsch, 2016; Crnič, 2018)

(4) $[\![\text{A except B}]\!] = [\![\text{A}]\!] \backslash [\![\text{B}]\!]$

- exceptives give rise to presupposition failure

(5) a. #all eleven [$_P$ Argentinian players except Messi and Otamendi] [$_Q$ got a yellow card] $|P| \neq 11$
b. #both [$_P$ parents of the child except his father] [$_Q$ came to the meeting] $|P| \neq 2$

not so quick...

- the deviance persists under appropriate change of the numeral

(6) a. #all nine [$_P$ Argentinian players except Messi and Otamendi] got a yellow card $|P| = 9$

b. #both [$_P$ members of the Beaux Arts trio except Menahem Pressler] came to the meeting $|P| = 2$

- the problem seems to be general

(7) #all seven students except John came to the meeting

hunch...

(8) [D_{card} NP except X] ...

a. requires that both NP and [NP except X] satisfy the presupposition of D_{card}

b. $|NP| \neq |NP \text{ except } X|$

to explain

- Inferences

(9) all students except John came to the meeting
 a. John is a student
 b. John did not come to the meeting
 c. all other students came to the meeting

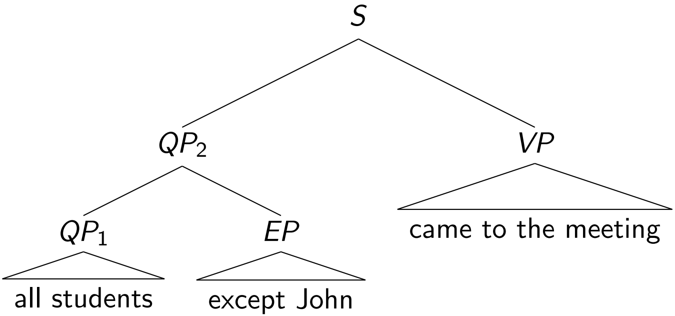
- Distribution

(10) a. all students except John came to the meeting
 b. #some student except John came to the meeting

main idea

- Moltmann (1995) takes the exceptive phrase to be a modifier of quantifiers (QPs)

(11)



prediction (1)

suppose a, b, c are students and d, e are not...

(12) $[_S\ [_{QP_2}\ [_{QP_1}$ all students] [except b]] $[_{VP}$ came]]

a. $[\![QP_1]\!]$
$= \{P \mid [\![\text{students}]\!] \subseteq P\}$
$= \{\{a, b, c\}, \{a, b, c, d\}, \{a, b, c, e\}, \{a, b, c, d, e\}\}$

b. $[\![QP_2]\!]$
$$= \begin{cases} \{P \backslash \{b\} \mid P \in [\![QP_1]\!]\} & \text{if } \forall P' \in [\![QP_1]\!] : b \in P' \\ \# & \text{otherwise} \end{cases}$$
$= \{\{a, \not{b}, c\}, \{a, \not{b}, c, d\}, \{a, \not{b}, c, e\}, \{a, \not{b}, c, d, e\}\}$
$= \{\{a, c\}, \{a, c, d\}, \{a, c, e\}, \{a, c, d, e\}\}$

c. $[\![S]\!]$
$= 1$ iff $[\![\text{VP}]\!] \in [\![QP_2]\!]$
$= 1$ iff $[\![\text{came}]\!] \in \{\{a, c\}, \{a, c, d\}, \{a, c, e\}, \{a, c, d, e\}\}$

prediction (2)

suppose a, b, c are students and d, e are not...

(13)#[$_S$ [$_{QP_2}$ [$_{QP_1}$ all students] [except d]] [$_{VP}$ came]]

a. $[\![QP_1]\!]$
$= \{P \mid [\![\text{students}]\!] \subseteq P\}$
$= \{\{a, b, c\}, \{a, b, c, d\}, \{a, b, c, e\}, \{a, b, c, d, e\}\}$

b. $[\![QP_2]\!]$
$= \begin{cases} \{P \backslash \{d\} \mid P \in [\![QP_1]\!]\} & \text{if } \forall P' \in [\![QP_1]\!] : d \in P' \\ \# & \text{otherwise} \end{cases}$
$= \#$

prediction (3)

suppose a, b, c are students and d, e are not...

(14)#[$_S$ [$_{QP_2}$ [$_{QP_1}$ some student] [except b]] [$_{VP}$ came]]

a. $[\![QP_1]\!]$
$= \{P \mid [\![\text{students}]\!] \cap P \neq \emptyset\}$
$= \{\{a, d, e\}, \{b, d, e\}, \{c, d, e\}, \{a, b, d, e\}, \{a, c, d, e\}, ...\}$

b. $[\![QP_2]\!]$
$$= \begin{cases} \{P \backslash \{b\} \mid P \in [\![QP_1]\!]\} & \text{if } \forall P' \in [\![QP_1]\!] : b \in P' \\ \# & \text{otherwise} \end{cases}$$
$= \#$

problem with cardinality

suppose a, b, c are students and d, e are not...

(15)#$[_S\ [_{QP_2}\ [_{QP_1}$ all three students] [except b]] $[_{VP}$ came]]

a. $[\![QP_1]\!]$
$$= \begin{cases} \{P \mid [\![\text{students}]\!] \subseteq P\} & \text{if } |[\![\text{students}]\!]| = 3 \\ \# & \text{otherwise} \end{cases}$$
$$= \{\{a, b, c\}, \{a, b, c, d\}, \{a, b, c, e\}, \{a, b, c, d, e\}\}$$

b. $[\![QP_2]\!]$
$$= \begin{cases} \{P \backslash \{b\} \mid P \in [\![QP_1]\!]\} & \text{if } \forall P' \in [\![QP_1]\!] : b \in P' \\ \# & \text{otherwise} \end{cases}$$
$$= \{\{a, \not{b}, c\}, \{a, \not{b}, c, d\}, \{a, \not{b}, c, e\}, \{a, \not{b}, c, d, e\}\}$$
$$= \{\{a, c\}, \{a, c, d\}, \{a, c, e\}, \{a, c, d, e\}\}$$

c. $[\![S]\!]$
$$= 1 \text{ iff } [\![\text{VP}]\!] \in [\![QP_2]\!]$$
$$= 1 \text{ iff } [\![\text{came}]\!] \in \{\{a, c\}, \{a, c, d\}, \{a, c, e\}, \{a, c, d, e\}\}$$

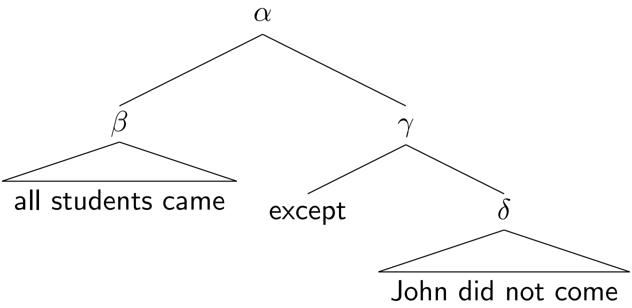
main idea

- Vostrikova (2021) takes the exceptive phrase to be an eliptical clause

(16) all students except John came

a. PF = all students except John ~~did not come~~ came

b. LF =



prediction (1)

(17) $[_\alpha\ [_\beta$ all students came$]\ [_\gamma$ except $[_\delta$ John did not come$]]]$

(18) $[\![\alpha]\!]^{w_0} = 1$ iff

a. $[\![\delta]\!]^{w_0} = 1$
   'John did not come'

b. $\forall w.\ [\![\delta]\!]^{w} = 1 \rightarrow [\![\text{all}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 0$
   'John did not come ⇒ an actual student did not come'

c. $\forall w.\ \big([\![\delta]\!]^{w} = 0 \wedge [\![\text{came}]\!]^{w}\backslash\{j\} = [\![\text{came}]\!]^{w_0}\backslash\{j\}\big) \rightarrow [\![\text{all}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 1$
   'If John had come, all students would have come'

prediction (2)

suppose John is not a student...

(19) $[_\alpha\ [_\beta$ all students came$]\ [_\gamma$ except $[_\delta$ John did not come$]]$

(20) $[\![\alpha]\!]^{w_0} = 1$ iff

a. $[\![\delta]\!]^{w_0} = 1$

'John did not come'

b. $\forall w.\ [\![\delta]\!]^{w} = 1 \rightarrow [\![\text{all}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 0$

'John did not come ⇒ an actual student did not come'

c. $\forall w.\ \big([\![\delta]\!]^{w} = 0 \wedge [\![\text{came}]\!]^{w}\backslash\{\text{j}\} = [\![\text{came}]\!]^{w_0}\backslash\{\text{j}\}\big)$
$\rightarrow [\![\text{all}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 1$

'If John had come, all actual students would have come'

(20b) contradicts the supposition that John is not a student

prediction (3)

(21) $[_\alpha\ [_\beta$ some student t_γ came$]\ [_\gamma$ except $[_\delta$ John did not come$]]$

(22) $[\![\alpha]\!]^{w_0} = 1$ iff

a. $[\![\delta]\!]^{w_0} = 1$

'John did not come'

b. $\forall w.\ [\![\delta]\!]^{w} = 1 \rightarrow [\![\text{some}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 0$

'John did not come ⇒ no actual student came'

c. $\forall w.\ \big([\![\delta]\!]^{w} = 0 \wedge [\![\text{came}]\!]^{w}\backslash\{\text{j}\} = [\![\text{came}]\!]^{w_0}\backslash\{\text{j}\}\big) \rightarrow [\![\text{some}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 1$

'If John had come, an actual student would have come'

(22b) and (22c) require John to be the only student, which means (21a) is a violation of Maximize Presupposition

problem with cardinality

(23)$\#[_\alpha\ [_\beta$ all seven students came] $[_\gamma$ except $[_\delta$ John did not come]]

(24) $[\![\alpha]\!]^{w_0} = 1$ iff

a. $[\![\delta]\!]^{w_0} = 1$
'John did not come'

b. $\forall w.\ [\![\delta]\!]^{w} = 1 \rightarrow [\![\text{all seven}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 0$
'John did not come ⇒ one of the actual seven students did not'

c. $\forall w.\ \big([\![\delta]\!]^{w} = 0 \wedge [\![\text{came}]\!]^{w} \backslash \{\text{j}\} = [\![\text{came}]\!]^{w_0} \backslash \{\text{j}\}\big)$
$\rightarrow [\![\text{all seven}]\!]^{w}([\![\text{students}]\!]^{w_0})([\![\text{came}]\!]^{w}) = 1$
'If John had come, all seven students would have come'

the sentence is predicted to be fine if there are seven students

substraction & exhaustification

- exceptives are subtractive NP modifiers and associates with EXH

(25) a. $[_{\text{NP}}$ students [except John and Mary]] $=$ students$\backslash\{j, m\}$
b. EXH [all students [except John and Mary]$_{\text{F}}$ came]

- EXH says that the prejacent is true and all alternatives which are not entailed by the prejacent and which are defined are false

(26) $[\![\text{EXH S}]\!] = 1$ iff
a. $[\![\text{S}]\!] = 1$
b. $\forall \text{S}' \in \text{ALT(S)} : [\![\text{S}]\!] \not\subseteq [\![\text{S}']\!] \wedge [\![\text{S}']\!]$ is defined $\rightarrow [\![\text{S}']\!] = 0$

- EXH comes with non-idleness requirement

(27)#[EXH S] if [EXH S] $\Leftrightarrow$ S

cf. von Fintel (1993); Gajewski (2008); Hirsch (2016); Crnič (2018)

punch line

Alternatives of exceptives must be derived by deletion!

deletion alternatives

(28) all students [except John and Mary] came

a. all students [except John ~~and Mary~~] came ✓
b. all students [except ~~John and~~ Mary] came ✓
c. all students [~~except John and Mary~~] came ✓
d. all students [except John and Bill] came ✗
e. all students [except Bill and Mary] came ✗
f. all students [except Bill] came ✗

deriving the inferences of exceptives

(29) S EXH [all students except John and Mary came]
A all students$\setminus\{j, m\}$ came
B all students$\setminus\{j\}$ came
C all students$\setminus\{m\}$ came
D all students$\setminus\{\ \}$ came

(30) a. A $\not\subseteq$ B, C, D
b. S = 1 iff A = 1 and B, C, D = 0

(31) Given that A = 1
a. John is not a student $\vee$ John came $\Rightarrow$ C = 1
b. Mary is not a student $\vee$ Mary came $\Rightarrow$ B = 1

deriving the distribution of exceptives

(32) S EXH [some student except John and Mary came]
A some students$\backslash\{j, m\}$ came
B some students$\backslash\{j\}$ came
C some students$\backslash\{m\}$ came
D some students$\backslash\{\ \}$ came

(33) a. A $\subseteq$ B, C, D
b. S $=$ 1 iff A $=$ 1
$\rightsquigarrow$ EXH is idle!

solving the cardinality problem

(34) S EXH [[all seven [students except John and Mary]] came]
A all seven students$\backslash\{j, m\}$ came
B all seven students$\backslash\{j\}$ came
C all seven students$\backslash\{m\}$ came
D all seven students$\backslash\{\ \}$ came

(35) a. if there are nine students, then none of B, C, D is defined and EXH is idle
b. if there are not nine students, then A is not defined, which means S is not defined

importance of condition on alternatives

suppose exceptives have standard Katzirian alternatives...

(36) S EXH [[all seven [students except John and Mary]] came]
A all seven students$\backslash\{j, m\}$ came
B all seven students$\backslash\{j, b\}$ came
C all seven students$\backslash\{b, m\}$ came
D all seven students$\backslash\{m, b\}$ came
E all seven students$\backslash\{j\}$ came
F all seven students$\backslash\{m\}$ came
G all seven students$\backslash\{b\}$ came
H all seven students$\backslash\{\ \}$ came

(37) If there are nine students

a. A, B, C, D are defined
b. E, F, G, H are not defined
c. S $=$ 1 iff A $=$ 1 and B, C, D $=$ 0

Precision

- Moltmann (1995) observes that the larger the number, the more tolerant a cardinal determiner is of exceptives

(38) a. #all four students except John came
b. all four hundred students except John came

- however, the relevant factor seems to be how precise, not how large

(39) a. all four hundred students except John came
b. #all four hundered and one students except John came

cf. Krifka (2002, 2007)

relative sizes of NP and EP

- it seems the smaller NP/EP is, the less acceptable EP is

(40) a. all members of congress except the most radical leftists voted for the bill

b. #all members of congress except the democrats voted for the bill

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