# On the history of negative counterfactuals

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# The plan for today's talk

➢ To present a historical puzzle in the semantics of negative counterfactuals in Hebrew and Aramaic and provide an explanation for this phenomenon.
➢ To investigate various phenomena, where negation is a significant factor, including:
  o the semantics of prepositions that carry negative components
  o The evolution of expletive negations and their influence on their surroundings
  o The differences between negative and positive counterfactuals

    The aim is to draw insights on the nature of negation from these phenomena.

# The puzzle

In Babylonian Hebrew and Aramaic (second half of the 1st millennium CE),
*ʾilmale* has the following distribution:

*ʾilmale* + DP – if not for X                              (negative)

*ʾilmale* + CP – had it been the case that…        (positive)

(Lambert 1880, Jastrow 1885, Ben Yehuda 1901, Segal 1932, Ben Hayyim 1952, Avineri 1964, Breuer 1999, Bar-Asher Siegal 2019 *inter alia*)

**ʾilmale**                      *šabbat…*
COND.IRR.NEG            Sabath
**"If it were not** Shabbat…" (Babylonian Talmud, Shabbat 24a)

**ʾilmale**      kāʿas-ti                    ʿale-kem
COND.IRR    be.angry.PST.1.SG      on-2.M.PL
**"for had I** become angry on you…" (Babylonian Talmud, Berachot 7a)

# The origin of ʾilmale in Hebrew and in Aramaic

ʾi       lu       lā
COND   IRR     NEG

*ʾilulā > ʾilule   (univerbation)            attested in Western Hebrew and Aramaic (-200 – +800)
            COND.IRR.NEG

ʾilule  > ʾilmale                                dissimilation – the Eastern Hebrew and Aramaic form

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┌─────────────────────────────────────────────┐
│ Originally (antecedent of conditional):      │
│         ʾilmale + CP                          │
└─────────────────────────────────────────────┘
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# Solving the puzzle (diachronically)

**Originally (antecedent of conditional):**

  *ʾilmale* + CP

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**Existential clause (bare existential)**

| *ʾilmale* | ∅ | DP |
|---|---|---|
| COND.IRR.NEG | EXIST | DP |

antecedent of conditional

→ Syntactic reanalysis →

| *ʾilmale* | | DP |
|---|---|---|
| WITHOUT | | DP |

**Prepositional Phrase**

*ilmale* + DP – if not for X

                                    (negative)

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| *ʾilmale* | | CP |
|---|---|---|
| COND.IRR.NEG | | CP |

antecedent of conditional

→ Addition of Expletive negation →

| *ʾilmale* | *lo/la* | CP |
|---|---|---|
| COND.IRR.NEG | EXPLETIVE NEGATION | CP |

**antecedent of conditional**

→ Semantic reanalysis →
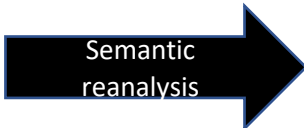
| *ʾilmale* | *lo/la* | CP |
|---|---|---|
| COND.IRR | NEG | CP |

**antecedent of conditional**

*ʾilmale* + CP – had it been the case that...

                                    (positive)

# The syntactic reanalysis

**Existential clause (bare existential)**

| | | |
|---|---|---|
| *ʾilmale* | Ø | DP |
| Cond.irr.neg | exist | DP |
| antecedent of conditional | | |

→ Syntactic reanalysis →

| | |
|---|---|
| *ʾilmale* | DP |
| without | DP |
| **Prepositional Phrase** | |
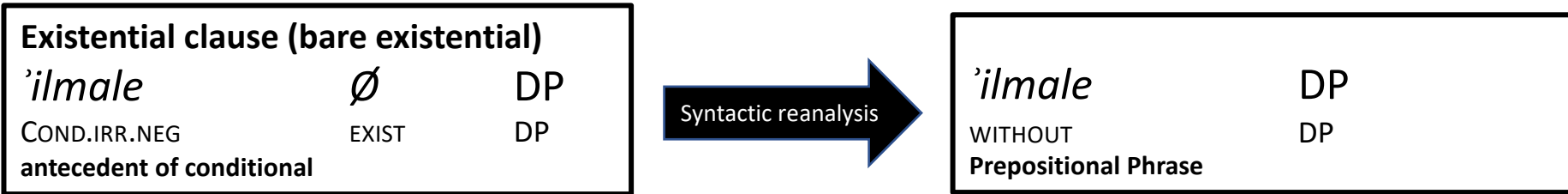
(1) [[there be NP]] = [[NP]] = $\lambda P_{(\tau, t)}[Q_{((\tau, t), ((\tau, t), t))}(N_{(\tau, t)}, P)]$

(2) [[there is no NP]] = $\lambda P_{(\tau, t)}[\textbf{no}_{((\tau, t), ((\tau, t), t))}(N_{(\tau, t)}, P)]$      If there had been no book, David would have failed the test.
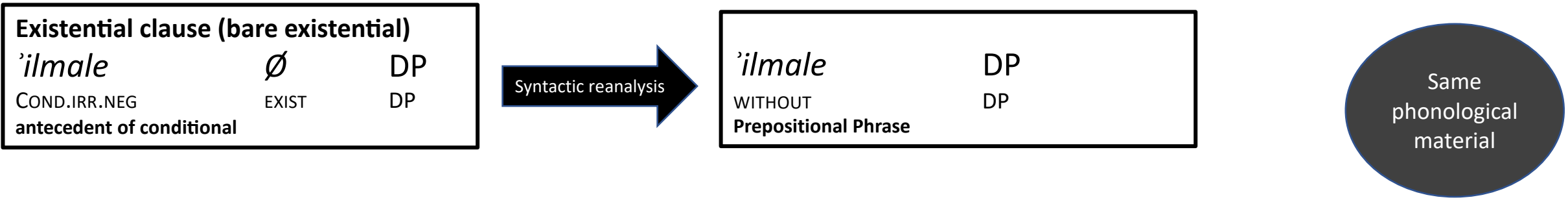
(3) [[without$_c$ NP]]$_{PP}$ = $\lambda P_{(\tau, t)}[\textbf{no}_{((\tau, t), ((\tau, t), t))}(N_{(\tau, t)}, P)]$      Without the book, David would have failed the test.

Following Francez's (2007, 2009), the pivot is the main (second-order) predicate in existential constructions. The predicate in bare existentials is saturated by an implicit argument, namely its scope set, which is a set of entities linked by some contextually-determined relation to this discourse referent.

(1) formally represents the semantics of existential predication, where $\tau$ is any simple type, Q is a relation between sets determined by the determiner of the pivot, and N is a set determined by the common noun in the pivot.

# Three observations

**Existential clause (bare existential)**

*ʼilmale*        Ø        DP

Cond.irr.neg        EXIST        DP

**antecedent of conditional**

Syntactic reanalysis →

*ʼilmale*        DP

WITHOUT        DP

**Prepositional Phrase**

Same phonological material

(2) [[there is no NP]] = $\lambda P_{(\tau, t)}[\textbf{no}_{((\tau, t), ((\tau, t), t))}(N_{(\tau, t)}, P)]$

(3) $[[\text{without}_c \text{ NP}]]_{PP} = \lambda P_{(\tau, t)}[\textbf{no}_{((\tau, t), ((\tau, t), t))}(N_{(\tau, t)}, P)]$
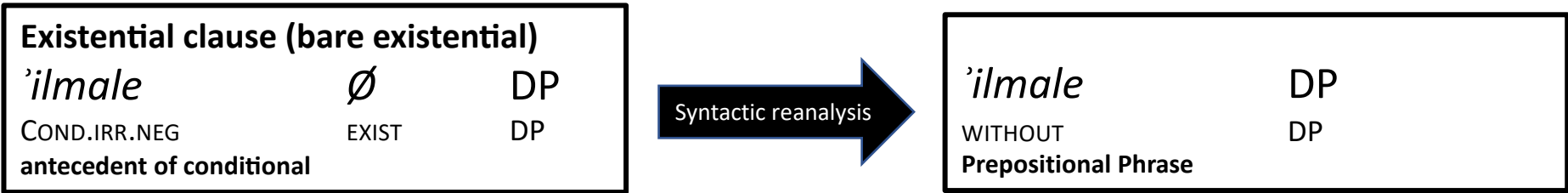
If there had been no book, David would have failed the test.

Without the book, David would have failed the test.

NO CHANGE IN MEANING:

THE EARLY SEMANTIC STABILITY HYPOTHESIS: **The reanalysis of a form F does not change the truth conditions of the proposition P that contains it, whether the reanalysis is on the grammatical level (G) or on the semantic level (M).**
<u>In the case of syntactic reanalysis</u> the truth conditions remain identical or near-identical.
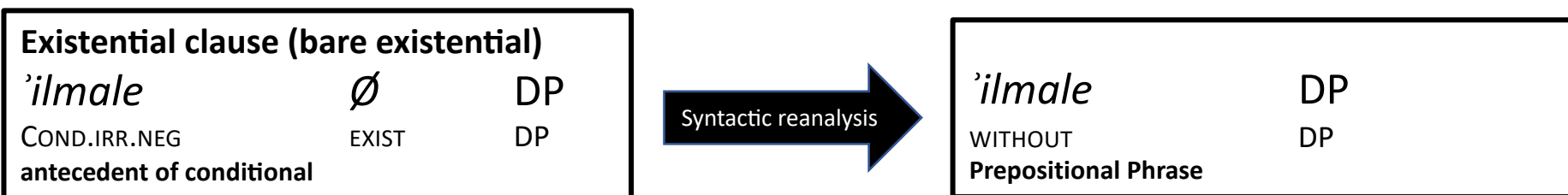
# Three observations

| **Existential clause (bare existential)** | | |
|---|---|---|
| *ʾilmale* | ∅ | DP |
| Cond.irr.neg | exist | DP |
| **antecedent of conditional** | | |

Syntactic reanalysis →

| *ʾilmale* | DP |
|---|---|
| without | DP |
| **Prepositional Phrase** | |

**Structural simplification**

Transforming a complex bi-clausal structure (a conditional sentence with a condition and consequence)

into a uni-clausal structure with a prepositional phrase (cf. Zobel (2008), adjunct expressions that have a "conditional-antecedent-like interpretation")

(Harris & Campbell 1995, Givon 1991, Grossman 2009. Roberts 1993, Roberts & Roussou 2003, Van Gelderen 2010, and Weiß 2021).

Another case of structural simplification with negation (Bar-Asher Siegal & De Clercq 2019)

# Three observations

| Existential clause (bare existential) | | |
|---|---|---|
| *ʾilmale* | Ø | DP |
| Cond.irr.neg | EXIST | DP |
| **antecedent of conditional** | | |

Syntactic reanalysis →

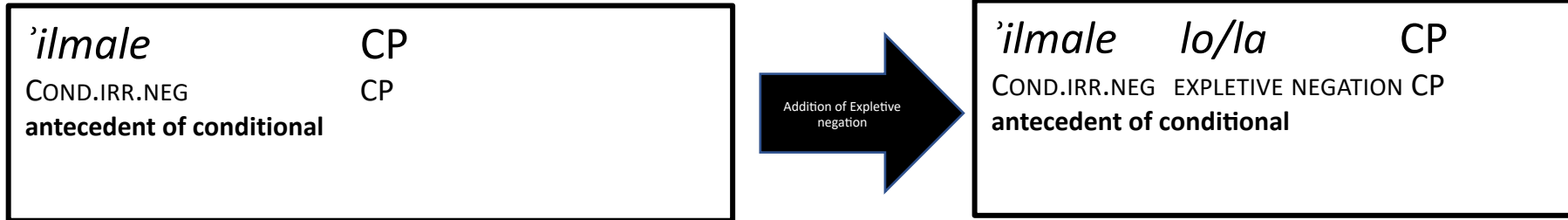| *ʾilmale* | | DP |
|---|---|---|
| WITHOUT | | DP |
| **Prepositional Phrase** | | |

**bi-eventivity**

*ʾilmale* always occurs in a bi-eventive environment - the component of *ʾilmale*+DP does not refer to the same eventuality denoted by the main predication of the sentence.

The reanalysis as a preposition involves the reduction of a bi-clausal structure to a mono-clausal one while retaining bi-eventivity.

=> Similar to causal prepositions, such as *because of*, which are also bi-eventive (Bar-Asher Siegal & Boneh 2020)
=> According to Henderson (2010), Negative Counterfactual Condition markers have a causal component as part of their meaning [bi-eventive as the motivator for causal interpretation)
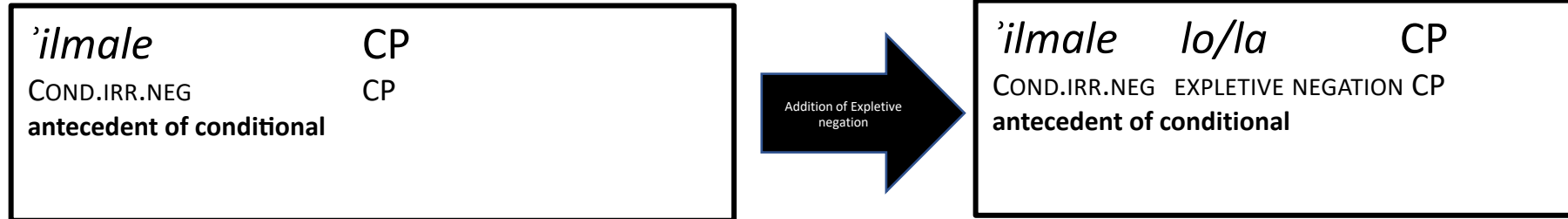
# Expletive Negation

| 'ilmale | | CP |
|---------|--|-----|
| COND.IRR.NEG | | CP |
| **antecedent of conditional** | | |

Addition of Expletive negation →

| 'ilmale | lo/la | CP |
|---------|-------|-----|
| COND.IRR.NEG | EXPLETIVE NEGATION | CP |
| **antecedent of conditional** | | |

a.  *raʾuy*       *haya*         *Ezra*   *še-tinaten*                          *torah*
    suitable    be.PST.3.M.SG  Ezra    REL-give.PASS.FUT.3.F.SG              Torah

   *ˁal=yad-o*  *'ilmale*                    *qidem-o*                              *moše*
   by-3.M.SG   **COND.IRR.NEG**            come.before.PST.3.M.SG-ACC.3.M.SG      Moses

   (Tosefta, Sanhedrin 4:7)

b.  *raʾuy*       *haya*         *Ezra*   *še-tinaten*                          *torah*
    suitable    be.PST.3.M.SG  Ezra    REL-give.PASS.FUT.3.F.SG              Torah

   *le-yisrael* *ˁal=yad-o*  *'ilmale*              *lo*         *qidem-o*                              *moše*
   to-Isreal   by-3.M.SG   **COND.IRR**          **NEG**      come.before.PST.3.M.SG-ACC.3.M.SG      Moses

   (Babylonian Talmud, Sanhedrin 21b)

Both a and b convey: "Ezra was suitable for the Torah to be given (to Israel) by him, **had Moses not** come first".

# Expletive Negation

| | |
|---|---|
| *'ilmale* | CP |
| Cond.irr.neg | CP |
| **antecedent of conditional** | |

Addition of Expletive negation →

| | | |
|---|---|---|
| *'ilmale* | *lo/la* | CP |
| Cond.irr.neg | expletive negation | CP |
| **antecedent of conditional** | | |

## Why does it happens?

## Jin & Koenig (2019, 2020) – based in samples from 700 languages:

> "A speaker intends to say p, but because ¬p is strongly activated by the meaning of a trigger, ¬p is produced.
> Furthermore, because p and ¬p are typically entailed (but relative to distinct sets of worlds or time intervals, see below) by the meaning of EN-triggers, the likelihood of occurrence of EN is higher than for other kinds of inferences."

# Expletive Negation

"A speaker intends to say p, but because ¬p is strongly activated by the meaning of a trigger, ¬p is produced.
Furthermore, because p and ¬p are typically entailed (but relative to distinct sets of worlds or time intervals, see below) by the meaning of EN-triggers, the likelihood of occurrence of EN is higher than for other kinds of inferences."

| *ad* | *še-lo* | *yetapl-u* | | *ba-gorem* | *ha-enoši* |
|---|---|---|---|---|---|
| until | REL-**NEG**$_{EXP}$ | take.care-3.M.PL | in. DEF-factor | | DEF-human |
| *lo* | *ihye* | *šinuy* | | | |
| NEG | be. FUT.3.M.SG | change | | | |

"Until they take care of the human factor, there will be no change".



~q "they didn't take care of the human factor"     q "they take care of the human factor"

t

~p "there will be no change"     p "there will be a change"
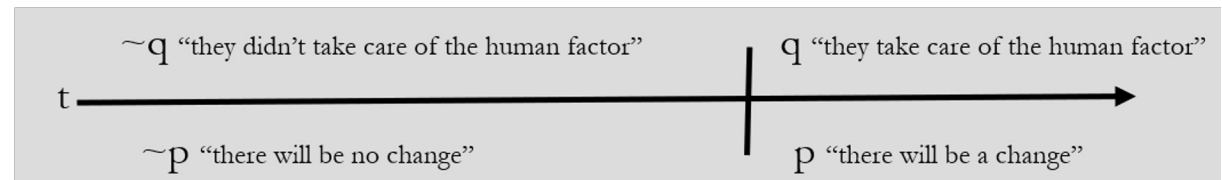
Both p and ~p are entailed, albeit for different parts of the time-line, both are cognitively salient, causing the speaker to utter one instead of the other.

# Expletive Negation

Je ne partirai pas sans que tu ne m'embrasses pour me dire au revoir.
"I won't leave without your (notEXP) kissing me goodbye."

This statement expresses relationship between different sets of worlds, which are most similar to the actual world w in terms of relevant conversational aspects.
It asserts that in the set of worlds in which p holds ("the addressee kisses the speakers"), q holds ("the speaker is leaving"), and that in the set of worlds in which p doesn't hold, q does not hold either:

$$\forall w' \in \cap Sim(w) \ [(\sim p(w') \subseteq \sim q(w')) \ \& \ (p(w') \subseteq q(w'))]$$

# Expletive Negation – back to negative counterfactuals

| ʾilmale | lo | hizziq-o | haya | yafe |
|---------|-----|----------|------|------|
| *ʾilmale* | **NEG<sub>EXP</sub>** | injur.PST.3.SG-ACC.3.M.SG | be.3.M.SG worth | |

| šmone | me-ot | zuz |
|-------|-------|-----|
| eight | hundred-PL | zuz |

"If [the belligerent ox] had not damaged [the other ox], the value [of the latter] would have now stood at eight hundred dinars". (Tosefta, B. Qama 3:5)

"If [the belligerent ox] had not damaged [the other ox], the value [of the latter] would have now stood at eight hundred dinars."

This conditional sentence divides the set of possible worlds into those in which p is true and those in which ~p is true **(p = Y injured X)**, and presupposes that p is true in the actual world.



W W$_1$
W$_5$ W$_{10}$

W$_2$ W$_7$
W$_{14}$

The set of worlds in which p holds [the value of y is less than 800 dinars]

The set of worlds in which p does not hold [the value of y is at least 800 dinars]

One more observation:
in contexts that give rise to expletive negation, it is not only the case that both p and ~p are true in some of the salient worlds. In most cases, the phrase in question involves uttering p, but it is ~p that is true in the actual world.  Consider the following examples:

"I deny that p"        ⇒        "I claim that ~p is true in the actual world"
Expletive negation: "I deny that notEXP p"

"q is true until p"    ⇒        "at the time of the utterance ~p is true in the actual world"
Expletive negation: "q is true until notEXP p"

"q is the case unless p happens" ⇒ "at the time of the utterance ~p is true"
Expletive negation: "q is the case unless notEXP p happens"

"q is the case without p happens" ⇒ "at the time of the utterance ~p is true"
Expletive negation: "q is the case unless notEXP p happens"

A critical criterion for triggering an expletive negation that a clear judgement about the actual world, whether it is part of the set of worlds in which p is true or whether it is part of the set of worlds in which ~p is true, is part of the common ground.

# Expletive Negation – back to negative counterfactuals

The presence of expletive negation in counterfactual conditionals is expected: these conditionals divide the set of possible worlds into two subsets – those in which the antecedent is true and those in which the antecedent is false – and make an assertion regarding the validity of the consequent in each subset.

Why expletive negation is found in conditionals introduced by *ʾilmale*, but not in counterfactual conditionals with ordinary conditional marking?

# Expletive Negation – back to negative counterfactuals

Counterfactual conditionals introduced by an unmarked conditional marker (e.g., *if* in English) differ from conditionals that feature designated NCC markers (such as English *if not for* or Hebrew ʾ*ilmale*).

Counterfactual conditionals generally convey that both the antecedent and the consequent are false in the real world:

> If John were not sick with the measles, he would have joined us today. ⤳ John does have the measles, and he did not join us.

However, this is not a logical (or lexical) entailment, but rather an implicature, and as such it can be cancelled (Anderson 1957, Stalneker 1975):

Speaker A: If John were not sick with the measles, he would have been helping us, not sitting and reading the paper.
Speaker B: If John were not sick with the measles, he would have looked happy and healthy – which is exactly how he
>     looks – so I'm pretty sure he is not sick at all but just lazy!!

But when the NCC is introduced by a dedicated linguistic marker, such as *if it were not for* in English, the falsity of the condition is a presupposition, which cannot be cancelled (Henderson 2010 and Ippolito & Su 2014).

> ?? **If it were not for John being sick with the measles,** he would have looked happy and healthy – which is exactly how he looks – so I'm pretty sure he is not sick at all but just lazy!!

Only conditionals introduced by designated NCC markers (like *ʾilmale*) *necessarily* make a statement about the real world.

This explains why these antecedents constitute a natural environment for expletive negation, in contrast to their counterparts with an ordinary conditional marker and a negative marker (*if not*).

Therefore, we may want to add the presupposition indicating that p holds in the actual world.

$$p(w).\forall w' \in \cap Sim(w) [(\sim p(w') \subseteq \sim q(w')) \& (p(w') \subseteq q(w'))]$$

A critical criterion for triggering an expletive negation that a clear judgement about the actual world, whether it is part of the set of worlds in which p is true or whether it is part of the set of worlds in which ~p is true, is part of the common ground.

# One quick observation

**Originally (antecedent of conditional):**
$\dot{\ }$*ilmale* + CP

EXP negation only in sentential negation

Different types of negations
(Bar-Asher Siegal 2015 and forthcoming)

**Existential clause (bare existential)**

| $\dot{\ }$*ilmale* | Ø | DP |
|---|---|---|
| Cᴏɴᴅ.ɪʀʀ.ɴᴇɢ | ᴇxɪsᴛ | DP |

**antecedent of conditional**

Syntactic reanalysis

| $\dot{\ }$*ilmale* | | DP |
|---|---|---|
| ᴡɪᴛʜᴏᴜᴛ | | DP |

**Prepositional Phrase**

$\dot{\ }$*ilmale* + DP – if not for X
(negative)

| $\dot{\ }$*ilmale* | CP |
|---|---|
| Cᴏɴᴅ.ɪʀʀ.ɴᴇɢ | CP |

**antecedent of conditional**

Addition of Expletive negation

| $\dot{\ }$*ilmale* | *lo/la* | CP |
|---|---|---|
| Cᴏɴᴅ.ɪʀʀ.ɴᴇɢ | ᴇxᴘʟᴇᴛɪᴠᴇ ɴᴇɢᴀᴛɪᴏɴ | CP |

**antecedent of conditional**

Semantic reanalysis

| $\dot{\ }$*ilmale* | *lo/la* | CP |
|---|---|---|
| Cᴏɴᴅ.ɪʀʀ | ɴᴇɢ | CP |

**antecedent of conditional**

$\dot{\ }$*ilmale* + CP – had it been the case that…
(positive)

# The End

Thank you!