Negative dependencies as fragments answers: A direct interpretation approach

Talk 3: Ellipsis and Response Systems: A Usage and Experimental-based approach
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Introduction

Fragment answers

- Fragment answers are non-sentential utterances (NSU) that function as a reply to various types of questions, as seen from the following attested data.

  (1) a. A: What did they want? B: The secret files. (COCA 1993 MOV)
       b. A: Does he sing in English or Russian? B: In English. (COCA 1994 FIC)
       c. A: Does it still hurt? B: Not anymore. (COCA 2012 MOV)

- The fragment answers here are all incomplete sentences but receive sentential interpretations:

  (2) a. They wanted the secret files.
       b. He sings in English.
       c. It does not hurt anymore.

- The deletion-based sentential approach assumes that fragments are derived from full-sentential sources like (2) together with move-and-delete operations (see, among others, Hankamer 1979, Morgan 1989, Merchant 2005, Weir 2014):

  (3)   [$_{FocP}$ the secret files [$_{TP}$ ~~they wanted __~~]].

- The meaning of each fragment is thus derived from the corresponding full sentential structure, observing the usual mapping between syntax and semantics.

- The nonsentential DI (direct interpretation) approach assumes that the complete syntax of a fragment is just the categorial phrase projection of the fragment itself (see, among others, Barton 1990, Ginzburg & Sag 2000, Culicover & Jackendoff 2005, and Jacobson 2016):

  (4) $[_S [_{NP}$ The secret files]].

- Simple syntax but a special mapping mechanism to get the propositional meaning. For example, Culicover & Jackendoff (2005: 265) posits the syntax-semantics rule in which the fragment orphan XP can function as an utterance (U) 'embedded in an indirectly licensed (IL) proposition' and the orphan is semantically linked to an appropriate antecedent provided by the context.

  (5)   Syntax: $[_S$ The secret files$^{ORPH}]^{IL}$
           Semantics: $\lambda_x[\text{want}(i,x)](\text{the.secret.files})$

- Both sentential and nonsentential approaches, however, are challenged by fragment answers interacting with negative dependency expressions.

  (6) a.   A: What have the others done? B: Nothing/*Anything. (COCA 1992 SPOK)

  b.   A: What are you not telling me? B: Nothing/*Anything. (COCA 2001 TV)

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deletion-based sentential approaches

- The deletion-based sentential approaches would derive such fragment answers from clausal sources that are syntactically identical to the antecedent clause:

  (7) a.   The others have done [nothing]. ($\leftarrow$ What have the others done?)
      b.   *The others have done [anything]. ($\leftarrow$ What have the others done?)

  (8) a.   *I am not telling you [nothing]. ($\leftarrow$ What are you not telling me?)
      b.   I am not telling you [anything]. ($\leftarrow$ What are you not telling me?)

- The sentential analyses would generate a legitimate fragment answer from an illegitimate sentential source, requiring an additional mechanism to save or repair an unacceptable source.

A further complication in deletion-based sentential approaches

- N-word as a fragment answer in Romanian (Fălăş & Nicolae 2016):

    (9) A: Cine a venit?
           who has come
           'Who has come?'

      B: Nimeni.
         n-body
         'Nobody has come.'

- With the assumption that the clausal deletion applies under syntactic identity with its antecedent, the putative source of the fragment answer *Nimeni* (n-word) in (9B) would be something like (10a), which is ungrammatical:

    (10) a. *Nimeni a venit.
            n-body has come
            '(int.) Nobody has come.'

       b. Nimeni nu a venit.
          n-body NEG has come
          'Nobody has come.'

DI (direct interpretation) approaches

- If the sentential analysis derives the fragment answer (9B) from (10b), two issues then arise: how to repair the violation of syntactic identity condition for deletion and how to compose a single logical negation from two negative expressions, the so-called NC (negative concord) reading.

    10b   Nimeni nu a   venit.
           n-body NEG has come
           'Nobody has come.'

- Note that the semantic resolution of such a negative fragment also challenges non-sentential DI approaches. To license a negative fragment *Nimeni* like (9), DI approaches could assume that these expressions are inherently negative, but they also require to answer the second question: how the two negative expressions, n-word and sentential negation, yield only one logical negation.

- Languages like Korean also behave like Romanian at first glance. Consider the following Korean example:

  (11) A: Nwu-ka   o-ass-e?
           who-NOM come-PST-QUE
           'Who came?'

       B: Amwu-to.
           anybody-also
           'Nobody came.'

- The expression, *Amwu-to* 'anybody', jus like the Romanian NC word *nimeni* in (10), needs to be licensed by a negation in other contexts:

  (12) Amwu-to   o-ci   *(ahn-ass-ta).
        anybody-also come-CONN not-PST-DECL
        'Nobody came.'

- The syntactic identity condition for ellipsis would require the source sentence of the fragment *Amwu-to* in (11B) to be the ungrammatical sentence in (12a). Korean examples like this again show us that reconstructing a sentential source of a (negative dependency) fragment cannot simply refer to its antecedent clause (positive PQ).

- DI approaches could generate the NC word *amwu-to* 'anybody-also' as an independent fragment that projects into a nonsentential utterance. However, this direction also faces challenges in accounting for what kind of mechanism allows the negative fragment to be mapped into a proper NC reading.

- discuss two different types of negative dependencies, NPI (negative polarity items) and NCI (negative concord items)
- review both move-and-delete sentential approaches and surface-oriented nonsentential approaches for the account of negative dependencies as fragments in Korean.
- suggest that in dealing with negative dependencies as fragment answers in Korean, the sentential approaches meet more challenges than the DI approach suggested here.
- shows that a variety of empirical facts (e.g., conventional implicature) we find in negative dependencies as fragment answers in Korean support a direct generation of these negative fragments with a direct semantic resolution referring to the discourse structure in question.

Two types of negative dependencies: NCI and NPI

- Two different types of negative dependencies: negative concord item (NCI) and negative polarity item (NPI). The former NCI has more than one negative in the given sentence, but it is interpreted as being negated only once:

  (13)   *(Non) ho   visto nessuno.
          NEG   have seen nobody
          'It is not the case that I have seen somebody.'

- The second type of NPI, traditionally taken to be non-negative, is similar to the NCI in that it also needs to be licensed by a negator:

  (14) a.   I have *(not) seen anyone.
       b.   I have (*not) seen nobody.

Differences between the NCI and the NPI items, often noted by the previous literature (see, among others, Watanabe 2004, Sano et al. 2009):

	NPI	NCI
occur in the subject position	no	yes
used as an elliptical answer	No	Yes
modified by expressions like *almost*	No	Yes
appear in non-negative contexts	Yes	No
licensed by a higher clause negation	Yes	No

Table 1: Differences between NPI and NCI

- The NCI in the subject position can occur alone, but the NPI *anyone* needs to have a licensor like a negation.

    (15) a.   Nessuno ha   telefonato.
                    n-body   has called
                    'Nobody called.'
          b.   *Anybody called.

Differences: Fragment answer

- The NCI can occur as a fragment answer while the NPI cannot. Compare English and Spanish examples:

  (16) A: Who did you meet?
        B: Nobody/*Anybody.

  (17) A: ¿Qué comiste?
            what eat-2SG.PST
            'What did you eat?
        B: Nada. 'n-thing'

- The n-word *nada* 'n-thing' can independently occur as a fragment answer, but needs to be licensed by a sentential negation in non-elliptical environments (Weir 2020, Giannakaidou 2006):

  (18) *(No) comí   nada. (Spanish)
        NEG ate.1ST.PST n-thing
        'I ate nothing.'

Korean: NPI or NCI

- In Korean, there are at least three negative sensitive items, *amwu-(N)-to* 'any-N-also', *etten-N-to* 'which-N-also' and *nwukwu-to* 'who-also'. Since these expressions require a sentential negator as their licensor, they seem to be candidates for either strong NPIs or NCIs:

  (19) a. Amwu-to   *(an) manna-ss-ta.
          anybody-also not   meet-PST-DECL
          'I didn't meet anybody.'

      b. Etten-salam-to   *(an) manna-ss-ta.
          which-person-also not   meet-PST-DECL
          'I didn't meet anyone.'

      c. Nwukwu-to *(an) manna-ss-ta.
          who-also not   meet-PST-DECL
          'I didn't meet anybody.'

- However, of these three, only *amwu-N-to* 'any-N-also' is natural as a fragment answer (see also Kim 2013, Chung 2012, Tieu & Kang 2014, Hwang 2020):

  (20) A: Ne nwukwu(-lul) manna-ss-ni?
      you who-ACC meet-PST-QUE
      'Who did you meet?'

  B: Amwu-to/??Etten-salam-to/*Nwukwu-to. 'Nobody.'

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Modification by an adverb

- In English, the NPI *anybody* cannot be modified by *almost* (Giannakidou 2000):
  - (21) a.   *Kim didn't eat almost anything.
    - b.   *Kim didn't meet almost anybody.
- In contrast, *amwu-N-to* or *etten-N-to* seem to occur with *almost*, as seen from the attested examples:
  - (22) a.   keuy   amwu-to/?etten salam-to   o-ci   anh-ass-ta.
    -      almost anybody-also/which person-also come-CONN not-PST-DECL
    -      'Almost nobody came.'
    - b.   keuy   amwu-to/?etten salam-to   an   manna-ss-ta.
    -      almost anybody-also/which person-also not meet-PST-DECL
    -      'I met almost nobody.'
    - c.   keuy   amwu-eykey-to/?ettensalam-eykey-to   kamyemtoy-ci
    -      almost anybody-DAT-also/whichperson-DAT-also infected-CONN
    -      anh-ass-ta.
    -      non-PST-DECL
    -      'Almost nobody was infected.'

In non anti-morphic contexts

- It is well-noted that English NPIs can appear in non-negative contexts like questions and if-conditionals:

  (23) a. Are you guilty of anything? (COCA 1992 SPOK)

  b. If anybody has an idea, please let me know before the evening ends. (COCA 2016 MOV)

- However, in Korean, the corresponding NPIs do not occur in polar or conditional questions:

  (24) Ne *amwu-to/*etten-salam-to/*nwukwu-to   manna-ss-ni?

  you anybody-also/which-person-also/who-also meet-PST-QUE

  'Did you meet anybody?'

Position of the licensor

- The English NPI *anybody* can be licensed by a higher clause negation:

  (25)   a.   I don't think it is fine to talk like that to anybody. (COCA 2010 TV)

  b.   I don't believe that he has any racism. (COCA 2018 SPOK)

- But this is disallowed for the three n-words in Korean:

  (26)   Mimi-nun *amwu-to/*etten-salam-to/*nwukwu-to
           Mimi-TOP anybody-also/which-person-also/who-also

           manna-ss-ta-ko   na-nun sayngkakha-ci anh-nun-ta.
           meet-PST-DECL-COMP I-TOP   think-CONN   not-PRES-DECL

           '(int.) I don't think Mimi met anybody.'

Summary

- The applications of the standard tests to distinguish NCIs and NPIs in Korean show us that Korean *amwu-N-to* 'any-N-also' as well as *etten-N-to* 'which-N-also' behaves more like an NCI while *nwukwu-to* 'who-als' seems to have more restrictive-uses.

	English-NPI	amwu-N-to	etten-N-to	nwukwu-to
used as an elliptical answer	No	Yes	??Yes	No
modified by expressions like *almost*	No	Yes	?Yes	??No
appear in non-negative polar Qs	Yes	No	No	No
licensed by a higher clause negation	Yes	No	No	No

Table 2: NCI and NPI Tests in Korean

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Inherent negative vs. indefinite analyses from a deletion-based perspective

Inherent negative quantifier approaches

- The possibility of having an NCI as a fragment answer has motivated the literature to assume its inherent negativity, allowing a fragment NCI to to be interpreted negatively in the absence of any overt negation marker (see, among others, Zanuttini 1991, Haegeman & Zanuttini 1996, Watanabe 2004, Zeijlstra 2004).

- One immediate question concerns the semantic composition when the NCI occurs with its licensing negation in a nonelliptical declarative environment. See Spanish examples like (23).

  18   *(No) Comí   nada.
       NEG   ate.1ST.PST   n-thing
       'I ate nothing.'

- The typical solution that the analysis of inherent negativity introduces is to adopt a feature copying and checking/agreement mechanism.

An illustrative analysis

- For instance, Watanabe (2004: 564) suggests that Japanese' expression *nani-mo* in (27B) carries a NEG feature that induces negative meaning:

  (27) A: Nani-o mita no?
     What-ACC saw QUE
     'What did (you) see?'

     B: Nani-mo
      what-MO
      'Nothing.'

  (28) Nani-mo [mi-na-katta].
     nani-MO see-not-PST
     'Nothing was seen.'

- According to Watanabe (2004), the negator, bearing a NEG feature, copies another NEG feature from the assumed NCI *nani-mo* via Agree, and then the three NEG features all together render one logical negation.

Possible issues

- One could adopt this kind of feature copying and checking approach to the uses of *amwu-to* 'anybody-also' in Korean.

  (29) A: Nwu-ka   Jina-lul   manna-ss-ni?
                who-NOM Jina-ACC meet-PST-QUE
                'Who met Jina?'

         B: Amwu-to./*Nwukwu-to.
                anyone-also/who-also
                'Nobody met Jina.'

- If adopting ellipsis under syntactic identity, the putative clausal source of both fragments would be ungrammatical:

  (30) a.   *Amwu-to   Jina-lul   manna-ss-ta.
                 anybody-also Jina-ACC meet-PST-DECL
                 '(int.) Nobody met Jina.'

          b.   *Nwukwu-to Jina-lul   manna-ss-ta.
                 who-also   Jina-ACC meet-PST-DECL
                 '(int.) Nobody met Jina.'

- To avoid the issue of deriving the legitimate fragment answer *Amwu-to* from an ungrammatical source like (30a) and further obtaining a negative reading with no negator, one could introduce a process that repairs the source for a Neg-feature checking requirement (due to the inherent negativity).

- An immediate issue then arises from the fact that, as also acknowledged by Watanabe (2004), we cannot freely allow such a repair process or accommodation that assigns the oppositive polarity value to the putative sentential source:

  (31) A: Nwu-ka Mimi-lul   manna-ss-ni?
             you   Mimi-ACC meet-PST-QUE
             'Who met Mimi?
        B: Momo. 'Momo met Mimi.'

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Another issue

- The inherently negative quantifier approach runs into another possible issue when the question is negative:

  (32) A: Nwu-ka   Jina-lul an manna-ss-ni?
              who-NOM Jina-ACC not meet-PST-QUE
              'Who didn't meet Jina?

        B: Amwu-to.
              anybody-also'
              'Nobody met Jina.'

- The putative source of the fragment answer here would be a grammatical one. We then are forced to assign no negative meaning to the sentential negation *an* 'not'

  (33) Amwu-to   Jina-lul an manna-ss-ta.
        anybody-also Jina-ACC not meet-PST-DECL
        '(int.) Nobody met Jina.'

- Departing from such inherent negativity analyses, Giannakaidou (2006) and Zeijlstra (2016) suggest that n-words do not have the semantic force of negative quantifiers but just function as indefinites. The analysis suggests that the n-word is an indefinite noun bearing an 'uninterpretable NEG (uNEG)' feature to be checked under the Agr feature by an interpretable negation.

    (34) a.   Gianni non telefona a nessuno.
              Gianni NEG calls   to n-body
              'Gianni doesn't call anybody.'
         b.   Gianni non$_{[iNEG]}$ telefona a nessuno$_{[uNEG]}$.

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- When the n-word appears as a fragment answer as in the Italian example (35B), the NEG feature is checked not by the negator but by the operator inserted as a last resort operation in the ellipsis environment (Penka & Zeijlstra 2010, Fǎlǎş & Nicolae 2016):

  (35) A: Ha telefonato nessuno?
           has telephone n-body
           'Has anybody called?'
       B: No. Nessuno. 'No. Nobody has called.'

  (36) [Op$_{[iNEG]}$ [Nessuno ~~ha telefonato~~]]].

- A possible advantage of this NEG feature-based checking approach may come from examples where NCI fragments induce ambiguous readings (Romanian data from Fălăş & Nicolae 2016).

  (37) A: Cine nu a   venit?
        who not has come
        'Who has not come?'
      B: Nimeni. 'Nobody' (= Nobody came / Nobody didn't come.)

- The putative source of the fragment is a negative antecedent clause, as given in (38a). This clausal source then does not require the NEG operator to be inserted because of the presence of *nu*. Optionally, the operator can be inserted in elliptical environments as in (38b), which would then yield a double negation reading:

  (38) a. [Nimeni ~~nu a venit~~]]. (=single negation)
      b. [Op$_{[iNEG]}$ [~~Nimeni [nu a venit]~~]]]. (=double negation)

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- Adopting this feature checking system for Korean examples, Tieu & Kang (2014) attempt to account for the difference between *amwu-N-to* 'any-N-also' and *etten-N-to* 'which-N-also' in Korean.

  (39) A: Nwu-ka   Mimi-lul   manna-ss-ni?
              who-NOM Mimi-ACC meet-PST-QUE
              'Who met Mimi?'

       B: Amwu-to/*Etten-salam-to.
              anybody-also/which-person-also
              'Nobody met Mimi.'

  The two fragment answers have the following derivations, according to Tieu & Kang (2014):

  (40) a.   Amwu$_{[i\text{Neg:}\_\_]}$-to [Mimi-ACC meet not$_{[u\text{Neg-val}]}$]
       b.   *Etten$_{[u\text{Neg:}\_\_]}$-to [Mimi-ACC meet not$_{[u\text{Neg-val}]}$]

- not clear what mechanism introduces the sentential negation here even when the antecedent clause is positive.

- The fragment n-word is claimed to introduce the negative head (sentential negation), but we cannot claim that an n-word always introduces a negative head. When the antecedent clause is negative, the analysis would then trigger a double negation reading, contrary to the fact. In addition, as also pointed out by Hwang (2020), this feature-based account runs into another empirical issue with respect to examples like (41):

  (41) A: Khephi-wa cha cwung etten-kes   masi-llay?
            coffee-and tea among which-thing drink-QUE
            'Between coffee and tea, which one do you like?'
        B: Amwu-kes-to/(?)Etten-kes-to. 'Nothing/None of them.'

- Another possible issue seems to arise from ambiguous readings in fragment answers. Consider the following fragment whose antecedent is a negative proposition (see Hwang 2020 also):

  (42) A: Nwu-ka   swukcey   an   nay-ess-ni?
             who-NOM homework not submit-PST-QUE
             'Who hasn't yet submit the homework?'

       B: Amwu-to(-yo).
             anybody-also-DECL
             'Nobody did or Everyone did.'

Inherent negative analyses from a lexicalist perspective

Lexicalist approach

- De Swart & Sag (2002), following the ideas of Zanuttini (2001) and Haegeman & Zanuttini (1996), apply the pair-list readings in multiple wh-questions (e.g., *Who bought what?*) to multiple negative indefinites like (43).

  (43)   Personne (n')aime personne.
         No-one NEG.likes no.one

- This sentence, according to De Swart & Sag (2002), would have the following two readings:

  (44) a.   DN (double negative): no one is such that they love no one.
              $\neg\exists_x\neg\exists_y$ love(x,y)
              'Nobody loves nobody.'

          b.   NC (negative concord): No pair of people is such that one loves the other.
              $\neg\exists_{x,y}$ love(x,y)
              'No one loves anyone.'

Quantifier resumption with other interpretation rules

- In order to capture the two ambiguous readings in (44), the analysis introduces quantifier resumption to (negative) quantifiers, with the following rules:

  (45)   General rules for quantification (De Swart & Sag 2002: 392)
     a.   All quantifiers 'start out' in storage.
     b.   Quantifiers are retrieved from storage at the lexical level, e.g., by verbs other than raising verbs.
     c.   This retrieval is affected by a constraint that relates the STORE values of a verb's arguments and the verb's semantic content.

- Lexical info for the verb *(n')aime* in (51):

  (46)

$$\begin{bmatrix} \text{PHON} & \left\langle \text{n'aime} \right\rangle \\ \text{ARG-ST} \left\langle \left[\text{STORE} \left\{ \text{NO}_x^{Person(x)} \right\} \right], \left[\text{STORE} \left\{ \text{NO}_y^{Person(y)} \right\} \right] \right\rangle \end{bmatrix}$$

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Illustration

- With the assumption that anti-additive quantifiers can undergo resumption (merging negative quantifiers into one), the retrieved quantifiers can interact with other quantifiers or the retrieved set can be the doubleton set containing both anti-additive quantifiers:

(47) a.
$$\begin{bmatrix} \text{PHON} & \left\langle \text{n'aime} \right\rangle \\ \text{ARG-ST} & \left\langle \left[\text{STORE} \left\{ \text{NO}_x^{Person(x)} \right\} \right], \left[\text{STORE} \left\{ \text{NO}_y^{Person(y)} \right\} \right] \right\rangle \\ \text{CONT} & \begin{bmatrix} \text{QUANTS} \left\langle \text{NO}_x^{Person(x)}, \text{NO}_y^{Person(y)} \right\rangle \\ \text{NUCLEUS love(x,y)} \end{bmatrix} \end{bmatrix}$$

b. $\neg \exists_x \neg \exists_y \text{ love(x,y)}$

(48) a.
$$\begin{bmatrix} \text{PHON} & \left\langle \text{n'aime} \right\rangle \\ \text{ARG-ST} & \left\langle \left[\text{STORE} \left\{ \text{NO}_x^{Person(x)} \right\} \right], \left[\text{STORE} \left\{ \text{NO}_y^{Person(y)} \right\} \right] \right\rangle \\ \text{CONT} & \begin{bmatrix} \text{QUANTS} \left\langle \text{NO}_{x,y}^{Person(x),Person(y)} \right\rangle \\ \text{NUCLEUS love(x,y)} \end{bmatrix} \end{bmatrix}$$

b. $\neg \exists_x \exists_y \text{ love(x,y)}$

Possible issues

- It could face challenges when the n-word has an NC relation with a non-negative expression, as pointed out by Zeijlstra (2016):

  (49) Dudo   que vayan   a   encontar nada.
       doubt.1Sg that will.3.PL.SBJ that.PRT find   n-thing
       'I doubt they will find anything.'

- Can this account for the difference between French and NC languages (e.g., Italian) that has no ambiguous readings? (See Korean too)

  (50) a.   Personne mange rien
             nobody   eats   nothing
             'Nobody eats anything' or 'Nobody eats nothing'

       b.   Gianni non telefona a   nessuno
             Gianni NEG call   to nobody
             'Gianni donesn't call anyone. *Gianni doesn't call nobody.

Possible issues

- an n-word serving as a fragment answer: the presence of a lexical head is key to the retrieval, but the fragment answer here is a stand-alone phrase serving as a non-sentential utterance: it includes no lexical head projecting a sentence.

  (51) A: Qui a   été   invite?
            who has been invited
            'Who was invited?'
       B: Zéro personnes/personne 'Zero people/No one'.

- In Romanian examples like (52a), the presence of two n-words with a sentential negation can yield either an NC or a DN reading (Merchant 2005, Fălăş & Nicolae 2016). However, this does not hold in languages like Korean as shown in (52b):

  (52) a. Nimeni nu a citit nimic.
    nobody not has read nothing
    'Nobody has read anything.' or 'Nobody hasn't read anything.'

  b. Amwu-to amwu-kes-to an ilk-ess-ta.
    anyone-also any-thing-also not read-PST-DECL
    'Nobody read anything.'

A Direct Interpretation Approach

DI (direct interpretation) approach

- The DI (direct interpretation) approach obtains a propositional meaning of fragments with no underlying syntactic structures (Ginzburg 2012, Culicover & Jackendoff 2005, Jacobson 2016).

- Within the DI approach, there is no syntactic structure at the ellipsis site and fragments are the sole daughter of an S-node, directly licensed from the following construction motivated from a variety of non-sentential utterances (NSUs) (Ginzburg & Sag 2000, Kim 2015, Kim & Abeillé 2019):

    (53)   Head Fragment Construction:
            Any category can be projected into an NSU (non-sentential utterance)
            as long as it is a focus establishing constituent.

- This construction-based view thus assigns a simple structure to the fragment *Coffee* serving as an answer to a *wh*-question like *What did they want?*, as given in the following:

(54)

```
        S
        |
        NP
       /  \
      /____\
      Coffee
```

- The exact resolution process?

Discourse-based semantic resolution

- Achieved by discourse-based machinery. In particular, the interpretation of a fragment depends on the notion of 'question-under-discussion' (QUD) in the dialogue. Dialogues are described via a Dialogue Game Board (CNXT) where the contextual parameters are anchored and where there is a record of who said what to whom, and what/who they were referring to (see Ginzburg 2012).

- The contextual information has at least the attributes FEC (focus establishing constituent) and MAX-QUD (maximal-question-under-discussion):
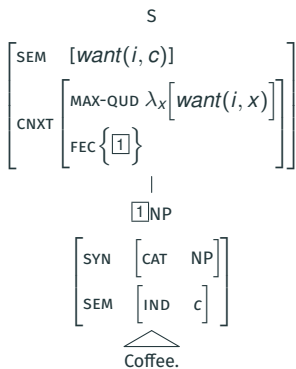
(55)
$$\left[\text{CNXT} \begin{bmatrix} \text{MAX-QUD} \dots \\ \text{FEC} \dots \end{bmatrix} \right]$$

- Uttering the question *What do they want?* in (1a) will activate the following CNXT information:

(56)
$$\begin{bmatrix} \text{FORM} \left\langle \text{What do they want?} \right\rangle \\ \text{SYN S} \\ \text{SEM } \lambda_x \left[want(i, x) \right] \\ \text{CNXT} \begin{bmatrix} \text{MAX-QUD } \lambda_x \left[want(i, x) \right] \\ \text{FEC} \left\{ \begin{bmatrix} \text{SYN} \mid \text{CAT NP} \\ \text{SEM } x \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

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(57)

$$\text{S}$$

$$\begin{bmatrix} \text{SEM} & [want(i, c)] \\ \text{CNXT} & \begin{bmatrix} \text{MAX-QUD} \ \lambda_x\big[want(i, x)\big] \\ \text{FEC}\big\{\boxed{1}\big\} \end{bmatrix} \end{bmatrix}$$

$$|$$

$$\boxed{1}\,\text{NP}$$

$$\begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{CAT} & \text{NP} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{IND} & c \end{bmatrix} \end{bmatrix}$$

Coffee.

- The fragment *Coffee*, functioning as a salient utterance, then provides a value for this variable. This resolution process is thus quite equivalent to the view that the meaning of a question is a function that yields a proposition when applied to the meaning of the answer, as given in the following (Krifka 2001, Jacobson 2016):

    (58) a.   Meaning of the Q & MAX-QUD: $\lambda_x\,[want(i, x)]$

          b.   Meaning of the fragment: c

          c.   The fragment answer applied to the Q: $\lambda_x[want(i, x)](c) =$
    $[want(i, c)]$

Semantic resolution

- Korean negative dependenc items like *amwu-N-to* 'any-N-also' are similar to n-words in that they need to be licensed by a negation, and can occur as a fragment answer:

- For the proper analysis of these negative dependency expressions, I take such expressions as NPIs and, following the direction of Giannakidou (2000); Giannakaidou (2006), take Korean *amwu-N-to* 'any-N-also' expressions to be indefinites with no negative quantificational force of their own:

   (59) a. $[[$*amwu-N-to*$]] = N(x)$
         b. $[[$*amwu kes-to*$]] = thing(x)$
         c. $[[$*amwu salam-to*$]] = person(x)$

- The expression is just a regular indefinite one bound by existential closure under negation, as suggested by Krifka (1995) and Ladusaw (1996).

   (60) $\neg \exists_x [\ldots thing(x) \ldots]$

Pragmatic condition

- We could interpret this kind of closure condition as an entailment condition ensured by the background information evoked from the expression referring to a scalar ordering.

- According to this idea, NPIs are thus licensed either by an overt negation or by pragmatic entailment, which we take as conventional implicature (CI) here. That is, when the syntactic environment provides no overt licensor (e.g., sentence negator), the use of an NPI leads to ungrammaticality. But its use is licensed when the context enables to derive a negative inference (see Linebarger 1987; 1991, Krifka 1995, Chierchia 2006, Giannakaidou 2006, and Toosarvandani 2008).

Conventional implicature

- As noted by Potts (2005) and others, conventional implicature (CI) is part of the agreed meaning of a lexical or phrasal item. For instance, as illustrated in the following, words like *even, too, but, fail* or constructions like nominal appositive have a CI meaning:

  (61) a. Mimi has come too.
       b. Entailment: Mimi has come.
       c. Conventional implicature: Some other person also came.

  (62) a. Lance Armstrong, a Texan, has won the 2002 Tour de France.
       b. Entailment: Lance Armstrong has won the 2002 Tour de France.
       c. Conventional implicature: Lance Armstrong is a Texan.

Lexically/Constructional marking

- In Korean also, CI can be either lexically or phrasally marked. One such an example is the *N-to* 'N-also':

  (63) a.   onul Mimi-to   o-ass-ney
            today Mimi-also come-PST-DECL
            'Mimi too came today.'
       b.   Entails: Mimi came today.
       c.   Conventionally implicates: Some other given person came today.

- N-to 'N-also', as the NP *Kim-to* in (63a), evokes a CI meaning such that there is some other person who came today.

Negative CI

- 'amwu-to' not differs! When the delimiter *-to* combines with an *amwu-N* expression or minimizer, not a positive but a negative CI is evoked:

  (64) a. Amwu-kes-to   mek-ci   anh-ass-ta.
          any-thing-also eat-CONN not-PST-DECL
          '(I) didn't eat anything.'

      b. Hanphwun-to   namkyetwu-ci   anh-ass-ta.
          one.penny-also leave-CONN   not-PST-DECL
          'I didn't save one penny.'

- See when we have another type of delimiter like *-ina* 'even' or *-man* 'only', there is no such a negative CI meaning evoked:

  (65) a. Amwu-kes-ina   mek-ess-ta.
          any-thing-even eat-PST-DECL
          '(lit.) I ate anything (free choice).'

      b. hanphwun-man   namkyetwu-ass-ta.
          one.penny-only leave-PST-DECL
          'I saved only one penny.'

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- The generalization we could make:
    - (66) The construction 'amwu + N/Nominal + to' also has a conventional
      implicature such that there is something 'x' denoted by the N/Nominal
      expression and this 'x' is bound by existential closure under negation.

- The present analysis thus implies that the marker *-to* attached to a phrasal expression plays a key role in evoking a negative CI meaning.

- Examples like the following are thus unacceptable since they have no negative CI meaning or not bound by existential closure under negation:

  (67) a. *I   sangca-ey amwu-kes-to   iss-ta.
              this box-at   any-thing-also exist-DECL
              '(int.) There is nothing in the box.'

      b. *Amwu-to   manna-ss-ta.
              anybody-also meet-PST-DECL
              '(int.) I didn't meet anyone.'

- The NPI *amwu-kes-to* 'any-thing-also' or *amwu-to* 'anyone-also' evokes a negative inference such that there is no individual involved in the situation in question here.

Constructional constraints

- Constructional constraints:

  (68) Amwu-N-to Construction

$$amwu\text{-}N\text{-}to \Rightarrow \begin{bmatrix} \text{FORM } \langle amwu\text{-}N\text{-}to \rangle \\ \text{SYN} \mid \text{CAT NP} \\ \text{SEM} \begin{bmatrix} \text{AT-ISSUE } thing(x) \rightarrow P(x) \\ \text{CI } \neg\exists_x[...thing(x)...] \end{bmatrix} \end{bmatrix}$$

- The expression *amwu-kes-to* is semantically indefinite (as at-issue meaning) but at the same time accompanies a CI meaning such that the individual denoted by the indefinite *amwu-kes-to* is in the scope of negation. Since the expression carries a nonexistence implicature, its licensing condition is not syntactically-controlled but secured by a non-at-issue meaning that does not conflict with the nonexistence entailment.

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Illustration

- The failure of having a negative conventional implicature for *amwu-N-to* 'any-N-also' thus results in pragmatic infelicity: The expression *amwu-N-to* is typically licensed by a sentential negator, but predicates like *silh-ta* 'dislike' in Korean also evoke a negative conventional implicature:

  (69) a. onul amwu-kes-to ha-ki silh-ta.
           today any-thing-also do-CONN dislike-DECL
           'Today I don't like to do anything.'

      b. amwu-to ok-ki cen-ey machi-tolok ha-ca.
          anyone-also come-NMLZ before-at finish-CONN do-SUGG
          'Let's finish this before anyone comes.'

- No negator licensor for the NPI *amwu-kes-to*, but the sentences are legitimate since (69a) implicates that there is nothing that I like to do today while (69b) implies that none has arrived yet. But there is no such an implication in Korean PQs:

  (70) *onul amwu-to o-a?
         today anyone-also come-QUE
         '(lit.) Does anyone come today?'

- One thing to note is that this construction is a phrasal level one, not a lexical-class one, arguing against any lexical NEG feature assignment to *amwu-N-to*. Observe the following:

  (71) a. [Amwu-len umsik-to] mek-ci anh-ass-ta.
          any-MOD food-also eat-CONN not-PST-DECL
          '(I) didn't eat any food.'

      b. [Amwu umsik-ina] cal mek-ess-ta.
          any food-any well eat-PST-DECL
          '(He) could eat any food well.'

Fragment answer

- With this construction-based assignment of the negative CI to *amwu-N-to* 'any-N-also' constructions, let us reconsider the uses of *amwu-N-to* as a fragment answer.

  (72) A: Mwues mek-ess-e?
             what   eat-PST-QUE
             'What did you eat?'

       B1:   Motwu. 'Everything.'

       B2:   Amwu-kes-to. 'Nothing.'
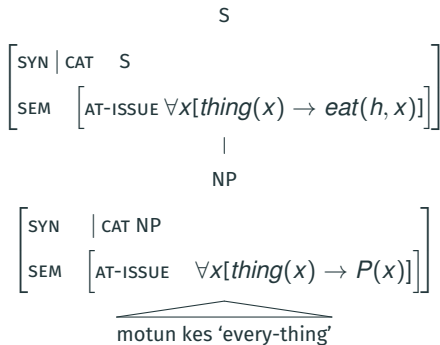
       B3:   *Amwu-kes-to. Sakwa-ka   masiss-ess-e.
             any-thing-also. apple-NOM delicious-PST-DECL
             'Anything. The apple was delicious.'

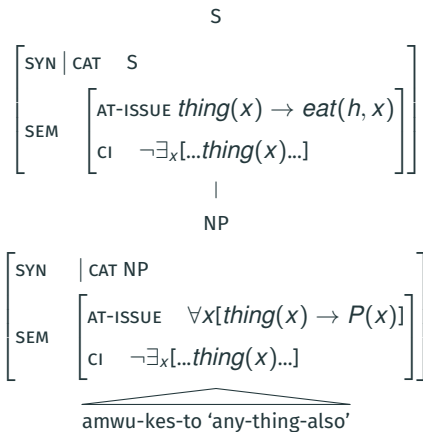- A simple structure, possibly with no CI info evoked:

  (73)

$$S$$

$$\begin{bmatrix} \text{SYN} \mid \text{CAT} & \text{S} \\ \text{SEM} & \left[\text{AT-ISSUE} \ \forall x[thing(x) \rightarrow eat(h,x)] \right] \end{bmatrix}$$

$$\mid$$

$$NP$$

$$\begin{bmatrix} \text{SYN} & \mid \text{CAT NP} \\ \text{SEM} & \left[\text{AT-ISSUE} \quad \forall x[thing(x) \rightarrow P(x)] \right] \end{bmatrix}$$

motun kes 'every-thing'

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negative fragment answer

- A simple structure with a CI evoked from 'amwu' + nominal + 'to':

(74)

$$
\begin{array}{c}
\text{S} \\[4pt]
\begin{bmatrix}
\text{SYN} \mid \text{CAT} \quad \text{S} \\[6pt]
\text{SEM} \quad
\begin{bmatrix}
\text{AT-ISSUE } thing(x) \rightarrow eat(h, x) \\[4pt]
\text{CI} \quad \neg\exists_x[...thing(x)...]
\end{bmatrix}
\end{bmatrix} \\[20pt]
\mid \\[4pt]
\text{NP} \\[4pt]
\begin{bmatrix}
\text{SYN} \quad \mid \text{CAT NP} \\[6pt]
\text{SEM} \quad
\begin{bmatrix}
\text{AT-ISSUE} \quad \forall x[thing(x) \rightarrow P(x)] \\[4pt]
\text{CI} \quad \neg\exists_x[...thing(x)...]
\end{bmatrix}
\end{bmatrix}
\end{array}
$$

amwu-kes-to 'any-thing-also'

- The fragment answer can serve as an answer to the question (*What did you eat?*), and the yielded meaning is such that there is no individual that satisfies as its value in terms of the CI meaning. This meaning resolution can be also represented in the following format:

  (75) a. Meaning of the Q: $\lambda_x[eat(h, x)]$

  b. Meaning of the fragment *amwu-kes-to*: $thing(x) \rightarrow P(x)$

  c. At-issue meaning of the fragment answer: $thing(x) \rightarrow eat(h, x)$

  d. CI meaning of the fragment answer: $\neg\exists_x[...thing(x),...]$

- This analysis sketched here thus implies that as long as the context satisfies the CI meaning such that there is no entity that the hearer ate, the fragment is a legitimate answer.

- This in turn means if the context does not entail the negation of its existence, its use is of the pragmatic infelicity, not observing the conventional implicature. This is why (72B3) is unacceptable.

  (72B3)

  > *Amwu-kes-to. Sakwa-ka masiss-ess-e.
  > any-thing-also. apple-NOM delicious-PST-DECL
  > 'Anything. The apple was delicious.'

- As discussed earlier, we have also seen that the fragment *amwu-N-to* as an answer to a negative question can induce either an NC or a DN reading (see Hwang 2020 for a similar note). Context would choose a preference, as seen from the following:

  (76) A: Nwu-ka   an o-ass-ni?
             who-NOM not come-PST-QUE?
             'Who didn't come?
        B: Amwu-to. 'Nobody came' or 'Everyone came.'

  (77) A: Onul achim   nwu-ka   yangchicil an ha-yess-ni?
             this morning who-NOM toothbrush not do-PST-QUE
             'Who didn't do toothbrush this morning?'
        B: Amwu-to. 'Nobody did.' or 'Everyone did.'

- consider a negative polar question and two possible answers expressed by response particles:

  (78) A: Mimi an o-ass-ni?
          Mimi not come-PST-QUE?
          'Didn't Mimi come?
      B1: Ung. 'yes' (Mimi didn't come.)
      B2: Ani. 'no' (Mimi came.)

- The negative polar question has a negative proposition as its MAX-QUD in a typical situation (following the truth-based answering system), but given a proper context, it can also evoke a positive proposition as its MAX-QUD (following the polarity-based answering system).

  (79) a. Meaning of the NPQ: $\lambda\{\ \}[\neg come(m)]$

     b. MAX-QUD evoked from the NPQ in the truth-based system: $\lambda\{\}[\neg come(m)]$

     c. MAX-QUD evoked from the NPQ in the polarity-based system: $\lambda\{\}[come(m)]$

- As in the negative polar question, the negative *wh*-question can evoke either a negative proposition or a positive proposition as its MAX-QUD. The fragment answer *amwu-to* can then refer to either of these two with respect to its CI meaning:

  (80)   when referring to the negative MAX-QUD:
  - a.   MAX-QUD: $\lambda_x[\neg come(x)]$
  - b.   CI meaning: $\neg\exists_x[person(x) \ \& \ \neg come(x)]$

  (81)   when referring to the positive MAX-QUD:
  - a.   MAX-QUD: $\lambda_x[come(x)]$
  - b.   CI meaning: $\neg\exists_x[person(x) \ \& \ come(x)]$

- Unlike *amwu-N-to*, *etten-N-to* in general does not occur as a fragment answer, but with a proper context with D-linked referents, it becomes quite acceptable as fragment answer. Consider a similar example here:

  (82) A: Ne-nun i mwunce cwung mwues-ul phwul-ci mos-ha-ni?
     you-TOP this question among what-ACC solve-CONN not-do-QUE
     'Among these questions, which one can't you solve?

  B: Amwu kes-to/?etten kes-to. 'any-thing-also/which-thing-also.'

- We can assume that *etten-N-to* carries a CI meaning just like *amwu-N-to* in such a D-linked environment:

(83)
$$\begin{bmatrix} \text{FORM} \left\langle \text{etten mwuncey-to} \right\rangle \\ \text{SYN NP} \\ \text{SEM} \begin{bmatrix} \text{AT-ISSUE } problem(x) \rightarrow P(x) \\ \text{CI } \neg\exists_x[...problem(x)...] \end{bmatrix} \end{bmatrix}$$

- When the context supplies a set of discourse-linked individuals, *etten-N-to* can well evoke this CI meaning, but when the context lacks such discourse-familiar individuals, it would not have such a CI meaning and thus cannot serve as a fragment answer. Such data once again tell us that we cannot rely on a lexical-based feature-assignment system in which such Korean words are predetermined to bear an uninterpretable NEG feature (Tieu & Kang 2014).

Another advantage

- Another advantage of the present analysis can be observed in a sentence with more than one n-word, which we have discussed earlier.
  - (84) a. Amwu-to   amwu mal-to   ha-ci   anh-ass-ta.
          anyone-also any word-also do-CONN not-PST-DECL
          'Nobody said any words.'
    - b. Amwu-to   amwu-kes-to   po-i-ci   anh-ass-ta.
          anyone-also any-thing-also see-PASS-CONN not-PST-DECL
          'Nobody see anything.'
    - c. Amwu-to   amwu-kes-to   amwu-eykey-to   cwu-ci   anh-ass-ta.
          anyone-also any-thing-also anyone-DAT-also give-CONN not-PST-DECL
          'Nobody gave anything to anyone.'
- There are two or even n-words or NPIs here. The previous analyses in which the n-word is taken to be a negative quantifier or bear a NEG feature would have an ambiguous reading here (De Swart & Sag 2002, Tieu & Kang 2014). However, the sentences in (84) are not ambiguous at all: each of these has just one logical negation reading in Korean.

Multiple n-words

- Fragment answers can also have two n-words:
    - (85) A: Nwu-ka   mwusen mal   ha-yss-e?
                who-NOM what   word do-PST-QUE?
                'Who said what? or Did someone say something?'
        - B: Amwu-to   amwu mal-to.
                anyone-also any word-also
                'Nobody said any words.'
- The only possible reading for (85B) is a single negation reading: it has no double negation reading such that nobody said no words.

- The data here all then imply that we can assign neither an inherent negative meaning nor a NEG feature to these n-words, which would result in a double negation reading. The examples rather support the view that the negative meaning comes only from the overt sentential negation. The present analysis, in which the n-word is taken to be an indefinite and accompanies a negative CI, we can expect this single reading. Consider the meanings of (85):

(86) a. Meaning of the Q: $\lambda_x \lambda_y [say(x, y)]$
   b. At-issue meaning of the fragment: $[person(x) \rightarrow P(x)]$ & $[thing(y) \rightarrow P(y)]$
   c. CI meaning of the fragment answer: $\neg[\exists_x \exists_y [...person(x)$ & $thing(y)...]]$

Another advantage

- The present analysis can also offer an explanation for the behavior of adverbs like *acik* 'still/yet'. As noted by the literature and further by Potts (2005), English words like *still* can evoke a CI meaning:

  (87) a. Mimi has still not come.
       b. Entailment: Mimi has not come.
       c. Conventional implicature: Mimi was expected to have come by now.

- Note that the adverb *acik* in Korean, whose meaning is similar to *still*, also evokes a CI meaning.

  (88) a. Mimi-ka   acik tochakha-ci anh-ass-ta.
           Mimi-NOM still arrive-CONN not-PST-DECL
           'Mimi has not arrived yet.'
       b. *Mimi-ka   acik tochakha-yess-ta.
           Mimi-NOM still arrive-PST-DECL

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Properties of the adverb

- *acik* lexically accompanies its negative CI meaning only when it modifies a non-stative verb like *arrive* as in (87). This then would predict the following for its uses as a fragment answer:

  (89) A: Mimi-nun cip-ey   o-ass-ni?

      Mimi-TOP house-at come-PST-QUE

      'Did Mimi come home?'

  B: Acik. 'not.yet' ('She has not come home yet.')

  (90) A:

      Mimi-nun cip-ey   iss-ni?

      Mimi-TOP house-at exist-QUE

      'Is Mimi still at home?'

  B: Acik. 'still' (=She is still at home.)

- Together with these observations, we can assume that the adverb *acik*, similar to *still* in English, is lexically encoded with a CI meaning when it modifies a nonstative VP:

(91)

$$
\begin{bmatrix}
\text{FORM} \left\langle \text{acik} \right\rangle \\[2mm]
\text{SYN}
\begin{bmatrix}
\text{HEAD} \mid \text{POS } adv \\[1mm]
\text{PNE} \left\langle \text{VP}\begin{bmatrix} \text{STATIVE} - \end{bmatrix} \right\rangle
\end{bmatrix} \\[4mm]
\text{SEM}
\begin{bmatrix}
\text{AT-ISSUE } still(x) \\[1mm]
\text{CI } \neg\exists_x[...still(x)...]
\end{bmatrix}
\end{bmatrix}
$$

Conclusion

Conclusion

- fragment answers with negative dependency expressions like NPI and NCI challenge both derivational and non-derivational analyses.
- discussed the behavior of three negative dependent words *amwu-N-to* 'any-N-also', *etten-N-to* 'which-N-also', and *mwusen-to* 'what-also' in Korean, all of which need to be licensed by an overt negator in general. The key difference among the three lies in the distribution possibilities as fragment answers.
- The present analysis suggests a more viable direction is to license such expressions in fragment answer environments in the system that allows the tight interplay between the lexical semantics and the discourse structure involving the conventional implicature (background information) linked to the negative expressions.

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