

# Subject-initial V3 in adverbial clauses in Icelandic

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## 1. Introduction

Ungrammatical/exceptional subject-initial V3 in a “core V2 language” (Holmberg 2015) like Icelandic:

- (1) a. Jón **hefur ekki** lesið bókina. (Vfin-Adv / V2)  
John has not read book-the  
b. \*Jón **ekki hefur** lesið bókina. (Adv-Vfin / V3)  
John not has read book-the
- (2) a. Ég held að Jón **hafi ekki** lesið bókina. (Vfin-Adv / V2)  
I think that John has not read book-the  
b. ?\*Ég held að Jón **ekki hafi** lesið bókina. (Adv-Vfin / V3)  
I think that John not has read book-the
- (3) a. Jón sagði margt merkilegt en það  
John said many interesting (things) but that  
sem hann **sagði ekki** var enn áhugaverðara. (Vfin-Adv / V2)  
which he said not was more interesting  
b. Jón sagði margt merkilegt en það  
John said many interesting (things) but that  
sem hann **ekki sagði** var enn áhugaverðara. (Adv-Vfin / V3)  
which he not said was more interesting

Why examining subject-initial V3 in adverbial clauses in Icelandic?

- **Central adverbial clauses tend to resist main clause phenomena** such as topicalization in V2-languages such as Icelandic, **while peripheral adverbial clauses tend to permit such phenomenon** (Haegeman's 2012 and much later work; see also Angantýsson and Jonas 2016 for Icelandic).
- The results from the Syntactic Variation Project in Iceland (Thráinsson et al. 2015) indicate that there is a **negative relationship between topicalization and subject-initial V3 constructions**.
- **Given that subject-initial V3 is generally not an option in main clauses and less acceptable in *that*-clauses than in relative clauses, for instance, one might expect that it receives different judgements in different types of adverbial clauses, depending on the embedding level of the adverbial clause in question.**
- Following Frey's (2016, 2020) and Badan and Haegeman's (2023) typology, the V3 construction was investigated in terms of **three types of adverbial clauses**:
  - **central** adverbial clauses (CACs)
  - **peripheral** adverbial clauses (PACs)
  - **non-integrated** adverbial clauses (NICs)

- **We hypothesize that NICs (being the most “matrix-like” type) allow such V3 orders less freely than PACs, and that PACs in turn allow it less freely than CACs.**
- **Results from the acceptability judgement data suggest that the NICs indeed receive lower overall rating than the other two types.** However, **very little difference was observed between CACs and PACs.**
- Should be kept in mind that if **different embedding levels of ACs can result in different interpretations.**
- **Further testings are needed** in order to control for the relevant interpretations.

Organization of the talk:

1. Introduction
2. Background
3. Survey design and method
4. Selected results
5. Conclusions and directions for research

## 2. Background

V2 is the default word order in all types of subject-initial embedded clauses in Icelandic, unlike Swedish, for instance (see, for instance, Holmberg & Platzack 1995; Vikner 1995, Bobaljik and Thráinsson 1998; and much later work):

(4) **Subject-initial V2** in embedded clauses:

- a. Ég spurði hvort Jón hefði ekki séð myndina. (Icelandic)  
 I asked if John had not seen movie-the  
 ‘I asked if John had not seen the movie.’
- b. ?\*Ég spurði hvort Jón ekki hefði séð myndina. (Icelandic)  
 I asked if John not had seen movie-the
- c. \*Jag frågade om Jon hade inte sett filmen. (Swedish)  
 I asked if John had not seen movie-the
- d. Jag frågade om Jon inte hade sett filmen. (Swedish)  
 I asked if John not had seen movie-the  
 ‘I asked if John had not seen the movie.’

This syntactic difference has frequently been **connected with the different degrees of verbal morphological inflection** in these languages.

Even though the finite verb usually precedes the sentence adverb in Icelandic, **the adverb can precede the verb in some embedded clauses** as shown in (5):

(5) **Subject-initial V3** in relative clauses:

- a. Það er ein íslensk mynd sem Haraldur hefur ekki séð.  
 there is one Icelandic movie that Harold has not seen
- b. (?)Það er ein íslensk mynd sem Haraldur ekki hefur séð.  
 there is one Icelandic movie that Harold not has seen
- c. Það er ein íslensk mynd sem hann ekki hefur séð.  
 there is one Icelandic movie that he not has seen  
 ‘There is one Icelandic movie that Harold/he has not seen.’

The word order as illustrated in (5a) is definitely unmarked, but, as can be seen from the remaining examples, the V3 order is also possible. Example (5b), with a proper noun in the subject position, are slightly marked, as opposed to (5c), which has an unstressed pronoun as a subject.

Table 1 presents examples of **Adv-Vfin (V3)** order as well as the (default) **Vfin-Adv (V2)** order for comparison:

|           |  | %Youngest group<br>(197 informants) |      |      | %Oldest group<br>(160 informants) |      |      |
|-----------|--|-------------------------------------|------|------|-----------------------------------|------|------|
|           |  | OK                                  | ?    | *    | OK                                | ?    | *    |
| (6a) (V2) | Ég held að Anna hafi ekki lesið bókina.<br>I think that Anna had not read book-the<br>‘I think that Anna has not read the book.’   | 93.9                                | 3.6  | 2.6  | 98.1                              | 1.9  | 0    |
| (6b) (V3) | Ég held að Stebbi ekki hafi þvegið gólfíð.<br>I think that Stebbi not has washed floor-the<br>‘I think that Steve has not washed the floor.’                                   | 27                                  | 4.6  | 68.4 | 13.4                              | 3.8  | 82.8 |
| (7a) (V2) | Hún spurði hvort þeir hefðu alltaf verið flughræddir.<br>she asked whether they had always been afraid-of-flying<br>‘She asked whether they had always been afraid of flying.’ | 82.1                                | 11.7 | 6.1  | 88.5                              | 7.1  | 4.5  |
| (7b) (V3) | Hún spurði hvort þeir alltaf hefðu verið hræddir við mýs.<br>she asked whether they always had been afraid of mice<br>‘She asked whether they always had been afraid of mice.’ | 18.4                                | 4.6  | 77   | 8.9                               | 51   | 86   |
| (8a) (V2) | Þar var alls konar matur sem henni líkaði ekki.<br>there was all kind food that she liked not<br>‘There was all kinds of food that she didn’t like.’                           | 75                                  | 14.8 | 10.2 | 96.2                              | 2.5  | 1.3  |
| (8b) (V3) | Þar var margt fólk sem hann ekki þekkti.<br>there were many people who he not knew<br>‘There were many people there who he didn’t know.’                                       | 30.8                                | 16.9 | 52.3 | 46.8                              | 24.1 | 29.1 |

**Table 1:** Comparison of V2 and V3 in subject-initial embedded clauses

Most speakers accept the Vfin-Adv order as expected. In the *that*-clause (6) and the indirect question (7), the V3 order receives a relatively higher score among the younger speakers than among the older informants, while we get the reverse situation in relative clauses as (8).

Table 2 presents examples of **topicalization** (non-subject fronting) in *that*-clauses that are complements of different types of matrix predicates (Thráinsson and Angantýsson 2015). According to Hooper and Thompson’s theory, main clause phenomena like topicalization should be most acceptable in complements of predicates of types A, B, and E (therefore, they precede C and D in Table 2):

|      |   | %Youngest group<br>(201 informants) |       |       | %Oldest group<br>(166 informants) |       |       |       |
|------|---|-------------------------------------|-------|-------|-----------------------------------|-------|-------|-------|
|      |   | OK                                  | ?     | *     | OK                                | ?     | *     |       |
| (9)  | Hann sagði <u>að</u> þjóðsönginn gæti hann ekki sungið.<br>He said that national song-the could he not sing<br>'He said that he could not sing the national anthem.'                                      | A                                   | 16.4% | 26.9% | 56.7%                             | 69.1% | 15.8% | 15.2% |
| (10) | Hann hélt <u>að</u> þá mynd hefðum við ekki séð.<br>He thought that that movie had we not seen<br>'He thought that we had not seen that movie.'   | B                                   | 25.4% | 23.9% | 50.7%                             | 67.1% | 18.9% | 14%   |
| (11) | Ég veit þó <u>að</u> til Aþenu hefur hún aldrei komið.<br>I know though that to Athens has she never come<br>'I do however know that she has never been to Athens.'                                       | E                                   | 19.9% | 29.9% | 50.2%                             | 86.7% | 8.5%  | 4.8%  |
| (12) | Hann uppgötvaði <u>að</u> þá bók hafði hann ekki lesið.<br>He discovered that that book had he not read<br>'He discovered that he had not read that book.'  | E                                   | 43.7% | 25.6% | 30.7%                             | 84.7% | 7.4%  | 8%    |
| (13) | Ég efast samt um <u>að</u> þennan mann hafi hún hitt.<br>I doubt however that this man has she met<br>'Nonetheless, I doubt, that she has met this man.'  | C                                   | 28.4% | 21.9% | 49.8%                             | 55.8% | 19%   | 25.2% |
| (14) | Ráðherrann harmar <u>að</u> það mál skuli þeir ekki hafa rætt.<br>The minister regrets that that matter should they not have discussed<br>'The minister regrets that they had not discussed that matter.' | D                                   | 26.6% | 27.6% | 45.7%                             | 40%   | 18.8% | 41.2% |

**Table 2:** Topicalization in *that*-clauses

In general, the youngest speakers do not accept ET as readily as the oldest speakers, and this difference is statistically significant in examples (9–12) (see Thráinsson, Angantýsson, and Viðarsson 2015: 284–5). Among the oldest informants, the acceptability of topicalization depends to a certain extent on the type of the predicate in the matrix clause.

Table 3 shows the judgements of topicalization in an indirect question and XP-fronting in a relative clauses with an overt subject (see also Thráinsson and Angantýsson 2015):

|      |  | %Youngest group<br>(201 informants) |       |       | %Oldest group<br>(166 informants) |      |       |
|------|--|-------------------------------------|-------|-------|-----------------------------------|------|-------|
|      |  | OK                                  | ?     | *     | OK                                | ?    | *     |
| (15) | Ég veit þó ekki hvort til Rómar<br>I know though not whether to Rome<br>hefur hún komið.<br>has she come<br>'I do not however know whether she has<br>been to Rome.' | 4%                                  | 10.9% | 85.1% | 0.6%                              | 7.9% | 91.5% |
| (16) | Þetta er strákurinn sem í París hitti<br>This is the boy who in Paris<br>met ég síðast.<br>I last time<br>'This is the boy who I met in Paris last time.'            | 7.5%                                | 7.5%  | 85.1% | 0                                 | 4.3% | 95.7% |

**Table 3:** Topicalization in indirect questions and relative clauses

In both age groups (and overall), topicalization received a very low overall score in indirect questions (15) and in a relative clause with an overt subject (16). This is consistent with Magnússon's (1990) survey of the acceptability of ET in clauses of this type and not surprising from a comparative perspective (see, for instance, Rizzi 2001; Cinque 2004; Haegeman 2012a; and references there for discussions on intervention effects in clauses of this type).

No examples of topicalization in adverbial clauses were included in the IceDiaSyn questionnaires, but there are several mentions in the literature regarding the (im)possibility of fronting in adverbial clauses:

- Some scholars seem to assume that topicalization is not possible in adverbial clauses (Franco 2009: 146; Hrafnbjargarson and Wiklund 2009: 28).
- Others accept it to some extent (Angantýsson 2011; Magnússon 1990; Rögnvaldsson and Thráinsson 1990: 25).

**Haegeman (2012a, and much previous work) argues that there is a crucial difference between the external and internal syntax of 'central' adverbial clauses (CACs) and 'peripheral' adverbial clauses (PACs):**

- Central adverbial clauses are adjoined to the VP or IP/TP, while peripheral clauses are coordinated with the associate clause.
- In a V2-language such as Icelandic the peripheral ones should allow main clause phenomena, while the central ones should not.

This prediction seems to be borne out (Angantýsson 2011; see also Angantýsson and Jonas 2016):

- (17) CAC *temporal*
- a. \*María sótti tíma á meðan ÞÍNA bók voru þeir að nota  
 Mary attended classes while your book were they using  
 en ekki á meðan MÍN var notuð.  
 but not while mine was used  
 ‘Mary attended courses while they were using your book but not while mine was used.’
- PAC *contrast*
- b. ?Á meðan ÞÍNA bók eru þeir að nota í tveimur námskeiðum  
 while your book are they using in two courses  
 hafa þeir ekki einu sinni pantað MÍNA á bókasafnið.  
 have they not even ordered mine at the library  
 ‘While they are using your book in two courses, they haven’t even ordered mine.’

Since the subject-initial V3 is almost impossible in main clauses and quite hard to get in *that*-clauses, we **hypothesize that this word order is most acceptable in central adverbial clauses, less so in peripheral adverbial clauses, and least so in non-integrated avberbial clauses**. The following judgements are based on Antantýsson’s native intuition, but, importantly though, it should be kept in mind that many speakers dislike subject-initial V3 orders in general (see Angantýsson & Jedrzejowski 2023):

- (18) a. Jón spyr og spyr [CP af því að hann ekki veit].  
 Jón ask.3SG and ask.3SG because he NEG know.3SG  
 ‘Jón asks and asks because he doesn’t know.’
- b. ?Jón hlýtur að vita allt um málið, [CP af því að hann  
 Jón must.3SG know.INF everything about case.ACC because he  
 ekki spyr].  
 NEG ask.3SG  
 ‘Jón must know everything about the case, since he doesn’t ask.’
- c. ??Ætlaðu einn í bíó [CP af því að þú ekki spurðir hvort  
 go.2SG alone to cinema.ACC because you NEG ask.2SG whether  
 ég vildi koma með].  
 I want.1SG.PST come.INF along.  
 Intended: ‘Are you going to the cinema alone, because you didn’t ask whether I wanted to come along.’

Interestingly, the prediction that this order should be hard to get in non-integrated adverbial clauses as (18c) is borne out. The peripheral evidential causal clause (EC) in (18b) is somewhat marked while the central eventuality related causal clause (18a) is fine. In section 5, we will come back to the problem of testing for different interpretations in an online survey like the one presented here.

If we are on the right track, we might be **developing an additional diagnosis tool for the subcategorization of adverbial clauses** in a core V2 language like Icelandic. Obviously, however, further testing is needed, so let us now consider the results from the present study.

#### **Interim conclusion**

In addition to the V3 word order, topicalization in subordinate clauses in Icelandic was examined in the Syntactic Variation Project in Iceland (Thráinsson et al. 2015). It was observed among other things that topicalization received better judgement in *that*-clauses clauses than in relative clauses. V3 word order, on the other hand, received better judgements in relative clauses than in *that*-clauses clauses. Furthermore, participants' age seems to have effect on their judgement in V3 order in embedded clauses in Icelandic. Younger speakers seem to be more likely to accept V3 word order in *that*-clauses while in other types of embedded clauses, it is the older speakers who are more likely to consider them to be normal. Based on these results, one might expect that there is some negative correlation between topicalization and the V3 word order.

### **3. Survey design and method**

An acceptability judgement test was administered for subject-initial V2/V3 in different types of adverbial clauses in Icelandic, in terms of both semantic categories and syntactic categories in Badan and Haegeman's (2022) typology.

The semantic category consisted of 6 levels:

- causal clause
- concessive clause
- conditional clause
- purpose clause
- resultative clause
- temporal clause

The syntactic category consisted of 3 levels:

- central adverbial clause (CAC)
- peripheral adverbial clause (PAC)
- non-integrated adverbial clause (NIC)

Non-integrated clauses were only tested in causal clauses in this study. Thus, six test sentences were created for six conditions (V2 and V3 for each pair):

- two with central causal clauses (19)
- two with peripheral AC (20)
- two with non-integrated AC (21)

Examples of test sentences (see further appendix 1):

- (19) Central causal clauses
- a. V2
- Dóri litli þóttist vera veikur vegna þess að hann vildi ekki koma  
Dóri little pretend.PST be sick because he want.PST NEG come
- með í bátsferð.  
with to boat trip.
- ‘Little Dóri pretended to be sick because he did not want to come along to the boat trip.’
- b. V3
- Við þurfum að kaupa nýjan mat handa kettinum okkar af því að hann  
We need to buy new food for cat-the.M our because he  
ekki borðar fisk.  
NEG eat.3SG fish.
- ‘We need to buy new food for our cat because he doesn’t eat fish.’
- (20) Peripheral causal clauses
- a. V2
- Kötturinn okkar er líklega veikur fyrst hann hefur ekki klárað  
cat-the.M our be.3SG likely sick.M since he have.3SG NEG finish.PP  
matinn sinn í nokkra daga.  
food its in few.PL dag.PL.
- ‘Our cat is likely sick since he has not finished his food last few days.’
- b. V3
- Stefán hlýtur að vera grænmetisæta vegna þess að hann aldrei vill borða  
Stefán must to be vegetarian because he never want eat.INF  
kjöt.  
meat.
- ‘Stefán must be vegetarian because he never wants to eat meat.’
- (21) Non-integrated causal clauses
- a. V2
- Ætlarðu einn í bíó, af því að þú spurðir ekki hvort ég vildi  
go.2SG alone to cinema, because you ask.2SG.PST NEG wether I want.PST  
koma með.  
come with.
- ‘Are you going to the cinema alone, because you didn’t ask whether I wanted to come along?’
- b. V3
- Hvernig ertu fjárhagslega, af því að ég ekki get borgað leigu í þessum  
how you.2SG financially, because I NEG can pay.PP rent in this.M  
mánuði.  
month.M
- ‘How are you doing financially, because I can’t pay rent this month.’



Based on the previous discussion, one might expect the following:

- Sentences with the unmarked V2 order should get better scores than the marked V3 order.
- V3 in non-integrated adverbial clauses such as (21b) should get worse overall scores than the other two types.
- V3 in central adverbial clauses such as (19b) should get better scores than sentences with peripheral adverbial clauses like (20b).

A total of 120 sentences therefore were tested in the study.

- Half of them form minimal pairs with the other half.
- These 120 test sentences were further divided into **six versions**, each of which contains 20 sentences.
- Filler sentences, sentences which are not part of the factorial design in the study, were added to each version of the questionnaire.

The data was collected through an **online survey** where participants evaluate sentences that contain grammatical variables. Statistical analyses were performed to see whether there is any correlation between the variables and whether the differences between them are statistically significant.

- The participants were chosen at random and the only condition was that the participant had to have Icelandic as their first language.
- It was recommended that people with a university education in Icelandic or linguistics not participate.
- The participation was completely anonymous.
- In the end, a total of 570 people took part in the survey, of which 407 completed the survey.
- The main method was to ask the participants to rate sentences according to how natural they think the sentences are, on a 7-point Likert scale from -3 up to +3, where 0 is the neutral point.
- The scale in the survey was extreme-labeled, meaning that only the lowest and highest points were given a label, i.e. -3 = “Unacceptable (impossible) sentence. I could not say this at all.” and +3 = “A completely normal sentence. I can easily say this”.

The survey was divided into three parts:

- 1) Instructions
- 2) Background questions (age, gender, regional origin and education).
- 3) 60 sentences to be judged, of which 20 test sentences and 40 filler sentences.

An effort was made to filter out answers from participants who might have rated the sentences randomly.

- This was done by checking whether the participants give a negative rating, i.e. scores lower than 0, for four filler sentences that are completely normal.
- If a participant has given negative ratings for all four of these sentences, the participant will be eliminated from further analysis.
- No such responses were found.

#### 4. Selected results

A total of 407 people participated in the survey and each of them judged 20 test sentences.

| pragmatic | response.mean | response.median | zscore.mean | zscore.median |
|-----------|---------------|-----------------|-------------|---------------|
| <b>V2</b> |               |                 |             |               |
| CAC       | 5.24          | 6               | 0.462       | 0.782         |
| PAC       | 4.98          | 6               | 0.361       | 0.697         |
| NON-IC    | 3.25          | 3               | -0.327      | -0.481        |
| <b>V3</b> |               |                 |             |               |
| CAC       | 2.64          | 1               | -0.566      | -0.934        |
| PAC       | 2.48          | 1               | -0.638      | -0.954        |
| NON-IC    | 2.29          | 1               | -0.735      | -0.954        |

**Table 4:** Overview of V2/V3 orders in Icelandic adverbial clauses

Some points from *Table 4*:

- Sentences with V2 generally received more positive judgements from the participants than sentences with V3.
- Sentences with the syntactic categories CAC and PAC with traditional word order (V2) both received a median score of 6 and an average score of around 5.
- Non-integrated adverbial clauses (NICs) with V2 order received a negative median score of 3 which corresponds to -1 in the survey.
- All categories with V3 construction received negative scores in both mean and median, and the median for all categories is 1, which is the lowest score.
- Standardized Z-scores tell a similar story, all categories with the V3 construction received negative scores at both mean and median.
- Non-integrated adverbial clauses, both with traditional word order (V2) and V3 word order, received negative scores.

Looking at the percentage of participants' judgements which gave positive, neutral and negative answers, most participants seem to have a clear tendency to choose between positive (>0) and negative (<0) answers and not neutral (0).

|        | Yes   | ?     | No    |
|--------|-------|-------|-------|
| CAC    | 0.234 | 0.042 | 0.724 |
| PAC    | 0.205 | 0.037 | 0.757 |
| NON-IC | 0.150 | 0.064 | 0.786 |

**Table 5:** Proportional results on positive and negative judgements **on the V3 orders** according to the syntactic types.

*Table 5* shows that the majority, or over 70% of the participants, gave negative answers to sentences with V3 word order in all three syntactic categories. Slightly more people gave positive answers to central adverbial clauses (23.4%) than to peripheral adverbial sentences (20.5%). Non-integrated adverbial clauses tested received 15% positive responses from the participants. Even though the difference is quite small, this result is consistent with our

hypothesis, that central adverbial clauses would get better judgement than peripheral adverbial clauses and that non-integrated clauses would get worse judgement than the other two types of ACs in Icelandic.

### Connection with age

The relationship between the age groups can be seen in Table 5, both for sentences with V2 and V3 word order.

| Age         | response.mean | response.median | zscore.mean | zscore.median |
|-------------|---------------|-----------------|-------------|---------------|
| <b>V2</b>   |               |                 |             |               |
| 16–29       | 5.39          | 6               | 0.459       | 0.788         |
| 30–39       | 5.11          | 6               | 0.365       | 0.713         |
| 40–49       | 4.90          | 6               | 0.307       | 0.587         |
| 50–59       | 4.77          | 6               | 0.281       | 0.599         |
| 60 or older | 4.80          | 6               | 0.341       | 0.698         |
| <b>V3</b>   |               |                 |             |               |
| 16–29       | 2.34          | 1               | -0.750      | -1.015        |
| 30–39       | 2.38          | 1               | -0.712      | -1.012        |
| 40–49       | 2.63          | 1               | -0.602      | -0.925        |
| 50–59       | 2.50          | 1               | -0.602      | -0.944        |
| 60 or older | 2.60          | 1               | -0.562      | -0.901        |

**Table 6:** Results on sentences with both V2 and V3 constructions by age groups

Some points from *Table 6*:

- The difference between the age groups is not great.
- However, sentences with V2 received a higher score in the younger age groups than in the older age groups, and the reverse is the case for sentences with V3 construction, i.e. the older age groups gave higher rating than the younger age groups.
- This difference is consistent with the results from the Variation Project discussed in section 2.

## 5. Conclusions and directions for research

First of all, the results of the survey show that **sentences with V2 construction usually received a more positive evaluation from the participants than sentences with V3 construction**, either for sentences in different semantic categories or in different syntactic categories. When looking only at sentences with the V3 construction, there seems to be a difference in the participants' evaluations between different semantic categories and syntactic categories, although the difference is not large and is only statistically significant between certain categories. **In the syntactic categories, the difference seems to be only significant between central and non-integrated adverbial clauses.** There does not appear to be a significant difference between central and peripheral adverbial clauses, as was expected according to the theories mentioned in section 2.

**Non-integrated adverbial clauses were generally given negative scores by participants, even for sentences with traditional V2 word order.** In different semantic categories, the difference was again not great, but statistically significant between many of them. Purpose and concessive clauses seem to have received better ratings from the participants, while result clauses received worse ratings than other types of adverbial

sentences. **In terms of social factors, only age group and residence seem to show statistically significant differences between the different groups for adverbial sentences with V3 word order.** Participants from the older age groups (40 years and older) gave a slightly higher score than those from the younger age groups (between 16 and 39 years). However, there is again little or no difference between the older age groups and between the younger age groups.

Despite these results, **a quantitative research method such as the one applied in this study has its limitations**, especially in grammatical judgement tests. In these tests, **the data only shows the scores each participant gives to a certain sentence, but it is impossible to know how the participants interpret the sentences.** A participant could for example give negative scores to a sentence because of the style or use of specific wordings and such other than the grammatical variables that were being tested in the survey design. Thus, qualitative research methods, such as interviews, could possibly resolve these issues. **Some kind of individual “training” of the subjects might even be necessary.**

Finally, **the survey was designed so that each participant evaluated 20 test sentences, so that the data actually contains repeated measures and the data points are therefore not independent. This could affect the results.** It might be useful to use mixed models to analyze the results from the survey data, where more explanatory variables can be taken into account as fixed effects and individual variation can also be accounted for as random effects. But due to the size of the data and number of the variables, this will probably be better looked into in larger projects.

## References

- Angantýsson, Á. (2007). Verb-third in embedded clauses in Icelandic. *Studia Linguistica*, 61(3), 237-260. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9582.2007.00134.x> doi: <https://doi.org/10.1111/j.1467-9582.2007.00134.x>
- Angantýsson, Á. (2011). *The syntax of embedded clauses in icelandic and related languages*. Hugvísindastofnun Háskóla Íslands.
- Angantýsson, Á., & Jonas, D. (2016). On the syntax of adverbial clauses in icelandic. *Working Papers in Scandinavian Syntax*, 96, 126–139.
- Angantýsson, Á., Þráinsson, H., & van der Feest Viðarsson, H. F. (2015). Kjarnafærsla, stílfærsla, leppsetningar og frumlagseyða. In *Tilbrigði í íslenskri setningagerð* (Vol. II, p. 275–297). Ísland: Háskólaútgáfan.
- Angantýsson, Ásgrímur & Łukasz Jędrzejowski. (2023). ‘Layers of subordinate clauses. A view from causal *af-því-að*-clauses in Icelandic’. In: Łukasz Jędrzejowski & Constanze Fleczonek (eds.), *Micro- and Macro-variation of Causal Clauses: Synchronic and diachronic insights* (Studies in Language Companion Series), pp. 184–220. Amsterdam: John Benjamins. <https://benjamins.com/catalog/slcs.231.07ang>
- Badan, L., & Haegeman, L. (2022, 01). The syntax of peripheral adverbial clauses. *Journal of Linguistics*, 58(4), 697–738. Retrieved from <http://dx.doi.org/10.1017/s0022226721000463> doi: 10.1017/s0022226721000463
- Frey, Werner. (2016). About some correlations between formal and interpretative properties of causal clauses. In: Ingo Reich & Augustin Speyer (eds.), *Co- and Subordination in German and Other Languages* [Linguistische Berichte Sonderheft 21], 153–179. Hamburg: Buske.
- Frey, W. (2020). On the categorical status of different dependent clauses. Ms., ZAS Leibniz-Centre General Linguistics, Berlin.
- Goodall, G. (2021). Sentence acceptability experiments: What, how, and why. In G. Goodall

- (Ed.), *The Cambridge handbook of experimental syntax* (p. 7–38). Cambridge University Press. doi: 10.1017/9781108569620.002
- Haegeman, L. (2003). Conditional clauses: External and internal syntax. *Mind & Language*, 18(4), 317–339. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/1468-0017.00230> doi: <https://doi.org/10.1111/1468-0017.00230>
- Haegeman, L. (2010). The internal syntax of adverbial clauses. *Lingua*, 120(3), 628–648. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0024384109000606> (Exploring the Left Periphery) doi: <https://doi.org/10.1016/j.lingua.2008.07.007>
- Haegeman, L. (2012, 10). Main Clause Phenomena and Adverbial Clauses. In *Adverbial Clauses, Main Clause Phenomena, and the Composition of the Left Periphery: The Cartography of Syntactic Structures, Volume 8* (pp. 149–194). Oxford University Press. Retrieved from <https://doi.org/10.1093/acprof:oso/9780199858774.003.0004> doi: 10.1093/acprof:oso/9780199858774.003.0004
- Holmberg, Anders. 2015. ‘Verb second’. In: Tibor Kiss & Artemis Alexiadou (eds.), *Syntax — Theory and Analysis. An International Handbook III*, 242–283. Berlin: Mouton de Gruyter.
- Krifka, Manfred. 2019. Commitments and beyond. *Theoretical Linguistics*, vol. 45:1-2, 73–91.
- Leiner, D. J. (2019). SoSci Survey [Computer software]. <https://www.soscisurvey.de>.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology*.
- R Core Team. (2022). R: A language and environment for statistical computing [Computer software manual]. Vienna, Austria. Retrieved from <https://www.R-project.org/>
- Schütze, C., & Sprouse, J. (2013, 02). Judgment data. In (p. 27–50). doi: 10.1017/cbo9781139013734.004
- Sprouse, J. (2018). Introduction to experimental syntax methods. Retrieved from <https://www.jonsprouse.com/courses/experimental-syntax/> (Accessed on april 17, 2023)
- Sweetser, E. 1990. *From Etymology to Pragmatics. Metaphorical and Cultural Aspects of Semantic Structure* [Cambridge Studies in Linguistics 54]. Cambridge: Cambridge University Press.
- Thráinsson, H. & Á. Angantýsson. 2015. Orðaröð í aukasetningum [‘Word order in embedded clauses’]. In: Thráinsson, Höskuldur, Ásgrímur Angantýsson and Einar Freyr Sigurðsson (eds.), *Tilbrigði í íslenskri setningagerð. II. Helstu niðurstöður. Tölfræðilegt yfirlit* [‘Variation in Icelandic Syntax. II. Main Results. Statistical Overview’], 299–330. Reykjavík: Málvísindastofnun Háskóla Íslands.
- Thráinsson, H., Angantýsson, Á., & Sigurðsson, E. F. (2015). *Tilbrigði í íslenskri setningagerð. II. Helstu niðurstöður. Tölfræðilegt yfirlit. Tilbrigði í íslenskri setningagerð, 2.*
- Wood, Rebecca Louise. 2016. Investigating the Syntax of Speech Acts: Embedding Illocutionary Force. Doctoral dissertation, University of York, York.

## Appendix I: List of test sentences

|  |                    |      |        |
|--|--------------------|------|--------|
| Dóri litli vill vera grænmetisæta vegna þess að hann vill ekki sjá dýr send í sláturshús.                        | causal.CAC.V2      | 4.72 | 0.302  |
| Dóri litli þóttist vera veikur vegna þess að hann vildi ekki koma með í bátsferð.                                | causal.CAC.V2      | 6.18 | 0.760  |
| Hún er þreytt vegna þess að hún gat ekki sofnað alla nóttina.  | causal.CAC.V2      | 3.27 | -0.288 |
| Hún þarf að eyða nóttinni í gistiheimili vegna þess að storminn lægir ekki fyrr en eftir morgundaginn.           | causal.CAC.V2      | 3.83 | -0.038 |
| Systir mín bað mig um hjálp með verkefnið sitt af því að hún kundi ekki mjög vel stærðfræði.                     | causal.CAC.V2      | 3.75 | -0.167 |
| Við þurfum að kaupa nýjan mat handa kettinum okkar af því að hann borðar ekki fisk.                              | causal.CAC.V2      | 5.34 | 0.526  |
| Dóri litli vill vera grænmetisæta vegna þess að hann ekki vill sjá dýr send í sláturshús.                        | causal.CAC.V3      | 3.18 | -0.403 |
| Dóri litli þóttist vera veikur vegna þess að hann ekki vildi koma með í bátsferð.                                | causal.CAC.V3      | 3.46 | -0.217 |
| Hún er þreytt vegna þess að hún ekki gat sofnað alla nóttina.  | causal.CAC.V3      | 2.69 | -0.496 |
| Hún þarf að eyða nóttinni í gistiheimili vegna þess að storminn ekki lægir fyrr en eftir morgundaginn.           | causal.CAC.V3      | 1.52 | -0.982 |
| Systir mín bað mig um hjálp með verkefnið sitt af því að hún ekki kundi mjög vel stærðfræði.                     | causal.CAC.V3      | 1.78 | -0.941 |
| Við þurfum að kaupa nýjan mat handa kettinum okkar af því að hann ekki borðar fisk.                              | causal.CAC.V3      | 3.02 | -0.485 |
| Af hverju ættum við að fara á fiskveitingastað, af því að hann borðar aldrei fisk.                               | causal.NON-IC.V2   | 2.00 | -0.793 |
| Hvað ertu að gera í kvöld, af því að ég er ekki með neitt plan.  | causal.NON-IC.V2   | 4.06 | 0.003  |
| Hvernig er veðrið um helgina, af því að ég vil ekki eyða helgafríinu í að horfa á Netflix.                       | causal.NON-IC.V2   | 3.74 | -0.032 |
| Hvernig ertu fjárhagslega, af því að ég get ekki borgað leigu í þessum mánuði.                                   | causal.NON-IC.V2   | 3.31 | -0.311 |
| Veist þú hvort það er eitthvað gott í sýningu í leikhúsunum, af því að ég vil ekki keyra til suðurs til einskis. | causal.NON-IC.V2   | 2.46 | -0.701 |
| Ætlaðu einn í bíó, af því að þú spurðir ekki hvort ég vildi koma með.  | causal.NON-IC.V2   | 4.00 | -0.102 |
| Af hverju ættum við að fara á fiskveitingastað, af því að hann aldrei borðar fisk.                               | causal.NON-IC.V3   | 1.64 | -0.942 |
| Hvað ertu að gera í kvöld, af því að ég ekki er með neitt plan.  | causal.NON-IC.V3   | 3.46 | -0.299 |
| Hvernig er veðrið um helgina, af því að ég ekki vil eyða helgafríinu í að horfa á Netflix.                       | causal.NON-IC.V3   | 2.46 | -0.620 |
| Hvernig ertu fjárhagslega, af því að ég ekki get borgað leigu í þessum mánuði.                                   | causal.NON-IC.V3   | 2.68 | -0.624 |
| Veist þú hvort það er eitthvað gott í sýningu í leikhúsunum, af því að ég ekki vil keyra til suðurs til einskis. | causal.NON-IC.V3   | 1.94 | -0.864 |
| Ætlaðu einn í bíó, af því að þú ekki spurðir hvort ég vildi koma með.  | causal.NON-IC.V3   | 1.52 | -1.076 |
| Haraldur hefur líklega slitið öllu sambandi við Þóru því hann vill ekki tala við hana.                           | causal.PAC.V2      | 5.96 | 0.745  |
| Hún hefur líklega kynnst nýjum kærasta af því að hún kom aldrei til baka.  | causal.PAC.V2      | 4.30 | 0.165  |
| Kötturinn okkar er líklega veikur fyrst hann hefur ekki klárað matinn sinn í nokkra daga.                        | causal.PAC.V2      | 6.18 | 0.770  |
| Selma hlýtur að vera í uppnámi fyrst hún svaraði ekki símanum sínum allan daginn.                                | causal.PAC.V2      | 5.19 | 0.463  |
| Stefán hlýtur að vera grænmetisæta vegna þess að hann vill aldrei borða kjöt.                                    | causal.PAC.V2      | 6.03 | 0.776  |
| Stefán hlýtur að vera lofthráddur af því að hann hefur aldrei farið í flugvél.                                   | causal.PAC.V2      | 5.65 | 0.594  |
| Haraldur hefur líklega slitið öllu sambandi við Þóru því hann ekki vill tala við hana.                           | causal.PAC.V3      | 2.93 | -0.403 |
| Hún hefur líklega kynnst nýjum kærasta af því að hún aldrei kom til baka.  | causal.PAC.V3      | 2.11 | -0.748 |
| Kötturinn okkar er líklega veikur fyrst hann ekki hefur klárað matinn sinn í nokkra daga.                        | causal.PAC.V3      | 3.06 | -0.389 |
| Selma hlýtur að vera í uppnámi fyrst hún ekki svaraði símanum sínum allan daginn.                                | causal.PAC.V3      | 2.84 | -0.509 |
| Stefán hlýtur að vera grænmetisæta vegna þess að hann aldrei vill borða kjöt.                                    | causal.PAC.V3      | 1.86 | -0.917 |
| Stefán hlýtur að vera lofthráddur af því að hann aldrei hefur farið í flugvél.                                   | causal.PAC.V3      | 2.75 | -0.540 |
| Anna getur vel lesið skiparnir í kóðun þótt hún kundi ekki að kóða.  | concessive.PAC.V2  | 5.50 | 0.664  |
| Haraldur keyrði norður þrátt fyrir að bíllinn hans fengi ekki skoðun.  | concessive.PAC.V2  | 6.22 | 0.888  |
| Hún ætlar að fara með fjölskylduna á flugvöllinn þó að hún verði ekki með í ferðalaginu.                         | concessive.PAC.V2  | 5.27 | 0.395  |
| Mér fannst önnur bókin hennar mjög góð þó að ég næði ekki að klára þá fyrstu.                                    | concessive.PAC.V2  | 5.97 | 0.761  |
| Snorri náði að klára fiskisúpuna þótt honum líki venjulega ekki fiskur.  | concessive.PAC.V2  | 5.40 | 0.490  |
| Systir mín ætlar að fara í fjallgöngu þótt hún hafi ekki hreyft sig neitt að ráði í langan tíma.                 | concessive.PAC.V2  | 6.38 | 0.922  |
| Anna getur vel lesið skiparnir í kóðun þótt hún ekki kundi að kóða.  | concessive.PAC.V3  | 3.65 | -0.140 |
| Haraldur keyrði norður þrátt fyrir að bíllinn hans ekki fengi skoðun.  | concessive.PAC.V3  | 2.88 | -0.517 |
| Hún ætlar að fara með fjölskylduna á flugvöllinn þó að hún ekki verði með í ferðalaginu.                         | concessive.PAC.V3  | 1.91 | -0.908 |
| Mér fannst önnur bókin hennar mjög góð þó að ég ekki næði að klára þá fyrstu.                                    | concessive.PAC.V3  | 3.19 | -0.237 |
| Snorri náði að klára fiskisúpuna þótt honum líki venjulega fiskur.   | concessive.PAC.V3  | 2.09 | -0.809 |
| Systir mín ætlar að fara í fjallgöngu þótt hún ekki hafi hreyft sig neitt að ráði í langan tíma.                 | concessive.PAC.V3  | 3.20 | -0.399 |
| Dóttir hennar grætur og grætur ef hún fær ekki að koma með að labba með hundinn.                                 | conditional.CAC.V2 | 4.49 | 0.117  |
| Hann kemur bara á morgun ef hann hefur ekki tíma til þess í dag.   | conditional.CAC.V2 | 6.18 | 0.862  |
| Hún kemur örugglega í bíó í kvöld nema henni takist ekki að ná í miða.   | conditional.CAC.V2 | 5.48 | 0.549  |
| Hún ætlar í fjallgöngu un helgina nema veðrið verði ekki gott.   | conditional.CAC.V2 | 4.31 | 0.141  |
| Mótmælin munu halda áfram ef ríkisstjórnin kemur ekki með betra boð.   | conditional.CAC.V2 | 6.59 | 0.924  |
| Það er ekki hægt að taka ferðamenn í köfunarferð ef þeir kunna ekki að synda.                                    | conditional.CAC.V2 | 5.78 | 0.671  |
| Dóttir hennar grætur og grætur ef hún ekki fær að koma með að labba með hundinn.                                 | conditional.CAC.V3 | 2.85 | -0.452 |
| Hann kemur bara á morgun ef hann ekki hefur tíma til þess í dag.   | conditional.CAC.V3 | 3.23 | -0.362 |
| Hún kemur örugglega í bíó í kvöld nema henni ekki takist að ná í miða.   | conditional.CAC.V3 | 2.32 | -0.734 |
| Hún ætlar í fjallgöngu un helgina nema veðrið ekki verði gott.   | conditional.CAC.V3 | 1.72 | -0.915 |
| Mótmælin munu halda áfram ef ríkisstjórnin ekki kemur með betra boð.   | conditional.CAC.V3 | 2.86 | -0.463 |
| Það er ekki hægt að taka ferðamenn í köfunarferð ef þeir ekki kunna að synda.                                    | conditional.CAC.V3 | 2.90 | -0.387 |
| Af hverju fer hann í söngvakeppni ef hann kann ekki að syngja?   | conditional.PAC.V2 | 6.03 | 0.757  |
| Hann fékk líklega nýja vinnu ef hann kemur ekki lengur á kaffihús daglega.                                       | conditional.PAC.V2 | 2.46 | -0.702 |
| Hann kann líklega ekki að synda ef hann fer aldrei í sund.   | conditional.PAC.V2 | 4.51 | 0.214  |
| Hann verður líklega heima með börnunum sínum ef hann kemur ekki í bíó í kvöld.                                   | conditional.PAC.V2 | 5.29 | 0.444  |

(continued)

| TestSent  | Coding             | Mean response | Mean z-scores |
|---|--------------------|---------------|---------------|
| Hann þarf líklega á hjálp að halda ef hann hættir ekki að reykja bráðum.  | conditional.PAC.V2 | 5.71          | 0.734         |
| Hún hlýtur að vera veik ef hún kemur ekki á æfingu í dag.   | conditional.PAC.V2 | 6.01          | 0.677         |
| Af hverju fer hann í söngvakeppni ef hann ekki kann að syngja?  | conditional.PAC.V3 | 3.27          | -0.229        |
| Hann fékk líklega nýja vinnu ef hann ekki kemur lengur á kaffihús daglega.  | conditional.PAC.V3 | 1.46          | -1.059        |
| Hann kann líklega ekki að synda ef hann aldrei fer í sund.  | conditional.PAC.V3 | 3.02          | -0.460        |
| Hann verður líklega heima með börnunum sínum ef hann ekki kemur í bíó í kvöld.                                      | conditional.PAC.V3 | 2.74          | -0.590        |
| Hann þarf líklega á hjálp að halda ef hann ekki hættir að reykja bráðum.  | conditional.PAC.V3 | 3.20          | -0.346        |
| Hún hlýtur að vera veik ef hún ekki kemur á æfingu í dag.   | conditional.PAC.V3 | 2.66          | -0.567        |
| Andri ætlar að koma heim fyrir helgina svo að hann missi ekki af afmælisveislu dóttur sinnar.                       | purpose.CAC.V2     | 6.26          | 0.950         |
| Hann þantaði pizzu heim þannig að hann þyrfti ekki að fara út í þessu veðri.  | purpose.CAC.V2     | 4.89          | 0.241         |
| Haraldur ætlar að stilla vekjaralukkuna svo að hann vakni ekki of seint fyrir atvinnuviðtalið.                      | purpose.CAC.V2     | 6.28          | 0.904         |
| Hún keypti eigin gönguskiði þannig að hún þurfi ekki að bíða í röð til að leigja þau.                               | purpose.CAC.V2     | 4.47          | 0.140         |
| Við ætlum að bjóða Haraldi heim til okkar þannig að hann verði ekki einn um jólin.                                  | purpose.CAC.V2     | 5.97          | 0.750         |
| Við þurfum að takmarka matarneysluna hjá kettinum okkar svo að hann verði ekki of feitur.                           | purpose.CAC.V2     | 5.46          | 0.585         |
| Andri ætlar að koma heim fyrir helgina svo að hann missi af afmælisveislu dóttur sinnar.                            | purpose.CAC.V3     | 2.77          | -0.487        |
| Hann þantaði pizzu heim þannig að hann ekki þyrfti að fara út í þessu veðri.  | purpose.CAC.V3     | 2.03          | -0.830        |
| Haraldur ætlar að stilla vekjaralukkuna svo að hann ekki vakni of seint fyrir atvinnuviðtalið.                      | purpose.CAC.V3     | 1.99          | -0.889        |
| Hún keypti eigin gönguskiði þannig að hún ekki þurfi að bíða í röð til að leigja þau.                               | purpose.CAC.V3     | 2.22          | -0.740        |
| Við ætlum að bjóða Haraldi heim til okkar þannig að hann ekki verði einn um jólin.                                  | purpose.CAC.V3     | 3.46          | -0.174        |
| Við þurfum að takmarka matarneysluna hjá kettinum okkar svo að hann verði ekki of feitur.                           | purpose.CAC.V3     | 3.85          | -0.106        |
| Hann gerði bananabraud með gömlum bönunum þannig að hann þyrfti ekki að henda þeim.                                 | result.PAC.V2      | 4.22          | 0.029         |
| Hún fékk far hjá mannum sínum þannig að hún kom ekki of seint í vinnuna.  | result.PAC.V2      | 4.94          | 0.279         |
| Stéfan fékk matareitrun eftir að hafa borðað kjúkling þannig að hann vill aldrei borða svoléiðis mat aftur.         | result.PAC.V2      | 4.99          | 0.418         |
| Við festum hilluna betur svo að hún datt ekki niður aftur.  | result.PAC.V2      | 2.00          | -0.797        |
| Ég faldi bókina svo að hann gat ekki lesið hana.  | result.PAC.V2      | 4.11          | 0.010         |
| Ég missti samband við menntaskólavini mína svo að ég sá ekki nema suma þeirra aftur.                                | result.PAC.V2      | 4.28          | 0.120         |
| Hann gerði bananabraud með gömlum bönunum þannig að hann ekki þyrfti að henda þeim.                                 | result.PAC.V3      | 2.27          | -0.704        |
| Hún keypti eigin gönguskiði þannig að hún ekki kom of seint í vinnuna.  | result.PAC.V3      | 2.20          | -0.789        |
| Stéfan fékk matareitrun eftir að hafa borðað kjúkling þannig að hann aldrei vill borða svoléiðis mat aftur.         | result.PAC.V3      | 1.93          | -0.811        |
| Við festum hilluna betur svo að hún ekki datt niður aftur.  | result.PAC.V3      | 1.43          | -1.030        |
| Ég faldi bókina svo að hann ekki gat lesið hana.  | result.PAC.V3      | 2.52          | -0.667        |
| Ég missti samband við menntaskólavini mína svo að ég ekki sá nema suma þeirra aftur.                                | result.PAC.V3      | 2.18          | -0.845        |
| Börnin mín voru ósátt þegar þau fengu ekki öskudagsbúninga í ár.  | temporal.CAC.V2    | 5.74          | 0.674         |
| Hann gafst upp á að keyra eftir að hann stóðst ekki bílprófið í fimmta skipti.                                      | temporal.CAC.V2    | 5.48          | 0.555         |
| Hún tók kökuna úr ofninum þegar hún var ekki fullbökuð ennþá.   | temporal.CAC.V2    | 3.29          | -0.260        |
| Kötturinn minn mjálmur og mjálmur þegar hann fær ekki nóg að borða á morgnana.                                      | temporal.CAC.V2    | 6.32          | 0.823         |
| Sindri fékk að vinna hjá þabba sínum meðan hann var ekki með fasta vinnu.   | temporal.CAC.V2    | 6.24          | 0.821         |
| Unga parið átti erfitt með að ná endum saman meðan þau fengu ekki atvinnuleysisbætur.                               | temporal.CAC.V2    | 5.70          | 0.670         |
| Börnin mín voru ósátt þegar þau ekki fengu öskudagsbúninga í ár.  | temporal.CAC.V3    | 2.35          | -0.734        |
| Hann gafst upp á að keyra eftir að hann ekki stóðst bílprófið í fimmta skipti.                                      | temporal.CAC.V3    | 2.21          | -0.689        |
| Hún tók kökuna úr ofninum þegar hún ekki var fullbökuð ennþá.   | temporal.CAC.V3    | 2.10          | -0.752        |
| Kötturinn minn mjálmur og mjálmur þegar hann ekki fær nóg að borða á morgnana.                                      | temporal.CAC.V3    | 2.75          | -0.466        |
| Sindri fékk að vinna hjá þabba sínum meðan hann ekki var með fasta vinnu.   | temporal.CAC.V3    | 3.39          | -0.309        |
| Unga parið átti erfitt með að ná endum saman meðan þau ekki fengu atvinnuleysisbætur.                               | temporal.CAC.V3    | 2.82          | -0.538        |
| Sindri hefur farið til Spánar þrisvar meðan ég fékk aldrei að fara til útlanda.                                     | temporal.PAC.V2    | 5.15          | 0.408         |
| Stebbi er búinn að skrifa drög að ritgerðinni sinni meðan ég hef ekki einu sinni byrjað að safna gögnum fyrir mína. | temporal.PAC.V2    | 5.80          | 0.624         |
| Stúdentarnir pöntuðu ný einstök á meðan þeir sýndu ekki neinn áhuga á að nota þau gömlu.                            | temporal.PAC.V2    | 2.69          | -0.542        |
| Sóley er búin að þrjóna margar peysur þegar ég get ekki einu sinni sett lykkjur á þrjóna.                           | temporal.PAC.V2    | 3.96          | 0.020         |
| Á meðan þeir nota aldrei mínar bækur í kennslu, nota þeir þínar bækur í tveimur námskeiðum.                         | temporal.PAC.V2    | 3.74          | -0.177        |
| Þegar ég gat ekki einu sinni keypt bíl voru allir að kaupa íbúð.  | temporal.PAC.V2    | 5.82          | 0.755         |
| Sindri hefur farið til Spánar þrisvar meðan ég aldrei fékk að fara til útlanda.                                     | temporal.PAC.V3    | 2.54          | -0.649        |
| Stebbi er búinn að skrifa drög að ritgerðinni sinni meðan ég ekki hef einu sinni byrjað að safna gögnum fyrir mína. | temporal.PAC.V3    | 2.72          | -0.555        |
| Stúdentarnir pöntuðu ný einstök á meðan þeir ekki sýndu neinn áhuga á að nota þau gömlu.                            | temporal.PAC.V3    | 1.36          | -1.041        |
| Sóley er búin að þrjóna margar peysur þegar ég ekki get einu sinni sett lykkjur á þrjóna.                           | temporal.PAC.V3    | 2.01          | -0.775        |
| Á meðan þeir aldrei nota mínar bækur í kennslu, nota þeir þínar bækur í tveimur námskeiðum.                         | temporal.PAC.V3    | 1.50          | -1.105        |
| Þegar ég ekki gat einu sinni keypt bíl voru allir að kaupa íbúð.  | temporal.PAC.V3    | 2.97          | -0.459        |



## Appendix II: Results from statistical hypothesis testing

Syntactic types:

| order | .y.     | group1 | group2 | n1   | n2   | statistic | p     | p.adj | p.adj.signif |
|-------|---------|--------|--------|------|------|-----------|-------|-------|--------------|
| V2    | zscores | CAC    | PAC    | 1221 | 2442 | -0.223    | 0.824 | 1.000 | ns           |
| V2    | zscores | CAC    | NON-IC | 1221 | 407  | -15.525   | 0.000 | 0.000 | ****         |
| V2    | zscores | PAC    | NON-IC | 2442 | 407  | -16.451   | 0.000 | 0.000 | ****         |
| V3    | zscores | CAC    | PAC    | 1221 | 2442 | -1.814    | 0.070 | 0.209 | ns           |
| V3    | zscores | CAC    | NON-IC | 1221 | 407  | -3.347    | 0.001 | 0.002 | **           |
| V3    | zscores | PAC    | NON-IC | 2442 | 407  | -2.391    | 0.017 | 0.050 | ns           |

Semantic types:

| .y.     | group1      | group2      | n1   | n2  | statistic | p     | p.adj | p.adj.signif |
|---------|-------------|-------------|------|-----|-----------|-------|-------|--------------|
| zscores | causal      | concessive  | 1221 | 407 | 3.217     | 0.001 | 0.019 | *            |
| zscores | causal      | conditional | 1221 | 814 | 2.375     | 0.018 | 0.263 | ns           |
| zscores | causal      | purpose     | 1221 | 407 | 2.006     | 0.045 | 0.672 | ns           |
| zscores | causal      | result      | 1221 | 407 | -3.847    | 0.000 | 0.002 | **           |
| zscores | causal      | temporal    | 1221 | 814 | -0.823    | 0.411 | 1.000 | ns           |
| zscores | concessive  | conditional | 407  | 814 | -1.262    | 0.207 | 1.000 | ns           |
| zscores | concessive  | purpose     | 407  | 407 | -0.988    | 0.323 | 1.000 | ns           |
| zscores | concessive  | result      | 407  | 407 | -5.767    | 0.000 | 0.000 | ****         |
| zscores | concessive  | temporal    | 407  | 814 | -3.646    | 0.000 | 0.004 | **           |
| zscores | conditional | purpose     | 814  | 407 | 0.121     | 0.903 | 1.000 | ns           |
| zscores | conditional | result      | 814  | 407 | -5.397    | 0.000 | 0.000 | ****         |
| zscores | conditional | temporal    | 814  | 814 | -2.919    | 0.004 | 0.053 | ns           |
| zscores | purpose     | result      | 407  | 407 | -4.779    | 0.000 | 0.000 | ****         |
| zscores | purpose     | temporal    | 407  | 814 | -2.505    | 0.012 | 0.184 | ns           |
| zscores | result      | temporal    | 407  | 814 | 3.014     | 0.003 | 0.039 | *            |

Age:

| .y.     | group1 | group2      | n1  | n2   | statistic | p     | p.adj | p.adj.signif |
|---------|--------|-------------|-----|------|-----------|-------|-------|--------------|
| zscores | 16–29  | 30–39       | 270 | 730  | 1.106     | 0.269 | 1.000 | ns           |
| zscores | 16–29  | 40–49       | 270 | 910  | 3.252     | 0.001 | 0.011 | *            |
| zscores | 16–29  | 50–59       | 270 | 860  | 3.589     | 0.000 | 0.003 | **           |
| zscores | 16–29  | 60 or older | 270 | 1300 | 4.887     | 0.000 | 0.000 | ****         |
| zscores | 30–39  | 40–49       | 730 | 910  | 2.950     | 0.003 | 0.032 | *            |
| zscores | 30–39  | 50–59       | 730 | 860  | 3.409     | 0.001 | 0.007 | **           |
| zscores | 30–39  | 60 or older | 730 | 1300 | 5.362     | 0.000 | 0.000 | ****         |
| zscores | 40–49  | 50–59       | 910 | 860  | 0.525     | 0.600 | 1.000 | ns           |
| zscores | 40–49  | 60 or older | 910 | 1300 | 2.347     | 0.019 | 0.189 | ns           |
| zscores | 50–59  | 60 or older | 860 | 1300 | 1.740     | 0.082 | 0.819 | ns           |