Shifty asymmetries: universals and variation in shifty indexicality

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Indexicality and indexical shift

In unembedded contexts, the reference of indexical elements (*I*, *you*, *tomorrow*, *here*) is dependent on the utterance event.

(1) Anna: I’m in Washington.
   Berta: I’m not in Washington.
Indexicality and indexical shift

In unembedded contexts, the reference of indexical elements (*I, you, tomorrow, here*) is dependent on the utterance event.

1. Anna: I’m in Washington.
   Berta: I’m not in Washington.

In English, this pattern extends to indexicals embedded under speech and attitude verbs.

2. Anna: Casey thinks I’m in Washington.
   Berta: Casey thinks I’m not in Washington.
Indexicality and indexical shift

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(1) Anna: I’m in Washington.
   Berta: I’m not in Washington.

In English, this pattern extends to indexicals embedded under speech and attitude verbs.

(2) Anna: Casey thinks I’m in Washington.
   Berta: Casey thinks I’m not in Washington.

Not all languages are like English in this respect.

Indexical shift

The phenomenon of embedded indexicals depending for their reference on an attitude event, rather than the utterance event
Indexicality and indexical shift

Indexical shift

The phenomenon of embedded indexicals depending for their reference on an attitude event, rather than the utterance event

(3) Isii-ne Angel hi-i-caa-qa
    who-ACC Angel 3SUBJ-say-IMPERF-REC.PAST
    [ cew’cew’inis-ki pro ’e-muu-ce-∅ ]
    [ phone-with 1SG 1SUBJ/3OBJ-call-IMPERF-PRES ]

a. Who did Angel say I was calling?
b. Who did Angel say she was calling?

Reading (b) is the shifty reading:
The embedded 1st person indexical draws its reference from the speaking event involving Angel, not from the overall utterance
Languages reported to show indexical shift

- Aghem (Bantu; Hyman 1979)
- Amharic (Semitic; Leslau 1995, Schlenker 1999)
- Japanese (Sudo 2012)
- Korean (Park 2014)
- Malayalam (Dravidian; Anand 2006)
- Matses (Panoan; Munro et al. 2012)
- Mishar Tatar (Turkic; Podobraev 2014)
- Navajo (Athabaskan; Speas 2000)
- Nez Perce (Penutian; Deal 2014)
- Slave (Athabaskan; Rice 1986)
- Tamil (Dravidian; Sundaresan 2011)
- Tsez (Nakh-Dagestanian; Polinsky 2015)
- Turkish (Gültekin Şener and Şener 2011)
- Uyghur (Turkic; Sudo 2012)

(Plus a long list of sign languages (Zucchi 2004, Quer 2005), though cf. Davidson 2015)
Languages reported to show indexical shift

- Aghem (Bantu)
- Amharic (Semitic)
- Matses (Panoan)
- Nez Perce (Penutian)
- Tsez (Nakh-Dagestanian)
- Zazaki (Indo-Iranian)

- Athabaskan: Navajo, Slave
- Dravidian: Malayalam, Tamil
- Turkic: Turkish, Mishar Tatar, Uyghur
- Japanese/Korean
- Sign languages
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Goal of this talk

Outline an account of indexical shift that accounts for both commonalities and variation across the set of languages instantiating the phenomenon
Outline

1. Dimensions of variation
2. Basic composition
3. Accounting for variation
4. Conclusions
Variation in indexical shift

Three major dimensions:

1. Which verbs are involved in shifting
2. Which indexicals shift (with which verbs)
3. Which indexicals are interpreted in an inherently perspectival way (de se)
Variation in indexical shift

1. Which verbs are involved in shifting
   - Aghem, Amharic, Zazaki: only *say*
     
     (4) Hesen va kε εz dεwletia
     Hesen said that { I am, Hesen is } rich (Anand and Nevins, 2004)

     (5) Hesen termine kεno kε εz newεsha
     Hesen believe does that { I am, *Hesen is } sick (Anand and Nevins, 2004)

   - Nez Perce: *say, think*
   - Slave: *say, think, tell, want* (Rice, 1986)
   - Uyghur: wide range of verbs (e.g. *say, think, brag, dream, hear*) (Sudo, 2012)

2. Which indexicals shift (with which verbs)

3. Which indexicals are interpreted in an inherently perspectival way (de se)
Variation in indexical shift

1. Which verbs are involved in shifting
   - Aghem, Amharic, Zazaki: only say
   - Nez Perce: say, think

   \[
   (6) \quad \text{kii hii-wes 'iniit yo\={x} ke} \quad [\text{Nez Perce}]
   \]
   \[
   \text{this } 3\text{SUBJ-be.PRES house REL.PRON C}
   \]
   \[
   \text{Jack } \{ \text{hi-hi-ce-}0 \quad / \quad \text{hi-neki-se-}0, \quad \}
   \]
   \[
   \text{Jack } \{ \text{3SUBJ-say-IMPERF-PRES / 3SUBJ-think-IMPERF-PRES} \}
   \]
   \[
   [ \text{'}iin } 0\text{-haanii-}0\text{-ya} \quad _\]
   \[
   [ \text{I } 1\text{SUBJ-make-P-REM.PAST }_\]
   \]
   \[
   \text{This is the house that Jack} \_i \text{ says / thinks I} \_j \text{ built}
   \]
   - Slave: say, think, tell, want
   \quad (Rice, 1986)
   - Uyghur: wide range of verbs (e.g. say, think, brag, dream, hear)
   \quad (Sudo, 2012)

2. Which indexicals shift (with which verbs)

3. Which indexicals are interpreted in an inherently perspectival way (de se)
Variation in indexical shift

1. Which verbs are involved in shifting

2. Which indexicals shift (with which verbs)
   - Uyghur: 1st person, 2nd person, NOT locative *here* (Sudo, 2012)
   - Slave: 1st and 2nd with *tell*, only 1st with *say, want, think* (Rice, 1986)

3. Which indexicals are interpreted in an inherently perspectival way (de se)
Variation in indexical shift

1. Which verbs are involved in shifting

2. Which indexicals shift (with which verbs)

3. Which indexicals are interpreted in an inherently perspectival way (de se)
   - Nez Perce: 1st person, 2nd person, NOT locative *here* (Deal, 2014)
   - Uyghur: 1st person, NOT 2nd person (locative n/a) (Sudo, 2012)
## Three generalizations

1. A generalization about verbs (widely noted)

SAY is more likely to allow indexical shift than any other verb, e.g. THINK

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<tr>
<th></th>
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<td>–</td>
</tr>
<tr>
<td>unattested</td>
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### Three generalizations

2. **A generalization about indexicals**

The possibility of indexical shift is determined by the hierarchy 1st > 2nd > HERE

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</table>
Three generalizations

3. A generalization about de se

Shifty 1st person is always *de se*.
Requirements for *de se* interpretation conform to the hierarchy 1st > 2nd > HERE

<table>
<thead>
<tr>
<th>Language</th>
<th>1st always <em>de se</em></th>
<th>2nd always <em>de se</em></th>
<th>HERE always <em>de se</em></th>
</tr>
</thead>
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Outline

1. Dimensions of variation
2. Basic composition
3. Accounting for variation
4. Conclusions
The basic approach to indexical shift draws on two major conclusions:

1. Indexical shift cannot be a purely pragmatic affair; it has a crucial interface with the syntax

Uyghur: indexicals low in the embedded clause can be shifted, but those higher up in the embedded clause cannot be (Sudo 2012, Shkovsky and Sudo 2014)

Uyghur, Japanese: indexicals can be shifted in finite complement clauses, but not in nonfinite complements (Sudo, 2012)
The basic approach to indexical shift draws on two major conclusions:

1. Indexical shift cannot be a purely pragmatic affair; it has a crucial interface with the syntax

2. Indexical shift is not strictly a matter of quotation, whether at the clausal level or at the level of individual indexical items (partial quotation)

Nez Perce and many other languages:
> Clauses with indexical shift are not grammatically opaque
> Indexicals of the same type must shift together
The mechanism of indexical shift

The basic approach to indexical shift draws on two major conclusions:

1. Indexical shift cannot be a purely pragmatic affair; it has a crucial interface with the syntax

2. Indexical shift is not strictly a matter of quotation, whether at the clausal level or at the level of individual indexical items (partial quotation)

> The most successful account in responding to these desiderata is the shifty operator view (Anand and Nevins 2004, Anand 2006, Sudo 2012, Deal 2014, Shkovsky and Sudo 2014)
How shifty operators work

(7) Isii-ne Angel hi-i-caa-qa

who-ACC Angel 3SUBJ-say-IMPERF-REC.PAST

(OP) [ cew’cew’inis-ki pro ’e-muu-ce-∅

[ phone-with 1SG 1SUBJ/3OBJ-call-IMPERF-PRES _ ]

a. Who did Angel say I was calling?
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Unshifted reading, (a):
• OP is absent
• \[pro.1SG^c = Speaker(c)\]
How shifty operators work

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a. Who did Angel say I was calling?
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Unshifted reading, (a):
• OP is absent
• $[pro.1SG]^c = Speaker(c)$

Shifted reading, (b):
• OP is present
• $[pro.1SG]^c' = Speaker(c')=Angel$
• Speech and attitude verbs quantify over indices (centered worlds)

• Shifty operators overwrite context with index, wholly or in part

\[
\begin{align*}
\llbracket OP_{\forall} \alpha \rrbracket^c, i &= \llbracket \alpha \rrbracket^{i, i} \\
\llbracket OP_{AUTH} \alpha \rrbracket^{<A_c,...>,i} &= \llbracket \alpha \rrbracket^{<A_i,...>,i}
\end{align*}
\]
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  \end{align*}
  \]

• Explanation for syntactic effects:
  Only material in the sister of the operator is shiftable.
  Shifty operators are part of the finite C system.

• Explanation for shift together:
  When OP overwrites (a particular parameter of) context, all indexicals dependent on that (parameter of) context will shift.
Shift together in action

Nez Perce 1st person indexicals:

(8) Katie hi-hi-ce-∅
    Katie 3SUBJ-say-IMPERF-PRES

    [ pro 0-neki-se-∅
    [ 1SG 1SUBJ-think-IMPERF-PRES
        [ ‘iin-k’u 0-wees kíne ]
        [ I-too 1SUBJ-be.PRES here ]

a. Katie$_i$ says l$_j$/*$_i$ think l$_j$ am also here  (OP absent)
b. Katie$_i$ says l$_i$ think l$_i$ am also here  (OP present)
Outline

1 Dimensions of variation

2 Basic composition

3 Accounting for variation

4 Conclusions
Starting with generalization 2

2. A generalization about indexicals

The possibility of indexical shift is determined by the hierarchy 1st > 2nd > HERE

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If a language allows locative shift, it allows person shift.

> Nez Perce shows this generalization in microcosm in its shift together effects

- Person shift is possible without locative shift (like in Uyghur)
- Locative shift is impossible without person shift
Person shift without locative shift

(9) (Elicited in Lapwai, ID)

Context: my friend is calling me on his cellphone and describing his location. He is trying to make it to Lapwai, but he is lost.

\[
\text{pro } \text{hi-hi-ce-} \emptyset \quad \text{[pro } \text{kíne } \emptyset \text{-pay-ca-} \emptyset \text{]} \\
\text{3SG 3SUBJ-say-IMPERF-PRES[ 1SG } \text{here } 1\text{SUBJ]-arrive-IMPERF-PRES]} \\
\text{met’u weet’u } \text{pro } \text{hi-pay-ca-} \emptyset \quad \text{kíne} \\
\text{but not } 3\text{SG } 3\text{SUBJ-arrive-IMPERF-PRES here} \\
\text{He}_i \text{ says I}_i \text{ am arriving here, but he}_i \text{ is not arriving here.}
\]

- \([\text{pro.1SG}]^{c'} = \text{Speaker}(c')=\text{my friend} \neq \text{Speaker}(c)
- \([\text{kíne ‘here}]^{c} = \text{Lapwai} \neq \text{Location of my friend’s speaking event}\)
*Locative shift without person shift

(10) Elicited in Lapwai, ID

\[ 'iin-lawtiwaa keeleepoonya-pa hi-neki-se-\emptyset \]

my-friend California-LOC 3SUBJ-think-IMPERF-PRES

\[ [ 'iin \emptyset \text{weku'} \quad \text{koná} / *kíne \quad \text{hal\text{"}{p}aawit-pa} ] \]

\[ [11 \text{SUBJ} \quad \text{be.FUT} \quad \text{there} / *\text{here} \quad \text{Sunday-LOC} ] \]

My friend in California, thinks I will be there, / * here, on Sunday
Accounting for the asymmetry

Unlikely that this asymmetry is to be explained pragmatically:

- a shifted value is always well-defined for the locative indexical (since attitudes have locations) regardless of whether the person indexicals are shifted
- there’s no constraint against “improper contexts”, not corresponding to any attitude event; it’s ok to have only person indexicals shifted but not locatives
Accounting for the asymmetry

An alternative proposal

- Nez Perce has two shifters, $OP_{loc}$ and $OP_{pers}$

\[
\begin{align*}
[OP_{p ers} \alpha] & \langle A_c, H_c \ldots, i \rangle = [\alpha] \langle A_i, H_i \ldots, i \rangle \\
[OP_{loc} \alpha] & \langle \ldots Loc_c \ldots, i \rangle = [\alpha] \langle \ldots Loc_i \ldots, i \rangle 
\end{align*}
\]

- $OP_{loc}$ occurs higher in the CP domain than $OP_{pers}$

**Diagram:**

```
  V'
    /\   \\
   V   \\
     /\   \\
    OP_{loc}  OP_{pers}  \ldots \\
      /\     \\
     TP     \\
        /\   \\
      I am here
```

(to be revised)
Accounting for the asymmetry

We know about the syntax of embedded clauses that

- Complement clauses come in different sizes (e.g. CP vs. TP)
- Clause size variation is monotonic; the difference is where in the sequence of projections the embedded clause ends
Accounting for the asymmetry

We know about the syntax of embedded clauses that

- Complement clauses come in different sizes (e.g. CP vs. TP)
- Clause size variation is monotonic; the difference is where in the sequence of projections the embedded clause ends

Suppose Nez Perce SAY/THINK embed clauses of three sizes:

\[
\begin{align*}
V' & \quad V' \\
V & \quad V \\
& \quad OP_{loc} \quad OP_{pers} \quad TP \\
& \quad TP & \quad TP & \quad TP \\
\langle A_i, H_i, Loc_i >, i & \quad \langle A_i, H_i, Loc_c >, i & \quad \langle A_c, H_c, Loc_c >, i
\end{align*}
\]
Explaining generalization 2

2. A generalization about indexicals

The possibility of indexical shift is determined by the hierarchy 1st > 2nd > HERE

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A familiar type of functional sequencing effect:
Shifty operators occur on the clause edge in a universally determined hierarchical order.

Language variation is determined by the size of the complements that attitude verbs allow.
1. A generalization about verbs (widely noted)

SAY is more likely to allow indexical shift than any other verb, e.g. THINK

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- Verbs like SAY are crosslinguistically most likely to allow syntactic ‘embedded root phenomena’ such as V2 or sentential subjects

(Hooper and Thompson 1973, Wiklund et al. 2009)
Explaining generalization 1

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- Verbs like SAY are crosslinguistically most likely to allow syntactic ‘embedded root phenomena’ such as V2 or sentential subjects
  (Hooper and Thompson 1973, Wiklund et al. 2009)

- Standard explanation:
  (cp. Sundaresan 2011)
  Speech complements are structurally the largest; direct perception complements are structurally the smallest; thought complements are somewhere in the middle.
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- Standard explanation: (cp. Sundaresan 2011)
  
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  > Language variation is (again) determined by the size of the complements that attitude verbs allow.
### Explaining generalization 1

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Possible: SAY and THINK take complements of equal size (Nez Perce,…)

(13)  

a. SAY [ \[ OP [ TP  

b. THINK [ \[ OP [ TP  

Possible: SAY takes a larger complement than THINK (Amharic,…)

(14)  

a. SAY [ \[ OP [ TP  

b. THINK [ TP  

Impossible: SAY takes a smaller complement than THINK (unattested)

(15)  

a. SAY [ TP  

b. THINK [ \[ OP [ TP  

```
Variation within and across languages

- Zazaki: 1st, 2nd, HERE all shift under SAY
  \[ TP ] <A_i, H_i, Loc_i>, i

  \[
  \begin{align*}
  V' & \rightarrow \text{SAY} \\
  \text{SAY} & \rightarrow \text{OP}_{loc} \ \text{OP}_{addr} \ \text{OP}_{spkr} \ \cdots \\
  \text{TP} & \]

- Uyghur: only 1st and 2nd shift
  \[ TP ] <A_i, H_i, Loc_c>, i

  \[
  \begin{align*}
  V' & \rightarrow \text{SAY} \\
  \text{SAY} & \rightarrow \text{OP}_{addr} \ \text{OP}_{spkr} \ \cdots \\
  \text{TP} & \]

Back to the *de se*

3. A generalization about *de se*

Shifty 1st person is always *de se*.
Requirements for *de se* interpretation conform to the hierarchy 1st > 2nd > HERE

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</table>
Nez Perce: shifty persons must be de se

(16) Context: a woman is examining a portrait of herself.

\[ pro \text{ hi-neki-se-0} \quad [ pro \text{ 0-wees sayaq’ic cepeeletpit-pe }] \]
\[ 3SG \text{ 3SUBJ-think-IMPERF-PRES} \quad [ 1SG \text{ 1SUBJ-be.PRES pretty picture-LOC} ] \]
She; thinks I; am pretty in the picture.

a. The woman looks at the picture and recognizes herself.
b. # The woman looks at the picture but does not recognize that it is her own portrait.

Consultant: “She’s recognizing herself.”

- Same finding for 2nd person
(17) Context: Costco is a large, prominent store in Clarkston. Everyone knows where it is.

’aayat hii-wes Clarkston-pa
woman 3SUBJ-be.PRES Clarkston-LOC
The woman is in Clarkston,

met’u pro hi-neki-se-∅ Asotin-pa
but 3SG 3SUBJ-think-IMPERF-PRES Asotin-LOC
but she thinks (she is) in Asotin,

kaa pro hi-neki-se-∅ [ Costco hii-wes kíne ]
and 3SG 3SUBJ-think-IMPERF-PRES [ Costco 3SUBJ-be.PRES here ]
and she thinks Costco is here,.

• Utterance location: Lapwai
• Thinker’s self-location: Asotin
• Thinker’s actual location: Clarkston
De se interpretation à la Anand and Nevins 2004

- Speech and attitude verbs quantify over indices (centered worlds)

\[ \text{[SAY } \alpha]\alpha^{c,i} = \lambda x. \forall i' \in R_{say}(x, i) [\alpha]^{c,i'} \]

\[ i' \in R_{say}(x, i) \text{ iff} \]

a. \( w_{i'} \) is compatible with what \( x \) says in \( w_i \)

b. \( \text{auth}_{i'} \) is the individual that \( x \) identifies as herself in \( w_i \)

c. \( \text{hearer}_{i'} \) is the individual that \( x \) identifies as the hearer in \( w_i \)

d. \( \text{loc}_{i'} \) is the individual that \( x \) identifies as her location in \( w_i \)

- De se locative shifter (Zazaki)

\[ \text{[OP}_{\text{LOC}} \alpha] <...Loc_{c...}>,i = [\alpha] <...Loc_{i...}>,i \]

- De te shifter (Nez Perce)

\[ \text{[OP}_{\text{ADDR}} \alpha] <...H_{c...}>,i = [\alpha] <...H_{i...}>,i \]
Accounting for non-\emph{de se} shifty indexicals

- If coordinates of the index are always \emph{de se} coordinates, Nez Perce locative and Uyghur 2nd person shifters must overwrite with something other than a coordinate of the index.

- Proposal: Non-\emph{de se} shifters overwrite contextual parameters with values drawn from an event argument
Accounting for non-de se shift-y indexicals

- Attitudes are eventualities with content
  - Saying-event content: the set of worlds compatible with what is said.
  - Thinking-state content: the set of worlds compatible with what is thought.

- A slightly decompositional take on attitude verbs (after Kratzer 2006, Anand and Hacquard 2008):

  (21) 
  $$[hi \text{ ‘say’}]^{c,i} = \lambda e.\text{saying}(e)$$

  (22) 
  $$[neki \text{ ‘think’}]^{c,i} = \lambda e.\text{thinking}(e)$$

  (23) 
  $$[C^0 \alpha]^{c,i} = \lambda e.\forall i' \in \text{CON}(e) [\alpha]^{c,i'}$$

  $i' \in \text{CON}(e)$ iff

  a. $w_i'$ is compatible with the content of $e$
  b. auth$_i'$ is the individual that author($e$) identifies as herself in $w_e$
  c. hearer$_i'$ is the individual that author($e$) identifies as the hearer in $w_e$
  d. loc$_i'$ is the individual that author($e$) identifies as her location in $w_e$
Accounting for non-\textit{de se} shifty indexicals

- Non \textit{de se} shifters directly use the event argument associated with the attitude to overwrite the context

\begin{equation}
\text{(24) Nez Perce locative shifter (non } \textit{de se}) \\
\text{Where } \llbracket \alpha \rrbracket^{c,i}_c \text{ is a predicate of events } e, \\
\llbracket \text{OP}_{\text{LOC}} \alpha \rrbracket^{...\text{Loc}...}_i = \llbracket \alpha \rrbracket^{...\text{LOC}(e)...}_i
\end{equation}

\begin{equation}
\text{(25) Uyghur addressee shifter (non } \textit{de se}) \\
\text{Where } \llbracket \alpha \rrbracket^{c,i}_c \text{ is a predicate of events } e, \\
\llbracket \text{OP}_{\text{ADDR}} \alpha \rrbracket^{...\text{H}...}_i = \llbracket \alpha \rrbracket^{...\text{Addr}(e)...}_i
\end{equation}
Two types of shifty operators

1. *De se*

   (26) Zazaki locative shifter
   \[
   \lfloor \text{OP}_{\text{LOC}} \alpha \rfloor_{\ldots \text{Loc}_c\ldots ,i} = \lfloor \alpha \rfloor_{\ldots \text{Loc}_i\ldots ,i}
   \]

   (27) Nez Perce addressee shifter
   \[
   \lfloor \text{OP}_{\text{ADDR}} \alpha \rfloor_{\ldots \text{H}_c\ldots ,i} = \lfloor \alpha \rfloor_{\ldots \text{H}_i\ldots ,i}
   \]

2. *Non de se*

   (28) Nez Perce locative shifter
   Where \( \lfloor \alpha \rfloor^{c,i} \) is a predicate of events \( e \),
   \[
   \lfloor \text{OP}_{\text{LOC}} \alpha \rfloor_{\ldots \text{Loc}_c\ldots ,i} = \lfloor \alpha \rfloor_{\ldots \text{LOC}(e)\ldots ,i}
   \]

   (29) Uyghur addressee shifter
   Where \( \lfloor \alpha \rfloor^{c,i} \) is a predicate of events \( e \),
   \[
   \lfloor \text{OP}_{\text{ADDR}} \alpha \rfloor_{\ldots \text{H}_c\ldots ,i} = \lfloor \alpha \rfloor_{\ldots \text{Addr}(e)\ldots ,i}
   \]
Deriving the hierarchy

- $C^0$ introduces both the attitude event argument and quantification over centered indices

(30) $\left[ C^0 \alpha \right]^{c,i} = \lambda e. \forall i' \in CON(e) \left[ \alpha \right]^{c,i'}$

$i' \in CON(e)$ iff

a. $w_{i'}$ is compatible with the content of $e$

b. $auth_{i'}$ is the individual that $author(e)$ identifies as herself in $w_e$

c. hearer_{i'} is the individual that $author(e)$ identifies as the hearer in $w_e$

d. loc_{i'} is the individual that $author(e)$ identifies as her location in $w_e$

- *De se* shifters must occur below $C$ (in order to have access to the indices quantified over)
- Non *de se* shifters must occur above $C$ (in order to have access to the event argument)
Nez Perce embedded clauses

The sequence of operators spans CP. C is located between $O_{\text{LOC}}$ and $O_{\text{PERS}}$

\[
\begin{aligned}
&\text{\(TP\)} <A_i, H_i, \text{Loc}_c>, i \\
&\text{\(TP\)} <A_i, H_i, \text{Loc}_c>, i \\
&\text{\(TP\)} <A_c, H_c, \text{Loc}_c>, i
\end{aligned}
\]

(31) Where $[\alpha]_{c,i}$ is a predicate of events $e$, $[O_{\text{LOC}} \alpha] <\ldots \text{Loc}_c\ldots>, i = [\alpha] <\ldots \text{LOC}(e)\ldots>, i$

(32) $[O_{\text{PERS}} \alpha] <A_c, H_c\ldots>, i = [\alpha] <A_i, H_i\ldots>, i$
Uyghur embedded clauses

2nd person shifty indexicals are not *de se* but 1st persons are. So, C must be located between $\text{OP}_{\text{ADDR}}$ and $\text{OP}_{\text{SPKR}}$.

(33) Where $[[\alpha]]^{c,i}$ is a predicate of events $e$, $[[\text{OP}_{\text{ADDR}} \alpha]]^{\ldots H_c \ldots,i} = [[\alpha]]^{\ldots \text{Addr}(e) \ldots,i}$

(34) $[[\text{OP}_{\text{SPKR}} \alpha]]^{A_c, \ldots,i} = [[\alpha]]^{A_i, \ldots,i}$
Explaining generalization 3

3. A generalization about de se

Shifty 1st person is always *de se*. Requirements for *de se* interpretation conform to the hierarchy 1st > 2nd > HERE

<table>
<thead>
<tr>
<th></th>
<th>1st always de se</th>
<th>2nd always de se</th>
<th>HERE always de se</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zazaki</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nez Perce</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>Uyghur</td>
<td>✓</td>
<td>–</td>
<td>n/a</td>
</tr>
</tbody>
</table>

- **OP_{SPKR}**, if present, is always below C.
  
  (If **OP_{SPKR}** and **OP_{ADDR}** are bundled together, *both* are below C.)

- Otherwise, C may appear anywhere in the sequence of shifters **OP_{LOC} > OP_{ADDR} > OP_{SPKR}**. All shifters below C impose *de se* requirements (index parameters overwrite context) and all shifters above C do not (event parameters overwrite context).
Outline

1. Dimensions of variation
2. Basic composition
3. Accounting for variation
4. Conclusions
Summary of main claims

Shifters of the speaker, addressee and location coordinates of context occur in a fixed order at the edge of the clause

- They project syntactic structures which may or may not meet the subcategorizational requirements imposed by verbs
  - Together with independent evidence on the variable size of complement clauses, and the relative size of speech and thought reports, yields the generalization about verbs

- Incomplete projection of the series results in partial indexical shift
  - Incomplete projections standardly remove layers from the top of a projection series, yielding the generalization about indexicals

- Shifters above C overwrite with event parameters (non \textit{de se}); shifters below C overwrite with index parameters \((\textit{de se})\). \text{OP}_{\text{SPKR}} is always below C.
  - Yields an account of the previously unrecognized hierarchy effect in de se interpretation
Perspectival expressions and the *de se* crosslinguistically

Context shift requires access both to the *de se* coordinates we get from quantification over centered worlds AND to the more mundane properties of attitude events.
Conclusions

References I


References II


Rice, Keren D. 1986. Some remarks on direct and indirect speech in Slave (Northern Athapaskan). In Direct and indirect speech, ed. F. Coulmas, 47–76. Mouton de Gruyter.


