Tracking down the elusive subject:
findings from research on ‘null subject’ in NZSL & Auslan

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David McKee    Trevor Johnston

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Levels of Context

- Cultural - Social - Situational
  - underlying & framing interaction
  - *macro level*

- Discourse
  - within text & interaction
  - *macro and micro level*

- Utterance
  - in sentence, grammar
  - *micro level*
Subjects matter

Subject/agent (who/what)
- noun
- pronoun
- Ø

Verb/predicate (action/state)
- went to a party
- got drunk
- had a fight
- got punched in head
- went to hospital
- off work next day

How would you express this series of events in Auslan?
Pointing backwards (or not)

- Pronouns ‘point backwards’ to referents previously mentioned in the discourse
- Understanding the agent (subject) of predicates creates cohesion in discourse
- So, why do subject pronouns frequently ‘go missing’ in SL and other pro-drop languages?
Auslan & NZSL research

(ASL*), Auslan, NZSL – similar studies of variable deletion of subjects in discourse:

- What contextual factors - linguistic and social - influence use of ‘null subject’?

# Sociolinguistic Variation Projects

<table>
<thead>
<tr>
<th>Participants (in project)</th>
<th>Auslan</th>
<th>NZSL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>211 native &amp; early signers, balanced for age, sex, region</td>
<td>138 early signers, balanced for age, sex region, ethnicity</td>
</tr>
<tr>
<td>Sites</td>
<td>Sydney, Perth, Adel, Melbourne, Brisbane</td>
<td>Auckland, Napier, Palm. Nth, Wgtn, ChCh</td>
</tr>
<tr>
<td>Data for subject study</td>
<td>20 spontaneous narratives from conversation; 20 signers Av length c. 1 min 977 verb clauses</td>
<td>63 narratives from conversation &amp; interview; 33 signers Av length c. 1 min 2145 verb clauses</td>
</tr>
</tbody>
</table>
Method

Auslan
- 977 verb clauses
- 63% (n = 611) null subject
- 37% (n = 366) overt subject

NZSL
- 2145 verb clauses
- 55% (n = 1183) null subject
- 45% (n = 962) overt subject

Each verb clause coded for linguistic and social factors

VARBRUL (stats) analysis to measure the effects of factors

Percent of Overt & Null Subjects

<table>
<thead>
<tr>
<th></th>
<th>Auslan</th>
<th>NZSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ subject</td>
<td>37%</td>
<td>45%</td>
</tr>
<tr>
<td>- subject</td>
<td>63%</td>
<td>55%</td>
</tr>
</tbody>
</table>
1. Verb type
   - Plain
   - Agreement (person arguments)
   - Spatial (location arguments)

2. Co-reference across clauses
   - same subject referent as previous clause
   - different referent than previous clause
   - match with type of subject in previous clause? null, pronoun, noun
Linguistic factors 2

3. Person & number
- 1 sg, 1 pl,
- 2sg/2pl,
- 3sg/pl.

4. Role shift
- role shift in clause
- no role shift

5. English influence
(Auslan only)
- Influence in clause: non-nativised fingerspelling, English syntax, English mouthings without sign
- No influence of English in the clause

6. Genre (NZSL only)
- Conversation
- Interview
Social factors coded

1. **Gender**
2. **Age**
   - **AUSLAN**: Younger (18-50 yrs), Older (51-89 yrs)
   - **NZSL**: Younger (18-39), Middle (40-64), Older (65+)
3. **Language background** *(AUSLAN only)*
   (a) deaf of deaf parents (b) deaf of hearing parents
4. **Ethnicity** *(NZSL only)*
   Maori  Pakeha
Results: significant factors in order

**Auslan**
1. Co-reference
2. Person + number
3. English influence
4. Verb type
5. Role shift

**NZSL**
1. Co-reference
2. Age + ethnicity
3. Genre - Conv/Int
4. Verb type
5. Role shift
## Result details 1

<table>
<thead>
<tr>
<th>Ling. Factor Group</th>
<th>Factor</th>
<th>VARBRUL Weight</th>
<th>VARBRUL Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AUSLAN</td>
<td>NZSL</td>
</tr>
<tr>
<td>Co-referent with subj prev clause</td>
<td>Same referent</td>
<td>.641</td>
<td>.597</td>
</tr>
<tr>
<td></td>
<td>Different referent</td>
<td>.389</td>
<td>.345</td>
</tr>
<tr>
<td>Match with subject type in prev clause</td>
<td>Null subj prev</td>
<td>strong tendency for null subject to follow a null subject, and pro subject to follow a pro subject</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pro subj prev.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noun sub prev.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Weights above .50 favour null subject. Below .50 favour overt subj
**Result details 2**

<table>
<thead>
<tr>
<th>Ling. Factor Group</th>
<th>Factor</th>
<th>VARBRUL Weight AUSLAN</th>
<th>VARBRUL Weight NZSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person &amp; Number*</td>
<td>2sg/pl</td>
<td>.804</td>
<td>(non-significant factor)</td>
</tr>
<tr>
<td></td>
<td>1pl</td>
<td>.734</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3sg/pl</td>
<td>.568</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1sg</td>
<td>.329</td>
<td></td>
</tr>
<tr>
<td>English influence in clause</td>
<td>No English Influence</td>
<td>.535</td>
<td>(diff. factor)</td>
</tr>
<tr>
<td></td>
<td>English influence</td>
<td>.312</td>
<td>Conversation .535</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interview .455</td>
</tr>
</tbody>
</table>

* 858/956 subject tokens in Auslan were 3 sg/pl or 1sg. Very few 2nd person or 1pl subjects occurred in the data.
<table>
<thead>
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<th>Factor</th>
<th>VARBRUL Weight AUSLAN</th>
<th>VARBRUL Weight NZSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb types</td>
<td>Spatial</td>
<td>.571</td>
<td>.581</td>
</tr>
<tr>
<td></td>
<td>Plain</td>
<td>.448</td>
<td>.479</td>
</tr>
<tr>
<td></td>
<td>Agreement*</td>
<td>.433</td>
<td>.491</td>
</tr>
<tr>
<td>Role shift</td>
<td>Role shift present</td>
<td>.567</td>
<td>.562</td>
</tr>
<tr>
<td></td>
<td>Role shift absent</td>
<td>.469</td>
<td>.483</td>
</tr>
</tbody>
</table>

* About 2/3 of Auslan Agreement verb tokens were ‘single agreement’, eg. TELL, SEE - more use of overt pro than dbl agr
### Result details 3

<table>
<thead>
<tr>
<th>Social Factor Group*</th>
<th>Factor</th>
<th>VARBRUL Weight AUSLAN</th>
<th>VARBRUL Weight NZSL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Middle</td>
<td>(non-significant factor)</td>
<td>.574</td>
</tr>
<tr>
<td></td>
<td>Young</td>
<td></td>
<td>.496</td>
</tr>
<tr>
<td></td>
<td>Old</td>
<td></td>
<td>.428</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Pakeha</td>
<td></td>
<td>.525</td>
</tr>
<tr>
<td></td>
<td>Maori</td>
<td>(not included)</td>
<td>.454</td>
</tr>
</tbody>
</table>
So, what do the findings tell us?
Reference chains

- Our results show that continuation of the same subject between clauses is the ‘strongest’ context for ‘dropping’ subjects
  - chain of reference within the discourse (between sentences & between interlocutors) seems to play a more important role in maintaining referential cohesion than syntactic or morphological factors (eg, verb type) - or social factors.

- Same finding about ‘pro drop’ in various spoken languages and in ASL (cf. Lucas et al; Meyerhoff)
Discourse style & situation

- English influence in sentence structure (Auslan), or Genre (NZSL), affects how overtly signers express subject reference
  
  - More English ‘contact’ features, and less shared or familiar information context (interview) = more overt subjects (less dropping)
Space as subject reference

- Verb type
  - Null subject more likely with **spatial verbs** than with plain and agreement verbs

- Role shift*
  - Null subject more likely within role shifts (CA).

- **In both cases, subject reference can be optionally encoded in space & directionality**

* See de Beuzeville, Johnston & Schembri (forthcoming) for more research on spatial reference in Auslan verbs and CA
Social effects minimal

- Social factors have relatively little effect on subject deletion; *none were statistically significant in Auslan.*

- Age had an effect in NZ (*middle age favour drop*)
  - More shared referential context with peers?
  - Fluency? Style?

- *In ASL, women and older singers favoured overt subjects (men & younger - more dropping)*
Do non-natives drop their pro’s?

Comparisons of L2 v. native speakers of other pro-drop languages show differing patterns of overt and null subjects*:

L2 speakers expect & use more overt subjects in contexts where natives prefer null subjects

- pragmatic & processing differences in use of reference structures in L1 and L2 speakers
- pro-drop use also affected by language contact in bilinguals

Interpreters may struggle with ‘ambiguity’ of null subject reference

- non-native **discourse** & **pragmatic** skills (antecedents)
- non-native **syntactic** skills - eg, spatial ref, topic shifts
- **time pressure** to process and transfer meaning (temporal distance and subtle shifts in reference chains challenging)
Now you know

- a bit more about those missing pro’
- They are systematically all over the place. (You weren’t just blinking)

- How about some research on how SL interpreters decode & express subject reference?
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