Differential subject marking also depends on syntactic height: Evidence from Delaware

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WCCFL 38, UBC
March 8th, 2020

1 Introduction

• Delaware is an Eastern Algonquian language that shows differential argument marking (DAM).\(^1\)
• DAM in Delaware is manifested by an inflectional suffix, called PERIPHERAL AGREEMENT (PA, Goddard 1979). PA occurs at the right edge of the verb and indexes the phi-features (animacy, number, and obviation) of a third-person argument.
• Definiteness gives rise to differential subject marking (DSM) in Delaware. As shown below, the definite inanimate subject is overtly indexed by PA-al, (1a), while the indefinite counterpart is not indexed, (1b).

(1) Delaware DSM: inanimate subject
a. n- tômsó -kw -one’nô -[al] paxksi -kan -al
1- cut -INV -1PL -IN.PL knife -PL
‘The knives cut us.’

b. n- tômsó -ko -hna paxksi -kan -al
1- cut -INV -1PL knife -PL
‘Some knives cut us.’ (Goddard 1979: 159)
• In fact, (1) is a peculiar case. Differential peripheral agreement only occurs when the subject of the transitive clause is INANIMATE (as in (1)) or OBVIATIVE (i.e. a non-topical animate third person, see examples in §3).

(2) nô - mîl - âkkw -w -[ak]
1- give to -INV -1SG -AN.PL
‘They/some people give to me.’ (Goddard 1979: 174)
• Generally, Delaware subjects do not show DSM. For instance, when the subject of a transitive verb is animate, it’s overtly indexed by PA, -ak, regardless of definiteness.
• In literature, DSM has always been discussed in connection with differential object marking (DOM):
  – Aissen (2003)’s prominent account considers DSM as a mirror image of DOM.
  – Others have proposed that DSM works in the same way as DOM, in particular, is differentiated by their syntactic configuration (e.g. Coon & Preminger 2017; de Hoop & Narasimhan 2009; Jelinek & Carnie 2003; Kornfilt 2009; Woolford 2009, among others).
• This talk supports the second account by tying DSM to an argument’s syntactic height, in a similar vein to Diesing (1992)’s movement approach to DOM.
• Core proposal: the inanimate subject is originated lower than the animate subject in syntax (cf. Massam 2009; Legate 2014; Tollan & Oxford 2018).

(3) Syntactic height and movement
a. Animative: base-position higher, accessible to the probe

  [VoiceP Anim [VP ...]]

  \(...\text{AGREE}...\)

b. Inanimate: base position lower, inaccessible to the probe; unless moved, then accessible

  [VoiceP InANREF [VP ... InANIND ...]]

  \(...\text{moved, AGREE}...\)

• Thus, argument’s syntactic height and the accessibility of the probe together explains why DSM occurs in some cases and does not occur in others.
  – Movement results in differential readings of definiteness.
  – Argument’s syntactic height leads to the success/failure of the operation of AGREE between the probe and the goal.

\(^1\) The term “differential argument marking” is used descriptively in this talk, i.e. the argument is differentially marked via morphology.
2 Overview: the movement-based account

2.1 The Mapping Hypothesis and how it relates to DOM

- Diesing (1992) is a foundational work that linked the semantic interpretation of definites to their syntactic representations.
- Simply speaking, her Mapping Hypothesis (MH) assumes that definite nominals and indefinite nominals are mapped onto different areas of the syntactic tree:
  - *nuclear scope* (i.e. VP-internal): indefinite nominals;
  - *restrictive clause* (i.e. VP-external): definite nominals after moved out of VP.

- How is object movement tied to the cross-linguistic DOM phenomenon?
  - The *definite* object: moved, syntactically higher, more accessible for the Agree probe ⇒ *overtly indexed*;
  - The *indefinite* object: unmoved, syntactically lower, inaccessible for the Agree probe ⇒ *unindexed*.

- This is what exactly happens in Delaware’s DOM: the definite object is indexed by PA -ak, (4a), and the indefinite object is not indexed, (4b).

(4) Delaware DOM: animate object

a. \textit{n} -\textit{ne-w} -\textit{ā} -\textit{w} -[\textit{ak}] \textit{lōnōw} -\textit{ak}
   1- see 3.OBJ -1SG -AN.PL  man -AN.PL
   ‘I saw the men.’ (Goddard 1979: 158)

b. \textit{n} -\textit{ne-w} -\textit{ā} -\textit{hm} \textit{lōnōw} -\textit{ak}
   1- see- 3.OBJ -1SG  man -AN.PL
   ‘I saw some men.’ (Goddard 1979: 158)

2.2 Situating the movement approach in Delaware

- Diesing’s proposal was made before the development of more articulated syntactic structures, so it is not clear whether her “VP” corresponds to RootP, vP, or VoiceP.
- Algonquian serves as a great diagnostic tool as it has all three layers – RootP, vP and VoiceP.

- Following existing work, the morphological positions of the Algonquian transitive verb correspond to four syntactic heads:
  - \(v^0\): verb category assigner (Brittain 2003)
  - Voice\(^0\): object agreement (Oxford 2014)
  - Infl\(^0\): primary argument agreement (Ritter & Wiltshko 2009)
  - C\(^0\): peripheral agreement (Halle & Marantz 1993; Branigan & MacKenzie 1999)

(5) Algonquian transitive verb template

a. \ldots-\textit{Root-v}^0-\textit{Voice}^0-\textit{Infl}^0-\textit{C}^0
b. \textit{n} -\textit{paka} -\textit{m} -\textit{ā} -\textit{w} -\textit{nā} -\textit{Ø} -\textit{mani}
   1- hit -TA -3.OBJ -1PL -AN.SG
   ‘We hit him.’ (Goddard 1979: 35)

- Delaware DOM shown in (4) thus can be understood as object’s syntactic height in relation to the accessibility of the Probe on C\(^0\), see (6).

(6) Derivation of DOM (based on Diesing 1992)

a. object: moved, definite, accessible for C
   \[ [\text{VoiceP SUBJ OBJ} [v_p \ldots f \ldots]] \]
   \[ \bullet \bullet \bullet (\text{moved, AGRE}) \bullet \]

b. object: unmoved, indefinite, inaccessible for C
   \[ [\text{VoiceP SUBJ} [p \ldots \text{OBJ} \ldots]] \]
   \[ o \ldots (\text{unmoved, AGRE}) \ldots o \]

- Above all, the movement-approach suggests that vP is the equivalent of Diesing’s “VP” and it predicts:
  i) DOM pattern: the indexed object must move out of the vP.
  ii) No DSM pattern: as the subject is already outside of the vP.
2.3 What follows the MH

• Delaware DOM is well captured: differential peripheral marking not just applies to the animate object (cf. (4)); but also applies to the inanimate object, see (7).

(7) **DOM: inanimate object**
   a. \[\text{n-} \text{on} \quad \text{-am} \quad \text{-on} \quad \text{[al]}\]
   1- look.at -OBJ.IN -1SG -IN.PL
   ‘I looked at them.’
   b. \[\text{n-} \text{on} \quad \text{-am} \quad \text{-him}\]
   1- look.at -OBJ.IN -1SG
   ‘I looked at a/some (inanimate object).’ (Goddard 1979: 179)

• The derivation of (7) works the same as it is with the animate objects (cf. (6)), so I omit its schematic representations.

• The “no DSM” pattern is confirmed: recall (2), here repeated as (8).

(8) \[\text{n-} \text{m} \quad \text{ak}\]
1- give.to -INV -1SG -AN.PL
‘They/some people give to me.’ (Goddard 1979: 174)

• Again, the subject is already outside of the vP, syntactically high enough to be targeted by the probe on C0.

(9) **Derivation of no DSM: vP-external subject is accessible for C**

C0 [VoiceP [SUBJ [vP ...OBJ ...]]]

2.4 What seems not follow the MH

• Recall the two particular kinds of subjects that exceptionally contradict the “no DSM” prediction.

• First, recall the examples in (1) (repeated as (10)), DSM does occur when the subject is inanimate.

(10) **Delaware DSM: inanimate subject**
   a. \[\text{n-} \text{tomso} \quad \text{-kw} \quad \text{-on} \quad \text{[al]} \quad \text{paxksi-kan} -\text{al}\]
   1- cut -INV -1PL -IN.PL knife -PL
   ‘The knives cut us.’
   b. \[\text{n-} \text{tomso} \quad \text{-ko} \quad \text{hna} \quad \text{paxksi-kan} -\text{al}\]
   1- cut -INV -1PL knife -PL
   ‘Some knives cut us.’ (Goddard 1979: 159)

• Second, DSM also occurs when the subject is obviative: the definite subject in (11a) is indexed by PA -al and the indefinite subject in (11b) is not indexed2.

(11) **Delaware DSM: obviative subject**
   a. \[\text{w-} \text{nahl} \quad \text{-okw} -\text{w} -\text{[al]}\]
   3- kill -INV -3SG -OBV
   ‘He/They killed him.’
   b. \[\text{makw-al} \quad \text{nahl} \quad \text{-okw} -\text{w} -\text{[0]}\]
   bear-obv kill -INV -3 -AN.SG
   ‘A bear/Some bears killed him.’ (Goddard 1979: 158-9)

• The patterns in (10) and (11) pose a challenge to the MH: since the subject of the transitive clause is located in Spec-VoiceP, it should be accessible to C-agreement regardless of its definiteness.

• Questions:
  – why do inanimate subjects trigger a differential subject agreement pattern while the animate subjects do not?
  – why do obviative subjects also trigger a differential subject agreement pattern while the prototypical animate subjects do not since they are animate?

3 Delaware DSM with inanimate and obviative subjects

• I argue that these two kinds of subjects do not contradict the MH, rather, they reinforce the core insight of the MH. Namely, differential syntactic positions lead to different semantic interpretations.

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2 The null morphology of PA here indexes the singular proximate animate object.
Core insight: different light verb phrases, VoiceP and vP, are argued to differ in introducing the external argument with different kinds of semantics (see detailed discussion in Massam 2009 for Niuean and Tollan & Oxford 2018 for Algonquian):
  - VoiceP introduces more volitional agents;
  - vP introduces less volitional agents.

3.1 Inanimate subjects

- It may be tempting to consider Aissen (2003): inanimates trigger DSM because it requires overt marking for being less marked on the prominence scale than animates.
- In a nutshell, Aissen assumes DSM is the mirror image of DOM. But in Algonquian, the animacy of the subject matters but the animacy of the object does not.
  - Recall regardless of the object’s animacy, whether animate in (4) or inanimate in (7), the object always shows DOM.
- I propose that inanimate subjects must always be introduced by vP rather than VoiceP because an inanimate subject is inherently not a prototypical agent argument with volitional force but rather a “doer” argument (cf. Dowty 1991; Legate 2014; Tollan 2018).
- The previous inanimate DSM examples thus can be well accounted by a movement-driven analysis:

\[
\begin{align*}
\text{a.} & \quad \text{definite subject, moved, accessible for C} \\
& \quad \left[ \text{InfP} \left[ \text{VoiceP} \left[ \text{SUBJN} \left[ \text{vP} \left[ \text{RootP OBJ} \right] \right] \right] \right] \right] \\
& \quad \text{moved, \text{prox}} \quad \text{moved, \text{obv}} \\
\text{b.} & \quad \text{indefinite subject, unmoved, inaccessible for C} \\
& \quad \left[ \text{InfP} \left[ \text{VoiceP} \left[ \text{SUBJN} \left[ \text{RootP OBJ} \right] \right] \right] \right] \\
& \quad \text{unmoved, \text{prox}} \quad \text{unmoved, \text{obv}}
\end{align*}
\]

- Variations: unlike Delaware, some Algonquian languages do not allow inanimate subjects. For instance, in Blackfoot the external argument of transitive verbs (TA/TI verbs) must be animate.

- Even a subject that is grammatical animate but semantically inanimate is prohibited in Blackfoot, e.g. isttoänwa ‘knife’ in (13).

\[
\begin{align*}
\text{(13)} & \quad \ast \text{om-wa isttoän-wa iakahsini-m-wa ann-istti ikkstsi-istti.} \\
& \quad \text{DEM-3 knife-3 cut-IN.OBJ-3SG DEM-IN.PL branch-IN.PL} \\
& \quad \text{‘That knife cut those branches.’ (Blackfoot, Frantz 1991: 45)}
\end{align*}
\]

- Why is (13) prohibited?
  - Ritter & Rosen (2010: 139): the grammatical animate nouns are “entities capable of exercising will (i.e. people and animals)”.
  - The animate agent is introduced by VoiceP which requires it to be volitional, however, isttoänwa ‘knife’ is semantically unable to exercise volition or will.
- Cross-linguistically, the same restriction does not apply for all. A similar sentence is allowed in Mi’gmaq, e.g. tma’gittaqan ‘saw’ in (14).

\[
\begin{align*}
\text{(14)} & \quad \text{Tma’gittaqan tms’g psetgun} \\
& \quad \text{saw.IN cut.TI-3 branch.IN} \\
& \quad \text{‘The saw cuts the branch.’ (Mi’gmaq, Little 2018: 133)}
\end{align*}
\]

- I suggest that the semantically inanimate subjects in Mi’gmaq is possible because less-volitional or non-volitional external arguments are introduced by vP, avoiding the conflict faced by Blackfoot.

3.2 Obviative subjects

- In Algonquian, when the subject and the object are both third person animate, a grammatical distinction of PROXIMATE and OBVIATIVE\(^3\) must be made.
- Similar to the inanimate subject of a transitive verb, an obviative subject also triggers DSM (previous (11) repeated as (15) below).

\[
\begin{align*}
\text{(15) Delaware DSM: obviative subject} \\
\text{a.} & \quad \text{wa- nohl -okw -w } \quad \text{al} \\
& \quad \text{3- kill -INV -3SG -OBV} \\
& \quad \text{‘He/They<sub>obv</sub> killed him.’}
\end{align*}
\]

\(^3\)The NP marked proximate is more topical argument in discourse and the NP marked obviative is less topical in discourse
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b. maxkwa-l n Dahl -okw -w -Ø
   bear-obv kill -INV -3 -AN,SG
   ‘A bear/Some bears killed him.’ (Goddard 1979: 158-9)

(16) lo·sw -e· -w -al
   burn -3.OBJ -3 -AN,PL
   ‘They/some people burned a/some (obv).’ (Goddard 1979: 174)

Why does DSM arise with animate obvative subjects?

I argue that obvative subjects are introduced in a syntactically lower position than prototypical animate proximate subject, originating in Spec-vP like inanimate subjects.

Treating obvative animates as having distinct properties from proximate animates is not a completely new proposal:

– Muehlbauer (2008) for Plains Cree: proximate third persons are “perspective holders” (i.e. having mental process directed at something) while obvative third persons are not;

– Piriyawiboon (2007) for Ojibwe: obvatives are treately as being syntactically inanimate (motivated by a ubiquitous morphological syncretism, e.g. -al for IN,PL and OBV).

Going back to the obvative DSM examples. Their derivation is schematized in (17):

(17a): when the proximate and the obvative third persons both accessible, PA favors the active goal over the inactive goal (cf. Activity Condition, Chomsky 2001), indexing the obvative subject -al;

(17b): when only one third person argument is accessible, C targets the accessible goal, thus PA indexes the proximate object.

Derivation of obvative DSM

a. definite subject, moved, accessible for C
b. indefinite subject, unmoved, inaccessible for C; but the proximate object is accessible

Sum-up of Delaware DSM:

– Inanimate and obvative subjects are non-prototypical agents, as they are lacking in either animacy, topicality, or both.

– As a result, the non-prototypical agents are generated in a lower position than full-fledged animate agents, which allows them to participate in the same movement-driven differential pattern, parallel to DOM.

4 The formal notion of “high” and “low”

Based on Diesing’s MH, vP seems to be the crucial boundary in explaining differential peripheral agreement marking in Delaware.

– Definiteness-mapping: moved vP-external NP = definite; unmoved vP-internal NP = indefinite;

– Syntactic height to probe’s accessibility:

  * vP-external: “high enough” = accessible
  * vP-internal: “too low” = inaccessible

What about the intransitives whose subjects are introduced by vP due to lacking the VoiceP layer?

The intransitives also show ”no DSM” effect, see (18).

(18) No DSM: intransitive

a. kaalka -w -ak
   dance -3 -AN,PL
   ‘The/some men dance.’ (Goddard 1979: 167)
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b. \( \text{maxké-w-[al]} \)
red \( -3 \) -IN.PL

‘These/some (inan.) are red.’ (Goddard 1979: 170)

**Problem:** why does the vP-interal area (i.e. Spec-vP) become accessible in (18), given the intransitive subjects are overtly indexed by PA?

I propose that Diesing’s “VP” boundary is not a fixed position but rather the **edge of verbal phase** (Chomsky 2000).

Varying by clause type, the VP-internal area of Diesing’s model then respectively corresponds to vP in a transitive clause, as in (19b), but RootP in an intransitive clause, as in (19c).

(19) The crucial boundary of the MH

- **a. Diesing’s model**
  
  \[
  \text{IP} \quad \text{CP} \\
  \quad \text{vP} \\
  \quad \text{VoiceP} \\
  \quad \text{vP} \quad \text{RootP}
  \]

- **b. transitive clause**
  
  \[
  \text{InflP} \quad \text{vP} \quad \text{RootP}
  \]

- **c. intransitive clause**
  
  \[
  \text{InflP} \\
  \text{vP} \quad \text{RootP}
  \]

And the informal notion of “high enough” and “too low” for C-agreement can be formally captured by Chomsky’s **Phase Impenetrability Condition** (PIC).

(20) **Phase Impenetrability Condition** (Chomsky 2000: 108)

In phase \( \alpha \) with head H, the domain of H is not accessible to operations outside \( \alpha \), only H and its edge are accessible to such operations.

How to explain (18) where the intransitive subject is indexed by PA regardless of definiteness?

- because the subject is accessible to the probe on C⁰ since it is at Spec-Root, the edge of the next phase, see (21).

(21) **Derivation of no DSM with intransitives**

\[
\begin{align*}
\text{C}^0 \quad \text{InflP} \\
\quad \text{vP} \quad \text{SUBJ} \\
\quad \text{RootP} \quad \text{Root}
\end{align*}
\]

**5 Conclusion**

- An analysis rooted in Diesing’s Mapping Hypothesis can capture not only Delaware DOM associated with definiteness, but also DSM related to animacy, obviation, and definiteness.

- The nominal’s semantic interpretation with regards to definiteness correlates precisely with its syntactic representation.

- The versatile patterning of Algonquian peripheral agreement, which is able to manifest both DOM and DSM in the same position but with different conditioning, provides us with a unique lens to a unifying treatment of the two phenomena with one syntactic account.

**References**


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