1 Introduction

The Icelandic New Construction (NC) combines characteristics of actives (Maling and Sigurðardóttir 2002) and passives (Eythórsson 2008; Jónsson 2009) and competes with a functionally equivalent Canonical Passive (CP)\(^1\)

Proposal:

- NC is explained and given a typological context if the subject in Spec,\(eP\) is an implicit thematic subject in the sense of Landau (2010), an XP smaller than a pronoun.
- The model of Yang (2002) explains the spread and trajectory of increased NC usage where usage competition involves natural selection.

Core data:

Two usage choices for the function of the passive:

\[(1)\]
\[\text{a. Strákurinn boyt.the\(\text{subject}\) var lammad. (Canonical Passive)}\]
\[\text{b. Það there\(\text{expletive}\) var lammad strákinn boy.the\(\text{object}\). (New Construction)}\]

The boy was beaten

Outline

- NC has a thematic subject which is smaller than a pronoun, (2)
- Predict the spread and trajectory of the NC change throughout the period 1950-2050, including current level of acquisition
- Explain why the change started when it did and not at some other time in history (actuation).

\(^1\)See also: Kjartansson (1991), Barðdal and Molnár (2003), Sigurðsson (2011), Maling et al. (2011), (Sigurðsson 2012 [forthcoming])
2 The New Construction (NC)

2.1 The underlying object stays an object

The underlying object receives structural accusative case in NC:

(2) a. Strákurinn var laminn. (CP)
   boy.NOM was beatenPassive
   ‘The boy was beaten’

   b. Það var lamð strákinn (NC)
   therePassive was beaten boy.ACC
   ‘The boy was beaten’

The theme cannot raise to TP:

(3) *Strandum var strákinn lamð (Intended: NC)
    sometimes was boy.ACC beaten
    ‘The boy was sometimes beaten’

A definiteness effect (DE) restricts the distribution of definite subjects in CP unlike the NC where the theme remains an object:

(4) a. Það var strákur(*inn) lamð (CP)
    there was boy(*the)Subject beaten
    ‘The boy was beaten’

   b. Það var laminn strákur(*inn) (CP)
    there was beaten boy(*the)Subject
    ‘The boy was beaten’

Cannot control (Jónsson 2009):

(5) *Þá var lamð strákinn án þess að PRO hafa brynþorn
    then was beaten boy.Object without it  to PRO have armor
    Intended NC: ‘Then, the boy was beaten without having armor’

2.2 A thematic subject – but not a full pronoun

Something appears in the thematic subject position to allow ACC in NC. No general shift to independent accusative in violation of Burzio’s gen. (Sigðursson 2011):

(6) Það stendur maður/*mann í dyrunum
    there stands man.NOM/*ACC in door.the
    ‘There is a man standing in the door’

The subject position is not saturated; by-phrases are acceptable (to the extent allowed in passives without DP movement) (Jónsson 2009)

(7) Það var skoðat bilinn á bifvélavíkjanum. (NC)
    there was inspected car.Object by car mechanic
    ‘The car was inspected by the car mechanic’
Reduced licensing of depictives (Jónsson 2009):

(8) ??Það er alltaf bordað morgunmat nakinn. (NC)

there is always eaten breakfast Object naked

Intended NC: ‘Breakfast is always eaten naked’

2.3 Typology of passive-like constructions

(9) Analysis of NC: Weak implicit argument in NC restricts, but does not saturate, the subject position (in the sense of Chung and Landusaw 2004):²

We place the NC in a typology of passive-like constructions:

- Different types of silent arguments are independently needed in the syntax (Landau 2010)
- Employing these different types in the analysis of NC accounts for the facts without construction specific machinery

<table>
<thead>
<tr>
<th>Canonical Passive</th>
<th>New Construction (NC)</th>
<th>Impersonal (Polish-type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>vP</td>
<td>vP</td>
<td>vP</td>
</tr>
<tr>
<td>v → VP</td>
<td>v → VP</td>
<td>DP pro</td>
</tr>
<tr>
<td>∃φ</td>
<td>∃φ v → VP</td>
<td>v → VP</td>
</tr>
</tbody>
</table>

- Subject position existentially bound
- [spec, v] is empty
- v bears features restricting the subject position which may be morphologically overt. (See e.g. Legate 2012 on Achenese, Chamorro)
- [spec, v] hosts features restricting the subject position
- XP smaller than a pronoun restricts rather than saturates the subject position
- Accounts for ACC licensing, by-phrases, reduced licensing powers and other NC properties

²We agree with Sigurðsson’s (2011:174) although other details of the analysis are different
3 Syntactic Change as Natural Selection

- NC and CP mean the same thing (are functionally equivalent)
- The brain of a 3-year-old uses natural selection to select the structures most compatible with linguistic input (Yang 2002)

3.1 Explaining Spread

Natural selection:

- Whenever a child attempts to use CP and it is not compatible with NC input, CP gets a usage penalty.
- Whenever a child attempts to use NC and it is not compatible with CP input, NC gets a usage penalty.

**Advantage of NC:** ca. 50% of passives – *definite-theme-initial*. NC system produces sentences like (10) as (11) (excluding contrastive contexts), which is not compatible with CP:

(10) Strákurinn var lamið.
boy.the was beaten
‘The boy was beaten’

(11) Pað var lamið strákinn.
there was beaten boy.the
‘The boy was beaten’

(We converted the IcePaHC corpus from a monolingual CP corpus to a monolingual NC corpus to estimate this value.)

**Advantage of CP:** ca. 5% of passives – *XP aux indefinite-Theme* (theme must stay low in NC). This high subject position is not compatible with NC:

(12) Stundum var strákur lamið.
sometimes was boy beaten
‘Sometimes, a boy was beaten’

Evolutionary advantage:

(13) **Advantage of NC** (labeled $NC_{\text{advantage}}$): If you only speak NC, the advantage of NC is the percentage of passives that are ungrammatical to a purely CP listener. Therefore $NC_{\text{advantage}} \approx 0.5$

(14) **Advantage of CP** (labeled $CP_{\text{advantage}}$): If you only speak CP, the advantage of CP is the percentage of passives that are ungrammatical to a purely NC listener. Therefore $CP_{\text{advantage}} \approx 0.05$

Since the advantage of the New Construction (NC) is larger than the advantage of the Canonical Passive, the NC will inevitably rise to complete acceptance.
3.2 Trajectory of change

Usage probability over generations:

- Syntactic change generally spans generations
- At any given time, each of the two competing systems is used with some probability. In subsequent generations, the probability of using the more advantageous system increases at the expense of the other.

The next generation (if penalties work the same) (see Yang 2002:131):

\[(15)\]
\[NC_{nextgen} = \frac{NC_{advantage} \times NC_{probability}}{NC_{advantage} \times NC_{probability} + CP_{advantage} \times CP_{probability}}\]

\[(16)\]
\[CP_{nextgen} = \frac{CP_{advantage} \times CP_{probability}}{NC_{advantage} \times NC_{probability} + CP_{advantage} \times CP_{probability}}\]

Values we have estimate to predict the trajectory:

\[(17)\]
\[NC_{probability} \approx 0.01 \text{ (NC acquired at 1\% usage rate ca. 1950)}\]
\[CP_{probability} \approx 0.99 \text{ (CP acquired at 99\% usage rate ca. 1950)}\]
\[NC_{advantage} \approx 0.5\]
\[CP_{advantage} \approx 0.05\]

If NC starts at 1\% in ca. 1950 (Maling and Sigurjónsdóttir 2002):

\[(18)\]
\[NC_{1975} = \frac{0.5 \times 0.01}{0.5 \times 0.01 + 0.05 \times 0.99} = 0.09 = 9\%\]

\[(19)\]
\[CP_{1975} = \frac{0.05 \times 0.99}{0.5 \times 0.01 + 0.05 \times 0.99} = 0.91 = 91\%\]
Feel free to try this at home:

- Takes about 2 generations to reach 50% usage
- Should be ca. 60% for current acquirers and sharply rising (consistent with Thráinsson et al. 2010)
- NC predicted to drive CP out in ca. 4 generations, ca. 2025-2050 (in the absence of independent developments, such as a new functional contrast)

Effect of measurement error:

- Varying the advantage level of NC from 0.4 to 0.6 does not change the result much
- See visualization below, where the circle turns triangle when usage is predicted to reach 99%
S-shaped curve:

- Generally, the idea of an S-shaped curve is imposed without a proposal for an underlying mechanism (e.g. Kroch 1989)
- Here, the S-shaped curve is a derived consequence of natural selection
- The brain of a 3-year-old favors analyses that are compatible with the input, and adjusts usage by a small amount in interaction events
3.3 Actuation

- Yang (2002) is not a model of actuation
- Still, by observing other independent changes, we can pinpoint the time when NC gains its advantage
- When we get $NC_{\text{advantage}} > CP_{\text{advantage}}$, conditions for NC spread are met in the input data to children

(21) If we break the advantage of NC (solid) and CP (dotted) down by century, assuming a Modern Icelandic grammar, it appears to remain stable throughout history

\[
\text{NC's longterm advantage}
\]

Why did the NC not start spreading much earlier?

- The assumption of a modern grammar in earlier times is not valid
- Crucially, there was no categorical definiteness effect (DE) until the 20th century
- DE emergence started the change (allowing NC to crash CP)

Last non-superheavy violation of DE in IcePaHC:

(22) rétt eftir að farin var vörufarðin (1902)
    right after that gone was product.trip.the
    ‘... right after they went shopping’
Previous accounts of actuation:

- Some proposals suggest that actuation involves reanalysis based on ambiguous examples
- For previous discussion, see e.g. Maling and Sigurjónsdóttir (2002), Barðdal and Molnár (2003), Eythórsson (2008), Jónsson (2009), Maling et al. (2011)

Why not reanalysis:

- For example, Eythórsson (2008) suggests leakage of the DE
- But: DE rises rather than declines in the period leading up to NC
- Reanalysis is a rather vague notion in the absence of a specific implementation. It does not offer falsifiability like our predictive mechanism for spread

4 Conclusion

- Our syntactic analysis in terms of a thematic subject smaller than a pronoun accounts for the fact using independently motivated machinery
- Assuming natural selection as a basic mechanism of language acquisition derives the spread of NC and predicts the trajectory of change 1950-2050
- The rise of DE was the actuation event for the NC change
References


