Bipolar Items and Attitude Predicates

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Abstract

- Bipolar items (BPI) demonstrate the combined features of NPI and PPI.
- Both overt and covert factive emotives license BPIs by selecting C with bipolar feature.
- BPIs have uninterpretable bipolar feature that matches weak or medium negation but cannot be checked by strong negative.
Dutch *ooit* ‘ever’, Serbo-Croatian *i*-series ‘and/even’ and Hungarian *is*-series ‘and/even’ are
- antilicensed by clausemate negation
- licensed by non-monotonic negative (and positive, for Serbo-Croatian) emotives.

Japanese sentence focus *mo* ‘also/even,’ Korean wide-scope *to* ‘also/even’ and Chinese *ye* ‘also’ in simple sentences are BPIs licensed by covert emotives.
NPI and PPI

NPIs are licensed in the scope of downward entailing (DE) environments (Fauconnier 1975a, Fauconnier 1975b, Ladusaw 1979)
E.g., *any* is in the scope of DE operator *no fisherman*:

(1) a. No fisherman caught any fish. \(\models\) No fisherman caught any sillaginoid.
   b. No fisherman caught any sillaginoid. \(\not\models\) No fisherman caught any fish.
Strong negative not licenses the strong NPI budge an inch:

(2) a. John did not budge an inch.
   b. *John budged an inch.

PPIs like something are anti-licensed in negative environments (Baker 1970).

(3) a. John said something.
   b. *John did not say something.
Three types of negative contexts (Zwarts 1996, 1997):

1. **Strong**: antimorphic
   (De Morgan negation which is the combination of anti-additivity and anti-multiplicativity)

2. **Medium**: anti-additive or antimultiplicative

3. **Weak**: monotone decreasing
(4) Monotone decreasingness:
Let $B$ a Boolean algebra. A quantifier $Q$ on $B$ is said to be monotone decreasing iff for each two elements $X$ and $Y$ of the algebra $B$: if $X \in Q$ and $Y \subseteq X$, then $Y \in Q$.

(5) Anti-additivity:
Let $B$ and $B^*$ be two Boolean algebras. A function $f$ from $B$ to $B^*$ is said to be andi-additive iff for each two elements $X$ and $Y$ of the algebra $B$: $f(X \cup Y) = f(X) \cap f(Y)$

(6) Anti-multiplicativity:
Let $B$ and $B^*$ be two Boolean algebras. A function $f$ from $B$ to $B^*$ is said to be andimultiplicative iff for each two elements $X$ and $Y$ of the algebra $B$: $f(X \cap Y) = f(X) \cup f(Y)$

(Zwarts 1996)
BPI (Bipolar Items, van der Wouden 1997)

Dutch *ooit* ‘ever’, Serbo-Croatian *i*-series ‘also/even’ and the Hungarian counterpart demonstrate:

1. NPI-hood by being licensed in medium and weak negative environments
Dutch ooit ‘ever’

Dutch ooit ‘ever’ needs weak or medium negativity

(7) a. Geen van de kinderen gaat ooit bij oma op bezoek. none of the children goes ever with granny on visit ‘None of the children ever visits granny’ (Anti-additive)

b. Weinig kinderen gaan ooit bij oma op bezoek. few children go ever with granny on visit ‘Few children ever visit granny’ (Monotone decreasing)
Ooit is anti-licensed by clausalmate strong negation but licensed by extra-clausal negation.

one of the children goes not ever with granny on visit

(Antimorphic, van der Wouden 1997: 132-133)

b. Het is niet zo dat een van de kinderen ooit bij oma op bezoek gaat.
'It is not the case that one of the children ever visits granny.'

(van der Wouden 1997)
Hoeksema (1998) discusses the current loss of polarity sensitivity of *ooit*. According to his observation, *ooit* has become ambiguous between the NPI *ooit* and the non-sensitive *ooit*, which is also an existential temporal adverb, nowadays. The latter appears in non-negative contexts.

(9) a. 
Jan heeft het *ooit* geweten.
Jan has it once known
‘Jan once knew it’

b. 
Hier stond *ooit* een molen.
here stood once a mill
‘A mill stood here, once’
Hoeksema also pointed out, at Swarthmore Workshop on Negation and Polarity in 2006, that the presence of another lexical item *nooit* blocks *ooit* from strong negative context. However, van der Wouden (1997) argues that *ooit* also dislikes antimorphic operators other than *niet*:

(10) a. *Een van de kinderen gaat allesbehalve ooit bij oma op bezoek.
    ‘One of the children goes anything-but ever with granny on visit.’

b. *Een van de kinderen gaat allerminst ooit bij oma op bezoek.
    ‘One of the children goes not at all ever with granny on visit.’
Hungarian *is* ‘and/even’

Similarly, Hungarian *is*-series and Serbo-Croatian *i*-NPIs are
- ungrammatical with clausemate antimorphic negation
- grammatical in monotone decreasing contexts or with extra-clausal negation

(11) a.

\[\text{*Nem értettél valamit is.} \]
not understood-you something also/even
‘You didn’t understand anything’

( Antimorphic )

b.

\[\text{Kevés ember értett valamit is.} \]
Few people understood something also/even
‘Few people understood anything’

( Monotone decreasing )
(c) a.

\textbf{Nem} hiszem, hogy valamit \textit{is} értettél.
\textit{Not think-I that something also/even understood-you ‘I don’t think that you understood anything’}

(Extra-clausal antimorphic, Szabolcsi p.c.)

Thus, BPIs
- dislike clausemate negation
- demand either:
  i) weak or medium negative contexts
  ii) extra-clausal negation.
Nonmonotonic Emotives as BPI Licensers

Licensers of Bipolar Items (BPIs) are not limited to extra-clause negation or clausemate medium or weak negation. Negative emotives license BPIs:

(12) a. 
   Ik betreur (het) dat ik dat *ooit* gedaen heb.  
   I regret it that I that ever done have  
   ‘I regret of what I have ever done’  
   (Dutch, den Dikken p.c.)

b. 
   Sajnálom, hogy valamit *is* adtam neki. 
   regret-I that something-ACC also/even gave-I to-him  
   ‘I regret that I gave him anything’  
   (Hungarian, Szabolcsi p.c.)
In Serbo-Croatian, not only negative but also positive attitude predicates license BPIs:

(13) a. *Sumnja*-m da Milan voli *i(t)ko-ga/*ni(t)ko-ga.
doubt-*1SG* that Milan loves anyone-*ACC* / no-one-*ACC*
‘I doubt that Milan loves anyone’

(Progovac 1994: 64)

b. *Sretan* sam da Milan *i(t)ko-ga* voli.
happy be-*1SG* that Milan anyone-*ACC* loves
‘I am happy that Milan loves anyone’
Monotonicity of Emotives

The monotonicity of emotives such as *doubt*, *be happy*, *be surprised* and *regret* has been problematic to Fauconnier-Ladusaw’s DE analysis of NPI licensing contexts, because these attitude predicates are not straightforward DE (Asher 1987, Heim 1992, von Fintel 1999).

(14) I am happy that Mary bought a car. ⇔
    I am happy that Mary bought a Honda.
Without additional device such as Weakened DE (Asher 1987) or Strawson DEness (von Fintel 1999), attitude predicates are nonmonotonic. Both Weakened DE and Strawson-Entailment adds additional assumption that the complement clauses of conclusion is also believed:

(15) I am happy that Mary bought a car.
    Mary bought a Honda.

∴ I am happy that Mary bought a Honda.
BPI Licensing Contexts

- BPIs
  - dislike clausemate negation
  - demand either:
    i) weak or medium negative contexts
    ii) extra-clausal negation
    iii) superordinate emotives. While Dutch and Hungarian BPIs are only licensed by negative emotives, Serbo-Croatian BPIs can be licensed by positive emotives.

- BPI licensing contexts range from nonmonotonic to monotone decreasing and anti-additive environments.
Implicit Nonmonotonic Emotives License BPIs

- Not only overt emotives such as \textit{regret} or \textit{be sorry} but covert emotives license BPIs.
- Japanese \textit{mo} ‘also/even,’ Korean \textit{to} ‘also/even’ and Mandarin \textit{ye} ‘also’ behave as BPIs.
- As BPIs, they are anti-licensed by clausemate negation, while licensed in monotone decreasing contexts.
- Crucially, these BPIs can be licensed by implicit speaker attitudes.
Sentence Focus Mo ‘also/even’ in Japanese

- **Additive mo:**

  \[(16)\]
  \[
  \text{John-ga } \text{ki-te, Mary-} \text{mo } \text{ki-ta} \\
  \text{John-NOM come-and Mary-also come-PAST} \\
  \text{‘John came and Mary also came’}
  \]

- **‘Even’ mo:** John is the least likely person to come

  \[(17)\]
  \[
  \text{(Surprisingly,)} \text{ JOHN-mo ki-ta.} \\
  \text{John-even come-PAST} \\
  \text{‘Even John came’}
  \]
NPI *mo*:

> When *mo* attaches to *wh*-words, it forms *any*-type strong NPI (Kato 1985, Nam 1994, Kato 2000) or negative concord items (Watanabe 2004).\(^1\)

(18)

Dare-mo ko-nai.

who-also come-NEG

‘Nobody comes.’

---

\(^1\)Japanese grammarians have considered *mo* polysemous (Sadanobu 1997).
Propositional attitude *mo*
- not discussed much so far
- Numata (2000): takes a wide scope over a proposition and triggers presupposed implicit events.
- I characterize this *mo* to be *out of the blue mo* or *discourse initial mo* which can appear discourse initially and does not require any discourse antecedent.
- This *mo*, instead, requires certain speaker attitudes.
(19) a. Yo-mo hukete-ki-ta. Mo neru-to shi-yo.²
night-also late-become-PAST already sleep-COMP do-will
'(It grew late (at night). It’s time to go to bed’

cyclamen-also wither-come-PAST now spring-be
'The cyclamens have withered. It is already spring’

c. Ko-no saihu-mo huruku-nat-ta.
this-GEN wallet-also old-become-PAST
'This wallet has become old’

d. Mari-mo kashiko-i.
Mari-also smart-be
'Mary is smart indeed’
e. Soto-**mo** hiete-ki-ta.
Outside-mo cold-ASP-PAST
‘It has become cold outside’

f. Tabi-**mo** owari-ni chikazuite-ki-ta.
trip-mo end-to approach-ASP-PAST
‘The trip is nearing the end’

g. Omae-**mo** aho-ya-na.
you-mo silly-be-EXC
‘You are silly, I should say’
Sentence Focus and Discourse-Initial

The above *mo* can appear discourse initially in contrast with other kinds of *mo*. This *mo* has *sentence-focus structures* in the sense of Lambrecht (1994).

(20) What happened?
    My CAR broke down.

The whole proposition of the reply ‘my car broke down’ is new information and thus focused. There is no pragmatic presupposition evoked by the utterance ‘My car broke down’ according to Lambrecht.
(21) a. My CAR broke down.
   b. Presupposition: _
   c. Assertion: ‘speaker’s car broke down’
   d. Focus domain: ‘speaker’s car broke down’
   e. Focus: S

(Lambrecht 1994:233)
- PPI-hood: anti-licensed by clausalmate negation while extra-clausal negation is acceptable

(22) a. *Yo-mo sue-ja-nai.
   world-mo end-be-NEG
   ‘This is not the end of the world’

   world-mo end-be-COMP-say-fact-TOP-NEG
   ‘It is not true that this is the end of the world’
(23) a.

*Tabi-mo owari-ni chikazuite-ko-nai.
trip-also end-DAT approach-ASP-NEG
‘The trip does not near its end’

b.

Tabi-mo owari-ni chikazuite-ki-ta wake demo-nai.
trip-also end-DAT approach-ASP-PAST reason be-NEG
‘It is not that the trip is nearing its end’

- NPI-hood: licensed in the scope of monotone decreasing numeral, \textit{at most n} as in (24):

(24)

\textbf{Seizei 5-nin-no gakusei-mo tsukare-ta.}
at most 5-CL-GEN student-also tired-PAST
‘At most five students became tired’
- Nonmonotonic emotives license Japanese BPI similar to Dutch, Serbo-Croatian and Hungarian BPI

(25) a. Yo-**mo** hukete-ki-te **zannen-da.**
   night-also late-become-PAST.and regretful-be
   ‘I am sorry that it grew late (at night)’

b. Shikuramen-**mo** karete-ki-te **kanashii.**
   cyclamen-also wither-come-PAST.and sad
   ‘I am sad the cyclamens have withered’
Simple declarative sentences: speaker’s negative/positive sentimental emotion is indispensable

(26) a. (Zannenna-koto-ni) yo-mo hukete-ki-ta.
   regretful-fact-GOAL night-also late-become-PAST
   Mo neru-to shi-yo.³
   already sleep-COMP do-will
   ‘(I am sorry) it grew late (at night). It’s time to go to bed’

b.
   (Shimijimi-to) Ko-no saihu-mo huruku-nat-ta.
   heartily-COMP this-GEN wallet-also old-become-PAST
   (Heartily) ‘This wallet has become old’

c.
   (Ureshii-koto-ni) haru-mo takenawa-ni nari-mashi-ta.
   (happy-fact-GOAL) spring-also peak-GOAL become-HON-PAST
   ‘(I’m glad that) the spring has reached its peak’
BPI licensing environments in Japanese:
i) downward entailing scope
ii) under extra-clausal antimorphic negation
iii) under extra-clausal nonmonotonic emotives
iv) covert superordinate emotives: peculiar to Japanese as well as to Korean and Chinese BPIs
Korean *to* ‘also/even’

- The sentence focus *to* ‘also/even’ is triggered by implicit emotions such as *be sad, regret* and so forth.
- Clausemate negation anti-licenses *to* ‘also/even.’

(27) a.

\[
\text{Pom-}to \quad \text{wat-ta.}
\]

\[
\text{spring-also come-PAST}
\]

‘Spring came’ (That’s why I’m so sad)

b.

\[
\#\text{Pom-}to \quad \text{ochi anat-ta.}
\]

\[
\text{spring-also come NEG-PAST}
\]

‘Spring did not come’ (That’s why I’m so sad)
Chinese ｙˇ‘also’

- Sentence focus ｙˇ‘also’ in Mandarin Chinese is the BPI.
- ｙˇ‘also’ is licensed by speaker feelings as in (28a) and clausemate negation interferes with BPI licensing (28b).

(28) a. 
Qiūtiān ｙˇlái-le.
fall also come-PERF
(In view of the foregoing events) ‘Fall came’

b. 
#Qiūtiān ｙˇbù lái-le.
fell also NEG come-PERF
‘Fall has not come’

(No clausemate negation with wide scope reading ｙˇ)

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5I owe most of the following examples to Chih-hsiang Shu.
Clausemate negation does not interfere with yě ‘also’ with its primary meaning also.

(29)
Líng Líng bù lái-le. Shū yě bù lái-le.
Líng Líng NEG come-PERF Shū also NEG come-PERF
‘Ling Ling did not come. Shu did not come, either’

(Ordinary ‘also’)

Monotone decreasing operator at most

(30)
Zhängsăn z̀uīdūo yě zhì néng hē sān bēi jiǔ.
Zhängsăn at most also only can drink three glass liquor
‘Zhangsan can drink at most three glasses of liquor (it’s a pity).’

(Monotone decreasing)
Overt nonmonotonic emotives

(31) a.  
\[ \text{Kěqì qiūtīan yě líkāi-le.} \]
  \[
  \text{sorry fall also leave-PERF}
  \]
  \[
  \text{‘I’m sorry that fall is gone’}
  \]

b.  
\[ \text{Xìnhǎo qiūtīan yě líkāi-le.} \]
  \[
  \text{glad fall also leave-PERF}
  \]
  \[
  \text{‘I’m glad that fall is gone’}
  \]

Licensors of Chinese BPIs:
- monotone decreasing
- extraclausal nonmonotonic overt/covert emotives
BPI Licensing Contexts

(32) a. [MD...BPI...]
b. [AA...BPI...] (Dutch)
c. $\text{NEG}_{\text{antimorphic}}[CP...BPI...]$
d. $*\text{NEG}_{\text{antimorphic}}...BPI...]$

(33) a. $\text{PRED}_{\text{emotive}}[CP...BPI...]$
b. $\pm (\text{PRED}_{\text{emotive}})[CP...BPI...]$ (Japanese, Korean, Chinese)
c. $\pm \text{PRED}_{\text{emotive}}[CP...BPI...]$ (Serbo-Croatian, Japanese, Korean, Chinese)
d. $-\text{PRED}_{\text{emotive}}[CP...BPI...]$ (Dutch, Hungarian)

(MD: monotone decreasing, AA: anti-additive, PRED: predicate, $+: \text{positive, } -: \text{negative, } ( \text{): implicit}$)
Bernardi 2002: Assigning Types by Inclusion Relations

(34) a. inclusion relation:
   \[ \text{AM} \subseteq \text{AA} \subseteq \text{DM} \]
   \[ \text{WNPI} \subseteq \text{MNPI} \subseteq \text{SNPI} \]

b. derivability relation:
   \[ S'1 \rightarrow S'2 \rightarrow S'3 \]

c. lexicon:
   WNPI: \( q(np; S'1, S'1) \) \textit{hoeven} ‘need’
   DM: \( q(np; S'1, S2) \), \textit{weinig} ‘few’;
   MNPI: \( q(np; S'2, S'2) \), \textit{ook maar iets} ‘anything’
   AA: \( q(np; S'2, S2) \), \textit{niemand} ‘nobody’
   SNPI: \( np \setminus S'3 \), \textit{is mals} ‘is tender’
   AM: \( (np \setminus S2)/(np \setminus s3) \), \textit{niet} ‘not’
BPI Licensing Relation

(35) **BPI Licensing Relations:**
- BPI/extra-clausal nonmonotonic emotives
- BPI/extra-clausal strong negation
- BPI/weak negation
- BPI/medium negation
- *BPI/strong negation

(\/: licensing relation)
BPI Feature

(36) BPI: \([wP \cap wN \cap mN]\)

- nonmonotonic emotives: \([wP \cap wN \cap mN]\)
- weak negation: \([wN]\)
- medium negation: \([wN \cap mN]\)
- strong negation: \([wN \cap mN \cap sN]\)

\((wN: \text{weak negative}, \text{mN: medium negative}, \text{sN: strong negative}, \text{wP: weak positive})\)
BPI Feature Checking

- BPI has \([u \wedge wP \wedge wN \wedge mN]\) feature \(^6\)
- checked by weak negation \([wN]\) or medium negation \([wN \wedge mN]\)
- not checked by strong negative \([wN \wedge mN \wedge sN]\)
- checked by \(C[wN \wedge mN \wedge sN]\) selected by superordinate negative or \(C[wP \wedge wN \wedge mN]\) selected by emotives

\(^6\)cf. Carpenter (1992)
Laca 1994: Negative Complementizers

*deny*, *doubt* selects C with [+neg]

(37) a. The witnesses denied that anybody left the room before dinner.
   b. *The witnesses denied anything.

(38) a. $[TP\ T'[T[VP\ deny[uNeg]\ CP[C[Neg]\ that\ TP\ anybody...]]]]$
   b. $[TP\ The\ witnesses\ denied\ anything]$

→ Emotives selects C with bipolar feature
BPI Licensing by Implicit Attitude Predicates

\[
\text{MODAL} \left[ \begin{array}{c} \text{uwPOS} \\ \text{wNEG} \\ \text{mNEG} \end{array} \right] >
\]

\[
\begin{array}{c}
\text{MODAL} \left[ \begin{array}{c} \text{uwPOS} \\ \text{wNEG} \\ \text{mNEG} \end{array} \right] \\
\text{C} \left[ \begin{array}{c} \text{wPOS} \\ \text{wNEG} \\ \text{mNEG} \end{array} \right] \\
\text{TP} \\
\text{FocP} \\
\text{NP} \\
\text{yo 'night'} \\
\text{mo} \left[ \begin{array}{c} \text{uwPOS} \\ \text{wNEG} \\ \text{mNEG} \end{array} \right] \\
\text{Foc} \\
\text{VP} \\
\text{huke 'grow'} \\
\text{T} \\
\text{ta} \\
\end{array}
\]

\[
\text{CP}
\]

\[
\text{T'}
\]
BPI Licensing by Superordinate Negation

\[
\text{NEG}_{[u_w POS \sqcap w \text{NEG} \sqcap m \text{NEG}]} >
\]

\[
\text{CP}
\]

\[
\text{TP}
\]

\[
\text{C}_{[w \text{POS} \sqcap w \text{NEG} \sqcap m \text{NEG}]}
\]

\[
\text{FocP}
\]

\[
\text{NP}
\]

\[
yo 'night'
\]

\[
\text{Foc}
\]

\[
\text{mo}_{[u_w POS \sqcap w \text{NEG} \sqcap m \text{NEG}]}
\]

\[
\text{VP}
\]

\[
< yo >
\]

\[
huke 'grow'
\]

\[
ta
\]
NPI Rescues BPI

The insertion of the NPI rescues BPIs in otherwise uncomfortable antimorphic environment:

(39)

Ko-no *saihu-mo *#(zenzen/amari) tsukawa-nakat-ta.

this-GEN wallet-also at all/much use-NEG-PAST

‘I have not used this wallet at all/much’

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7I thank Heejeong Ko for pointing this out to me.
Why Do We Use BPIs?

- BPIs do not necessarily call for negative implicatures since positive emotives can license them.
- NPI is used for the strengthening or domain widening effect (Jespersen 1917, Kadmon and Landman 1993).
- Speaker attitude is the primary motivation for BPI licensing in Japanese, Korean and Chinese.
Conclusion

- BPIs share the features of both NPI and PPI
- BPI feature is checked by anti-additive or monotone decreasing operators but remains unchecked with clausal mate strong negation
- Explicit/implicit nonmonotonic factive emotives and superordinate negation select C with bipolar features which license BPI