On Negative Eventualities, Negative Concord, and Negative Yes/No Questions

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The Aim: to argue for the existence and linguistic importance of negative eventualities.
The Plan:

- evidence for negative eventualities;
- linguistic importance of negative eventualities:
  - Negative Concord;
  - negative yes/no questions;
- towards a Situation Semantics analysis of negative yes/no questions.

1 Negative Eventualities

Negative Eventualities $\stackrel{df}{=}$ eventualities whose existence is asserted with negated clauses, negated gerundial phrases, etc.

1.1 Arguments for their Existence

1.1.1 Suggestive Evidence

Anaphorical Reference Anaphors refer to abstract objects introduced by negative clauses.

(1) John did not ask Mary to dance at the party. *It* made her angry. (de Swart 1996)

(2) John didn't know the answer to the problem. *This* lasted until the teacher did the solution on the board. (de Swart 1996)

But anaphors may refer also to propositions and facts, e.g.:

(3) Susan's boyfriend has graduated. But Sally does not believe *it*. (proposition; Asher 1993)

(4) He is a brute. His behaviour shows *this* quite clearly. (fact)

Nominal Reference Davidson (1980, p.135): "events, if such there are, correspond to singular terms like 'Caesar's death'."

Parsons (1990, §2.3): explicit reference to events, e.g.:

(5) After <u>the singing of the *Marseille*</u> they saluted the flag. (Parsons 1990)

When do deverbal nominals refer to events?

Parsons (1990, §7.2), based on Vendler (1967):

- verbal gerund phrases, e.g., *Mary's having sung the song sweetly*;
- nominal gerund phrases, e.g., *Mary's sweet singing of the song*, but also deverbal nouns, e.g., *the destruction of the city.*

Propositions can almost always be expressed by verbal gerunds, and events can always be expressed by nominal gerunds, but the reverse does not hold (cf. *The destruction of the city surprised and saddened us*).

Asher (1993, §1.1): a more fine-grained distinction:

- ACC-*ing* gerund phrases, e.g., *Fred singing the* Marseille;
- POSS-*ing* gerund phrases, e.g., *Fred's giving the book to Mary*;
- *of-ing* gerund phrases, e.g., *the mayor's throwing of the pizza in the guest of honor's face*;
- derived nominals, e.g., *Caesar's destruction of Carthage.*

Propositional contexts (*X is true*, *believe X*) may take certain derived nominals, but not *of-ing* gerunds (or POSS-*ing* gerunds). **Factual contexts** (*indicate X*, *show X*) can take POSS-*ing* gerunds and perhaps also ACC-*ing* gerunds and certain derived nominals, but apparently not *of-ing* gerunds. So, it appears that *of-ing* gerunds refer (almost?) exclusively to **eventualities**.

A syntactic problem: *of-ing* gerunds do not combine with *not*:

(6) *the not exploding of the gases

Higginbotham (1996a, p.45):

(7) the non-explosion of the gases (Higginbotham 1996a)

(8) the non-rising of the sun (Higginbotham 1996a)

Polish:

(9) Wczorajsze niepodpisanie ustawy przez prezydenta było wydarzeniem, które
yesterday-ADJ not-signing bill-GEN by president was event which
zdominowało wiamości dnia.
dominated news day-GEN

'[[The president's not signing the bill] yesterday] was an event which dominated the day's news.'

Causation Standard assumption: only events can be causes and effects (Davidson, 1980; Thompson, 1977; Rosner, 1986; Parsons, 1990; Higginbotham, 1996a).

(10) I kept the child awake by not turning out the light. (Higginbotham 1996a)

(11) He didn't stop at the lights because he didn't notice them.

A possible problem: "facts appear to have causal efficacy" (Asher, 1993, p.29):

(12) The fact that John had a headache made him crabby. (Asher 1993)

(13) John's crabbiness resulted in the fact that everyone avoided him. (Asher 1993)

Similar examples are cited in Parsons (1990, p.160):

(14) John's rude answering of the phone was caused by his fight with his wife. (Parsons 1990)

a. = The fact that John answered in a rude manner was caused by...

b. ≠ The rude phone-answering event was caused by...

Parsons (1990) says, though, that such "tendency of certain kinds of causal talk to replace "event causation" with "fact causation" is discussed in detail in Bennett 1988..., [who] makes it clear how causal talk does not threaten the underlying event theory."

Perceptual Reports According to various papers by James Higginbotham (e.g., Higginbotham (1983, 1996b)) and to Parsons (1990), among others, perception verbs such as *see*, *hear*, etc., semantically select events (syntactically realized as naked infinitive constructions, etc.).

(15) The policeman saw Andrew not stop for the traffic light. (Engdahl; cf. Does 1991)

A different view: perception reports refer to situations (Barwise and Perry, 1983; Asher, 1993).

Explicit Quantification Parsons (1990, p.18):

(16) . In every burning, oxygen is consumed.
. Agatha burned the wood.
∴ Oxygen was consumed.

Analogously:

(17) . Whenever one$_i$ doesn't stop for the traffic light, one$_i$ breaks the law.
. She didn't stop for the traffic light.
∴ She broke the law.

Quantification over times? No:

(18) . Whenever he doesn't do his homework, he is punished.
. He hasn't done his homework today.
∴ He'll be punished.

(19) . In every not stopping for the traffic light, the law is broken.
. She didn't stop for the traffic light.
∴ The law was broken.

Polish:

(20) . Każde jego$_i$ nieodrobienie pracy domowej kończy się ukaraniem go$_i$.
every his not-doing homework-GEN ends with REFL punishing him
'His every not doing his homework ends with a punishment (lit.: punishing him).'
. On nie odrobi dziś pracy domowej.
he not do-FUT today homework
'He wont' do his homework today.'

∴ On będzie ukarany.
he be-FUT punished
'He will be punished.'

A possible (but very weak, I think) objection: the same argument seems to go through for facts (if they exist).

1.1.2 Strong Evidence

It is uncontroversial that only eventualities, not facts (or propositions), can happen, can be arguments of *take place*, exist in space and time, can be modified by adverbs of quantification (Vendler, 1967; Davidson, 1980; Horn, 1989; Parsons, 1990; Asher, 1993; de Swart, 1996).

Adverbs of Quantification de Swart (1996, pp.229–230), after Stockwell *et al.* (1973):

(21) He often hasn't paid taxes. (de Swart 1996)

(22) He sometimes doesn't eat dinner. (de Swart 1996)

If adverbs of quantification quantify over eventualities only, not over facts, then this provides a strong argument for negative eventualities.

Cardinality Adverbials According to Parsons (1990, p.224), postverbal cardinality adverbials quantify over events, not over times.

(23) In all his life, [John didn't come to a party he was invited to] twice. It was actually on the same evening.

Temporal Adverbials

(24) [John didn't play golf] until noon. (Higginbotham 1996a)

(25) [No one talked] for over two hours. (Asher 1993)[1]

Facts and propositions are timeless. The temporal adverbials above must modify eventualities (states).

[1]After Krifka (1987) and Bäuerle (1987).

Reference Time

(26) Mary smiled at John. He didn't smile back. (de Swart and Molendijk 1998)

Within DRT (Kamp and Reyle, 1993) assumptions, only events move forward reference time.

What happened?

(27) What happened next was that the consulate didn't give us our visa. (de Swart 1996)

Argument of *take place*

(28) His not fulfilling the duties of his position took place over a six-month period in 1983.

(29) Niedopełnienie obowiązków służbowych przez X miało miejsce w roku 1983.
non-fulfillment professional-GEN duties-GEN by X had place in year 1983
'X not fulfilling his professional duties took place in 1983.'

1.2 Problems

1.2.1 Modification

Very restricted modification possibilities:

(30) *John slowly didn't butter a piece of toast.

(31) *[John didn't butter a piece of toast] with a knife.

But:

(32) adverbials of duration:

a. [John didn't play golf] until noon. (Higginbotham 1996a)

b. [No one talked] for over two hours. (Asher 1993)

c. długie niepodpisywanie ustawy doprowadziło do...
long not-signing-IMPERF bill-GEN led to...
'[[not signing the bill] for a long] time led to...'
'[not [signing the bill for a long time]] led to...'

(33) other temporal adverbials:

Wczorajsze niepodpisanie ustawy przez prezydenta było wydarzeniem, które
yesterday-ADJ not-signing-PERF bill-GEN by president was event which
zdominowało wiamości dnia.
dominated news day-GEN

'[[The president's not signing the bill] yesterday] was an event which dominated the day's news.'

(34) locative adverbials:

?Nieutrzymanie równowagi przez Jelcyna, które miało miejsce w Azerbejdżanie,...
not-keeping balance by Yeltsin, which had place in Azerbaijan,...

'Yeltsin's stumbling, which took place in Azerbaijan,...'

(35) other adverbials:

wczorajsze nieoczekiwane nieuznanie praw X-a do tej
yesterday-ADJ unexpected not-recognizing rights-GEN X-GEN to this
posesji wywołało...
immovable property caused...

'[the unexpected [not recognizing X's rights to this immovable property] yesterday] caused...'

Also states can be modified only by a very restricted class of modifiers (Parsons, 1990, pp.188–189).

1.2.2 Negative Eventualities: States or Events?

The popular view: to the extent that negated clauses refer to eventualities at all, they refer to states (or, more generally, duratives, i.e., states or processes), e.g., Moens (1987); Asher (1993); Verkuyl (1993); de Swart (1996); de Swart and Molendijk (1998).

However, there is some body of evidence that negative eventualities may also be events:

(36) *What happened?*

a. *What happened next was that John loved Mary.

b. What happened next was that the consulate didn't give us our visa.
(de Swart 1996)

(37) Pseudo-Clefts:

a. *What John did was know the answer.

b. ?What the president did that caused such an uproar was not sign the bill / not tell the truth.

(38) Reference Time:

a. Mary smiled at John. He was handsome.

b. Mary smiled at John. He didn't smile back. (de Swart and Molendijk 1998)

de Swart and Molendijk (1998): an account of (38b) in terms of state-to-event coercion.

See also (32c) (an imperfective gerundial phrase) vs. (33) (a perfective gerundial phrase).

1.3 Metaphysical Status of Negative Eventualities

Bach (1981), Asher (1993): **natural language metaphysics** vs. **real world metaphysics**.

Natural language makes distinctions which, apparently, are not reflected in the real world, e.g.:

- the same real world event may be described as belonging to different aspectual classes, e.g.:
  - *Peter was doing the washing up* and *Peter washed the dishes* (Asher, 1993, p.8);
  - *eating a pint of ice cream* and *eating ice cream* (Krifka, 1992);
- *buying* and *selling* refer to two different events within the language metaphysics because *Kim bought the tricycle from Sheehan with his (Kim's) MasterCard* $\neq$ *Sheehan sold the tricycle to Kim with his (= Kim's) MasterCard* (Parsons, 1990, p.84); but these two language events may map to the same real event.

I see no arguments for positing a separate real world category for negative eventualities. But they should be recognized as first class citizens in natural language metaphysics.

2 Negative Eventualities and Negative Concord

If negative eventualities exist, what is their role in the grammar? A hypothesis: they play a licensing role in Negative Concord.

Negative Concord $\stackrel{df}{=}$ a phenomenon consisting in two or more *negative constituents* expressing jointly a single negation meaning.

Negative Constituent $\stackrel{df}{=}$ a constituent which may (alone) express (sentential) negation.

Polish:

(39) Janek **nie** pomógł Tomkowi.
John-NOM not help-PAST Tom-DAT
'John didn't help Tom.'

(40) Kto pomógł Tomkowi? **Nikt**.
who-NOM help Tom nobody-NOM
'Who helped Tom? Nobody.'

(41) Komu pomógł Janek? **Nikomu**.
who-DAT help John nobody-DAT
'Whom did John help? Nobody.'

(42) **Nikt** *(**nie**) pomógł **nikomu**.
nobody not help nobody
'Nobody helped anybody.'

Nikt, *nikomu*, etc., are called n-words (Laka, 1990). What licenses n-words?

- syntactic approaches, e.g., Progovac (1988, 1994) (n-words as anaphors), Laka (1990), Zanuttini (1991), Haegeman and Zanuttini (1991, 1996), Haegeman (1995) (n-words licensed by an operator in / the head of the ΣP / NegP projection), Przepiórkowski and Kupść (1997a,c,b) (n-words licensed long-distance by a morphosyntactic feature);
- entailment approaches (influenced by Ladusaw (1980) on NPIs), e.g., Progovac (1993), van der Wouden and Zwarts (1993), van der Wouden (1994), Dowty (1994) (downward / upward entailment, antimorphicity, antiadditivity), Giannakidou (1997, 1998) (antiveridicality);
- eventuality-level approach: Tovena (1996a,b) (sentential negation negates the existence of an event), Przepiórkowski (1999), Przepiórkowski and Kupść (1999) (sentential negation may represent a negative eventuality; see below).

Two (new) arguments for the eventuality-level approach:

2.1 Eventuality-Level Dependents

In Polish, n-words are licensed when they are eventuality-level dependents, or are within such dependents,[2] but not when they are within other dependents.

Eventuality-level dependents:

- arguments (cf. (42) above);
- temporal and locative modifiers:

[2]Subject to various syntactic constraints; cf. Przepiórkowski and Kupść (1997a, 1999).

(43) **Nigdy** / o **żadnej** porze **nigdzie** / w **żadnym** miejscu tego *(**nie**)
never / at no time nowhere / at no place this-GEN not
robiłem.
did-1.SG.MASC

'I haven't done it ever / at any time, anywhere / at any place.'

- instrumental modifiers:

(44) *(**Nie**) zrobisz tego **żadnym** młotkiem / **niczym**.
not do-2.SG this-GEN no-INS hammer-INS / nothing-INS

'You won't do that with any hammer / anything.'

- manner modifiers:

(45) *(**Nie**) zrobisz tego w **żaden** sposób / **nijak**.
not do-2.SG this-GEN in no way / nohow

'There is no way you can do that.'

Some non-eventuality-level modifiers:

- *according to X*, *in X's opinion*:[3]

(46) *Według/zdaniem **żadnego** rosyjskiego polityka, Polska **nie** powinna przystąpić do
according to no Russian politician Poland not should join to
NATO.
NATO

'According to no Russian politician, should Poland join NATO.' (putative)

- *thanks to X*:

(47) ***Nie** zrobiłem tego dzięki **nikomu**.
not do-1.SG.MSC.PAST this-GEN thanks nobody-DAT

'I haven't done this thanks to anybody.' (putative)

It's not the matter of the scope of negation:

(48) **Nie** zrobiłem tego dzięki Jankowi, tylko dzięki Tomkowi.
not do-1.SG.MSC.PAST this-GEN thanks John-DAT only thanks Tom-DAT

'I haven't done this thanks to John, only thanks to Tom.'

[3] I am grateful to Manfred Sailer for the examples below.

2.2 Negated Interrogatives

From Przepiórkowski and Kupść (1999):

(49) **Nie** widziałeś może Marii?
not see-2.SG.MSC.PAST perhaps Mary-GEN
'Have(n't) you perhaps seen Mary?'

(50) Naprawdę **nie** widziałeś Marii?
really not see Mary
'You really didn't see Mary?'

Intuitively, the difference between (49) and (50) is that, in (49), negation is neutralized (does not express a negative eventuality), while in (50) it is not neutralized: (50) is understood as a request for the confirmation of the existence of a negative eventuality. N-words can occur only in contexts like (50), see the contrast (51)–(52).

(51) ?***Nie** widziałeś może **nikogo**?
not see perhaps nobody-GEN
'Have(n't) you perhaps seen somebody/anybody?' (putative)

(52) Naprawdę **nie** widziałeś **nikogo**?
really not see nobody
'You really didn't see anybody?'

3 Negative Eventualities and Negated Interrogatives

3.1 Cross-Linguistic Considerations

Russian (Brown and Franks, 1995); the two readings of negative questions may be disambiguated by word order and/or the question particle *li*:

(53) **Ne** znaet li ***nikto** / kto-nibud′ iz vas, kak èto delaetsja?!
not knows Q nobody / anybody of you how this is done
'Does any one of you know how this is done?'

(54) **Nikto** iz vas **ne** znaet, kak èto delaetsja?!
nobody of you not knows how this is done
'None of you know how this is done?'

Serbo-Croatian (Progovac, 1994; Brown and Franks, 1995); the two readings are disambiguated by *zar* vs. *da*:

(55) Da ne zna ***ni(t)ko** / i(t)ko od vas kako se to radi?
COMP not know nobody / anybody of you how REFL this does

'Does any one of you know how this is done?'

(56) Zar **ne** zna **ni(t)ko** od vas kako se to radi?
really not know nobody of you how REFL this does

'Can it be that none of you know how this is done?'

German (Meibauer, 1990):

(57) Ich frage mich, ob Fritz (wirklich) **nicht** kommt.
I ask myself if Fritz (really) not comes

'I wonder whether Fritz is coming.'
'I wonder whether Fritz is (really) not coming.'

Italian (Przepiórkowski, 1999):

(58) Voleva sapere se **nessuno** ha telefonato.
wanted-3.SG know if nobody AUX phoned

'(S)he wanted to know whether anybody phoned.'
'(S)he wanted to know whether nobody phoned.'

(59) Voleva sapere se Mario (veramente) **non** ha telefonato.
wanted-3.SG know if Mario (really) not AUX phoned

'(S)he wanted to know whether Mario had phoned.'
'(S)he wanted to know whether Mario (really) hadn't phoned.'

Conclusions:

- negative yes/no questions are cross-linguistically ambiguous between, roughly,
  - *is(**n't**) it the case that... ?*; and
  - *is it the case that **not**... ?*;
- *n*-words are licensed by negation on the latter reading, but not on the former.

The last conclusion is confirmed by Italian:

(60) Voleva sapere se quasi **nessuno** ha telefonato.
wanted-3.SG know if almost nobody AUX phoned

*'(S)he wanted to know whether almost anybody phoned.'
?'(S)he wanted to know whether almost nobody phoned.'

Zanuttini (1991): *quasi nessuno* may be licensed by negation, but not by questionhood. Hence, only the negative reading available above.

3.2 A Situation Semantics Analysis of Negative Yes/No Questions

Main points:

- the ambiguity of (49)–(59) reflects the ambiguity of negation posited in Situation Semantics; see below;
- atomic eventualities represented by infons (states of affairs), not by situations; see below;
- n-words licensed by infons with polarity '$-$' (i.e., by negative infons); see Przepiórkowski (1999) and Przepiórkowski and Kupść (1999);
- the possibility of neutralization of negation in yes/no questions follows from standard Situation Semantics assumptions; see below.

3.2.1 Eventualities in Situation Semantics

Barwise and Perry (1983): events $\stackrel{?}{=}$ situations.

Various possible understandings of eventualities in Situation Semantics:

- atomic and abstract $\rightsquigarrow$ basic infons;
- cumulative and abstract $\rightsquigarrow$ infons;
- cumulative and real-world $\rightsquigarrow$ situations;[4]
- atomic and real-world $\stackrel{?}{\rightsquigarrow}$ minimal/atomic situations (Moore, 1993).

3.2.2 Ambiguity of Negation

(61) John saw Mary.

$s \models \ll \text{see}, J, M; + \gg$

'Situation s supports the state of affairs (infon) σ ($= \ll \text{see}, J, M; + \gg$).'

Negation (Barwise and Etchemendy, 1987; Devlin, 1991; Cooper, 1997):

[4] Or a subset of situations; cf. Glasbey (1994, p.241).

(62) John did not see Mary.

a. $s \models \ll \text{see}, J, M; - \gg$ (eventuality negation)
'Situation s supports the state of affairs $\bar{\sigma}$ ($= \ll \text{see}, J, M; - \gg$).'
'It is the case that John did not see Mary.

b. $\neg(s \models \ll \text{see}, J, M; + \gg)$ (propositional negation)
'Situation s does not support the state of affairs σ.'
'It is not the case that John saw Mary.'

3.2.3 Questions

Ginzburg (1992, 1995):

(63) Did John see Mary?

$s\ ?\ \ll \text{see}, J, M; + \gg$
'Does situation s support the state of affairs σ?'

(64) Didn't John see Mary?

a. $s\ ?\ \ll \text{see}, J, M; - \gg$ (eventuality negation)
'Does situation s support the state of affairs $\bar{\sigma}$?'

b. $\neg(s\ ?\ \ll \text{see}, J, M; + \gg)$ (propositional negation)
'Does situation s not support the state of affairs σ?'

Propositional negation is neutralised in yes/no questions because, answer-theoretically, (64b) and (63) are the same questions: an answer to one always determines the answer to the other. ((65) is valid in Situation Semantics.)

(65) $\forall s \forall \sigma (s \models \sigma \lor \neg(s \models \sigma))$ (valid)

Eventuality negation is *not* neutralised in yes/no questions because, answer-theoretically, (64a) and (63) are different questions: the answer 'No' to one does not determine the answer to the other. ((66) is not valid in Situation Semantics.)

(66) $\forall s \forall \sigma (s \models \sigma \lor s \models \bar{\sigma})$ (not valid)

Additional issues:

Why doesn't the ambiguity of negation surface in indicative clauses? As emphasised by Devlin (1991, pp.265–267, 289–290), cooperative use of utterances "places on the speaker an obligation that the described situation as understood by the listener... is sufficiently rich to *decide* the relevant issue..." In other words, although (66) is not valid, it is in general made true by the way we talk about situations; *described* situations are normally complete relative to the infons used to describe them (Devlin, 1991, p.267).

This means that the two meanings of (62) normally entail each other: (62a) entails (62b) via the valid (65), while (62b) implies (62a) via (66), which is usually made true by the way we talk about situations.

Why then does the ambiguity of negation surface in interrogative clauses? Completeness of every-day situations would imply that the two meanings of (64) should be equivalent. This is because, although the two readings are equivalent (by convention), only in one of them negation is answer-theoretically redundant, i.e., one of them is felt as 'positive', the other as negative.

This leads to the curious situation in which two readings of a clause are 'felt' as ambiguous, although they are answer-conditionally equivalent (subject to the completeness convention of situations).

4 Summary

(Relatively) pretheoretical results:

- negated clauses, negated deverbal nominals, etc., may express negative eventualities, possibly including negative events;
- there are arguments for the licensing role of negative eventualities in Negative Concord;
- negated interrogatives are ambiguous, with only one of the two readings licensing n-words (i.e., showing Negative Concord effects).

A theoretical result:

- an analysis of the ambiguity of negated interrogatives, and of the neutralization of one of the readings, in terms of Situation Semantics.

More questions than answers…

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