The Syntactic Encoding of Information Structure in the History of Icelandic

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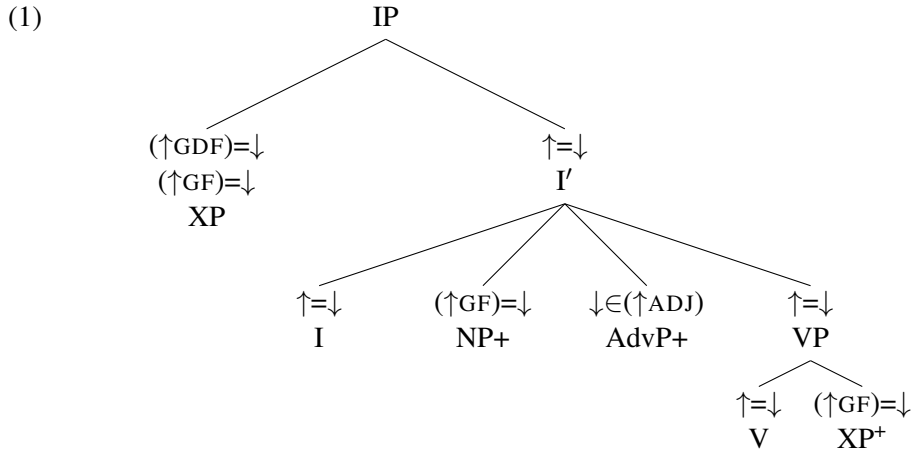## Christin Schätzle

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Abstract

In this paper, we present a revised LFG account for Icelandic clause structure, factoring in new historical data from IcePaHC (Wallenberg et al., 2011). This builds on previous work by Sells (2001, 2005) and Booth et al. (2017), focusing more closely on the syntactic encoding of information structure. Based on findings from a series of corpus-based investigations, we argue that the functional category I was already obligatory in Old Icelandic, accounting for both V1 and V2 orders and the absence of V3/V-later orders. Moreover, we show that the basic c-structure skeleton persists throughout the diachrony; what changes is the way in which information structure is syntactically encoded, i.e. the association between c- and i-structure. Topics increasingly target SpecIP, which allows the finite verb in I to serve as a boundary between topic and comment. This goes hand in hand with certain discourse adverbs losing their function as a discourse partitioner in the midfield and ties in with other changes shown for Icelandic (Booth et al., 2017).

1 Introduction

The clause structure of modern Icelandic has attracted a good deal of attention in generative syntax. Within LFG, Sells (2001, 2005) gives the overall structural possibilities for matrix clauses as (1).

(1)

$$
\begin{array}{c}
\text{IP} \\
\end{array}
$$

Tree structure:
IP dominates:
- (↑GDF)=↓ / (↑GF)=↓ — XP
- ↑=↓ — I′

I′ dominates:
- ↑=↓ — I
- (↑GF)=↓ — NP+
- ↓∈(↑ADJ) — AdvP+
- ↑=↓ — VP

VP dominates:
- ↑=↓ — V
- (↑GF)=↓ — XP⁺

The clause is rooted in IP, headed by a functional head I which is associated with finiteness. SpecIP is an information-structurally privileged position which can host any GF (grammatical function) with a GDF (grammaticalised discourse function; Bresnan et al., 2016). Within I′ there is a flat 'midfield' area, bounded by I and the VP, in which any GF not associated with a discourse function can occur, as well as

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any number of ADJ(unct)s (see also Börjars et al., 2003 on Swedish). According to Sells, the linear order of these midfield elements is somewhat free but subject to OT constraints (see also Börjars et al., 2003).

A revised LFG account of Icelandic clause structure is proposed by Booth et al. (2017) who focus on the left periphery. This proposal is shown in (2).

(2)

$$
\begin{array}{c}
\text{IP} \\
\end{array}
$$

$$
\left\{
\begin{array}{l}
(\uparrow \text{TOPIC}) = \downarrow \\
(\uparrow \{\text{COMP}|\text{XCOMP}\}^* \text{ GF}) = \downarrow
\end{array}
\right.
\qquad
\begin{array}{c}
\text{I}' \\
\overbrace{\quad} \\
\text{I} \quad \text{...}
\end{array}
$$

$$
\left|
\begin{array}{l}
(\uparrow \text{EXPLETIVE}) =_c + \\
\neg(\uparrow \text{TOPIC}) \\
\qquad \text{XP}
\end{array}
\right\}
$$

Like Sells, this revised account assumes that matrix clauses are IPs with the finite verb in I, and that SpecIP is associated with a GDF (specifically TOPIC). Alternatively, SpecIP can host an expletive, provided the clause lacks a topic. Unlike Sells, Booth et al. (2017) assume that the expletive is a topic position placeholder, not a subject (following Thráinsson, 1979, Maling, 1988, Sigurðsson, 2007). A third option is that SpecIP can be unoccupied, rendering topicless V1 (verb-first) sentences.

Icelandic has a rich historical attestation which dates back to the 12th century. Data from earlier stages of the language challenges the accounts by Sells (2001, 2005) and Booth et al. (2017) in a number of ways.[1] Firstly, topics do not exclusively occur in the clause-initial prefinite position. V2 sentences with a clause-initial non-topic, and an immediately postfinite topic are common, e.g. (3).[2]

(3) a. En fullt   var   **skipið**.   (AdjP-V-TOPIC)
         but full.NOM be.PST ship.NOM.DEF
         'But the ship was full.' (1210, Jartein.779)

     b. Þá   hafði   **hann** hálft annað hundrað skipa.   (AdvP-V-TOPIC)
         then have.PST he.NOM half other hundred ships.GEN
         'Then he had half of another hundred ships.' (1275, Morkin.268)

V1 sentences which have an immediately postfinite topic are also robustly attested, e.g. (4). This is the so-called 'narrative inversion' construction (Platzack, 1985; Sigurðsson, 1990).

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[1] All examples come from the Icelandic Parsed Historical Corpus ('IcePaHC', Wallenberg et al., 2011) and are referenced in the form: Year, Text.UniqueID.

[2] Glossing throughout follows the Leipzig Glossing Rules: https://www.eva.mpg.de/lingua/resources/glossing-rules.php. In addition, we use EXPL to gloss an expletive (i.e. non-referential) það.

(4) a. Þórir **hann** þá eigi að stefna til gatnanna. (V-TOPIC)
         dare.PRS he.NOM then NEG to go.INF to paths.DEF
         'He then dares not make for the paths.' (1250, Sturlunga.445.2015)

    b. Var **þetta smíði** hið virðulegasta. (V-TOPIC)
        be.PST DEM.NOM building.NOM DEF magnificent.SUPL
        'This building was the most magnificent.' (1400, Viglundur.94)

Moreover, many of these structures are still possible in the modern language (i.e. are attested in 1901-2008), e.g. (5).

(5) a. Sá **ég** þá á svipstundu villu míns vegar. (V-TOPIC)
         see.PST I.NOM then on moment   error my.GEN way.GEN
         'I then saw in a moment the error of my way.' (1985, Margsaga.689)

    b. Ekki mátti **saumavélin** til dæmis sigla... (NEG-V-TOPIC)
        NEG could sewing-machine.DEF for example sail.INF
        'The sewing machine could not for example sail' (1985, Margsaga.406)

    c. Þá deyr **hann**. (AdvP-V-TOPIC)
        then die.PRS he.NOM
        'Then he dies.' (1920, Arin.1021)

Another striking observation from the historical data is that Icelandic has a small class of 'discourse adverbs' (DAs) which behave in an interesting way diachronically: *nú* 'now', *síðan* 'then', *svo* 'so', *þar* 'there', *þá* 'then'. These DAs can occur in the postfinite domain where they appear to separate TOPIC from FOCUS, e.g. (6).

(6) a. Þiggja þau **þar** ágærar gjafir. (V-TOPIC-DA-FOCUS)
         receive.PRS they.NOM there excellent gifts
         'They receive there excellent gifts.' (1350, Finnbogi.661.2086)

    b. Konungurinn lá **þá** í Sólundum... (TOPIC-V-DA-FOCUS)
        king.NOM.DEF lie.PST then in Sólundur
        'The king was then at Sólundur.' (1260, Jomsvikingar.862)

Furthermore, DAs can also introduce the focused element in V1 sentences which lack a TOPIC (presentationals), e.g. (7).

(7) Voru **þar** tvö skip í búnaði. (V-DA-FOCUS)
     be.PST there two.NOM ships.NOM in preparations
     'There were two ships in the preparations.' (1250, Sturlunga.408.710)

The possibility that DAs serve an information-structural purpose has not been discussed for Icelandic. Parallel DAs have, however, been discussed for Early English, where it has been claimed that they function as discourse partitioners (van Kemenade & Los, 2006; van Kemenade, 2009).

    In this paper, we show how this additional diachronically-informed data can be incorporated into a revised LFG analysis of Icelandic clause structure. Our

analysis is informed by a series of corpus-based investigations using the Icelandic Parsed Historical Corpus ('IcePaHC', Wallenberg et al., 2011), which examine verb position, the positional distribution of topics and the positional distribution of DAs. We show that the c-structure configuration of Icelandic remains stable over time. What changes, however, is the way in which information structure is encoded syntactically, i.e. the association between information structure and c-structure, as captured via changing functional annotations on the c-structure.

2   Theoretical assumptions

We follow the standard LFG assumption that a functional category at c-structure is only motivated when functional information is associated with a fixed structural position (e.g. Kroeger, 1993; Börjars et al., 1999). Furthermore, unlike some analyses of Germanic V2 which posit extra layers of structure to account for functional information, we take the view that c-structure positions are only motivated via direct structural evidence (e.g. word order diagnostics, constituency tests); functional differences are sufficiently captured via functional annotations on the c-structure.

Our paper deals with information structure, where terminology is notoriously problematic. We take a feature-based approach and follow the four-way division of information structure by Butt & King (1996, 1997) shown in (8) (based on ideas from Vallduví 1992; Choi 1999; see also Mycock 2013; Butt et al. 2016).

(8)

	[+New]	[−New]
[+Prominent]	FOCUS	TOPIC
[−Prominent]	Completive information	BACKGROUND

In this view, FOCUS, TOPIC, and BACKGROUND are GDFs. Completive information is not especially salient, nor associated with a fixed structural position (see Butt & King, 1997), hence not a GDF. In Krifka (2007), FOCUS is defined as indicating the presence of alternatives relevant for the interpretation of a linguistic expression. As such, the features [+New] and [+Prominent] are correlates of this definition, see (8). We do not discuss contrastive focus in this paper, since contrastive foci occur relatively rarely in our historical corpus data.

TOPICS point to the entity about which relevant information should be stored in the Common Ground (Krifka, 2007). TOPICS thus signal what the expression is about (see also Butt et al., 2016). In this paper, we discuss continuing topics (e.g. Frascarelli & Hinterhölzl, 2007; cf. also center continuation in centering theory, Grosz et al., 1995). Hence, for us, TOPICS are [−New] and [+Prominent]. BACKGROUND material provides information as to how new information fits in with known information, i.e. the information necessary to provide a good understanding of the new (focused) information (Butt & King, 1997).

3 V1, V2 and I in Old Icelandic

Old Icelandic differs from other early Germanic languages in terms of verb posi-
tion. Whereas Old English, Old High German and Old Saxon exhibit V1, V2, V3
and V-later structures (e.g. Kiparsky, 1995; Axel, 2007; Walkden, 2015), Old Ice-
landic is more restricted, having only V1 and V2. V3 or V-later structures do not
occur in Old Icelandic (Faarlund, 1994, 64; Rögnvaldsson, 1995), as confirmed by
a recent corpus study (Booth, 2018).

3.1 Data

V2 is robustly attested in Old Icelandic matrix clauses; the corpus study by Booth
(2018) found that 82% of all matrix declaratives are V2. Old Icelandic V2 is illus-
trated by the examples in (9).

(9) a. Hann **átti** konu unga og fríða. (SUBJ-V-OBJ)
he.NOM own.PST woman.ACC young.ACC and beautiful.ACC
'He was married to a young and beautiful woman.' (1310, Grettir.312)

b. Hana **átti** Gamli Þórhallsson... (OBJ-V-SUBJ)
she.ACC own.PST Gamli.NOM Þórhallsson.NOM
'To her was married Gamli Þórhallsson...' (1310, Grettir.15)

c. Þar **átti** hann heima í Haugatungu. (ADJ-V-SUBJ)
there own.PST he.NOM home in Haugatungu
'He had home there at Haugatunga.' (1250, Sturlunga.389.30)

Strikingly, V1 is also exhibited in Old Icelandic matrix declaratives, i.e. be-
yond the typical contexts for V1 in modern Germanic (yes/no-interrogatives, im-
peratives). In the corpus study by Booth (2018), 18% of all matrix declaratives
were V1 (Booth, 2018; see also Butt et al., 2014; Faarlund, 2004; Platzack, 1985;
Sigurðsson, 1990; Walkden, 2014). Essentially, V1 declaratives fall into 3 types in
Icelandic (Booth, 2018; Sigurðsson, 2018): (i) impersonal V1 (subjectless), e.g.,
(10-a); (ii) presentational V1 with a postfinite subject in focus, e.g. (10-b); (iii)
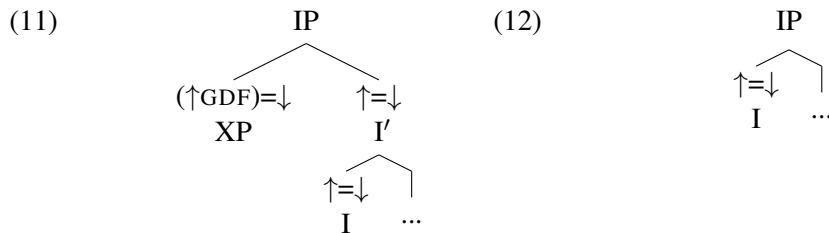narrative inversion V1, e.g. (10-c).

(10) a. **Tekur** nú að hausta. (impersonal)
begin.PRS now to become-autumn.INF
'It now starts to become autumn.' (1310, Grettir.48)

b. **Eru** nú hér með oss margir tígnir menn
be.PRS now here with we.ACC many.NOM noble.NOM men.NOM
og góðir drengir... (V-(...)-SUBJ$_{FOCUS}$)
and good.NOM boys.NOM
'There are now here with us many noble men and good boys...'
(1275, Morkin.401)

c. **Þórir** hann þá eigi að stefna til gatnanna. (V-SUBJ$_{\text{TOPIC}}$)
   dare.PRS he.NOM then NEG to go.INF to paths.DEF
   'He then dares not make for the paths.' (1250, Sturlunga.445.2015)

3.2 Analysis

Since Icelandic has only V1/V2 and no V3/V-later structures, we assume that I is already an obligatory functional category in Old Icelandic; a fixed structural position for finiteness. The proposal therefore is that all matrix declaratives in Old Icelandic are rooted in I, with one available specifier position (SpecIP). Our account for V1 and V2 – where they are rooted in the same c-structure – is in line with Kiparsky (1995). Kiparsky (1995) also argues that the functional head which hosts the finite verb is obligatory in Old Icelandic and optional in Old English, which accounts for the absence of V-later structures in the former and the presence in the latter. In Old English where I is optional, I is present in V1 and V2 sentences, but absent in V3 and V-later sentences.

In Old Icelandic V2 declaratives, SpecIP can be occupied by various categories e.g. subjects, objects, adjuncts, and is associated with a GDF. As such we propose (11) as the preliminary c-structure for V2 declaratives.

(11)
```
              IP
           ╱      ╲
     (↑GDF)=↓      ↑=↓
       XP           I′
                  ╱    ╲
                ↑=↓      ⌐
                 I      ···
```

(12)
```
         IP
       ╱    ╲
     ↑=↓      ⌐
      I      ···
```

We assume that V1 declaratives in Old Icelandic are also IPs, where SpecIP is unoccupied, see (12) (see also Rögnvaldsson & Thráinsson, 1990 for modern Icelandic; Brandt et al., 1992 and Önnerfors, 1997 for German). This is contra other accounts for Germanic which assume that the finite verb is in C in V1 declaratives ('double verb movement' e.g. Sigurðsson, 1990 and Franco, 2008 for Icelandic; Mörnsjö, 2002 on Swedish). These accounts are motivated by the assumption that SpecIP is a unique subject position, within a framework where subjects are exclusively defined via structural position. In LFG, subjects are captured at f-structure and need not be associated with a fixed structural position at c-structure (Dalrymple, 2001). As we argue in Section 4, in Old Icelandic subject topics are not associated with a unique structural position. Our overall point is that in an LFG account we can adequately capture the various structural configurations in Icelandic matrix declaratives by assuming a c-structure rooted in I, without resorting to an additional CP-layer.

4 Topics in Old Icelandic

In Old Icelandic, topics may occur in the clause-initial position, see (13), as well as in the postfinite domain, see (14). That is, while topics can be placed in SpecIP, they may alternatively occur in the midfield. Postfinite topics occur, for example, when a non-topical element occupies SpecIP, see (14-a) with the DA *þá* 'then' in SpecIP, and (14-b), where an adjective is stylistically fronted to SpecIP.[3] Moreover, narrative inversion V1 clauses have a postfinite topic, see (10-c).

(13) TOPIC-V

    a. **Hann** átti konu unga og fríða.
        he.NOM own.PST woman.ACC young.ACC and beautiful.ACC
        'He was married to a young and beautiful woman.'

                                                  (1310, Grettir.312)

    b. **Hana** átti Gamli Þórhallsson...
        she.ACC own.PST Gamli.NOM Þórhallsson.NOM
        'To her was married Gamli Þórhallsson...' (1310, Grettir.15)

    c. **Öxin** kom á herðarblaðið.
        ox.NOM.DEF come.PST on shoulder-blade.DEF
        'The ox came up onto his shoulder blade.' (1310, Grettir.1120)

(14) XP-V-TOPIC

    a. Þá hafði **hann** hálft annað hundrað skipa.
        then have.PST he.NOM half other hundred ships.GEN
        'Then he had half of another hundred ships.' (1275, Morkin.268)

    b. En fullt var **skipið**.
        but full.NOM be.PST ship.NOM.DEF
        'But the ship was full.' (1210, Jartein.779)

In order to test whether topics prefer a particular position in Old Icelandic, we conducted a corpus study investigating their positional distribution in matrix declaratives in texts from IcePaHC which date from 1150 to 1350, i.e., cover the Old Icelandic period. The results of this study are reported in the following.

4.1 Corpus study

IcePaHC does not annotate for information structure. Thus, as an approximation of topics, we took any referential NP argument which is pronominal or has overt definite marking, since these properties can be extracted from the annotation.[4] More-

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[3]We assume that these examples are cases of 'Stylistic Fronting' (fronting of categories which cannot usually be fronted in a Germanic V2 language), even though they flaunt the 'subject gap condition' established for modern Icelandic (Maling, 1990).

[4]We are well aware of the limitations to this approach: (i) not all pronominal and definite NP arguments will be topics and (ii) definiteness marking was not yet obligatory for semantically definite NPs in Old Icelandic, so we will not have captured all semantically definite NPs. However, keeping this in mind, we are convinced that the data provided here still gives valuable clues about the po-

over, we decided to focus on topical subjects (and not e.g. topical objects) in order to make the corpus investigation of manageable scope.

The results of our investigation into the positional distribution of topics in Old Icelandic are given in Table 1. We calculated the occurrence frequencies of the following constructions: (i) V2 clauses which have a topic in SpecIP (TOPIC-V), (ii) narrative inversion V1 clauses with a postfinite topic (V-TOPIC), (iii) V2 clauses with a DA in SpecIP and a postfinite topic (DA-V-TOPIC) and (iv) V2 clauses with a stylistically fronted element in SpecIP and a postfinite topic (SF-V-TOPIC).[5]

TOPIC-V		V-TOPIC		DA-V-TOPIC		SF-V-TOPIC	
n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
1574	58.8%	679	25.4%	381	14.2%	43	1.6%

Table 1: Positional distribution of topical subjects in Old Icelandic (1150-1350).

The data in Table 1 shows that topics occur preferably in the clause-initial position, i.e., SpecIP in Old Icelandic (58.8%). However, topics also regularly appear postverbally, in particular in the context of V1, and to a lesser extent with the clause-initial DAs. SF with a postfinite topic is comparably rare in Old Icelandic, but then SF is a rare phenomenon overall.[6]

Altogether, this indicates that the functionally annotated c-structures postulated for modern Icelandic, i.e., (1) and (2) (Sells, 2005; Booth et al., 2017), cannot hold for Old Icelandic. While it has been argued that SpecIP is the topic position in the modern language, the data presented here shows that topics additionally occur regularly in the midfield in Old Icelandic. These results now inform the functional annotations which we add to the c-structure skeletons given in Section 3.2 in (11) and (12).
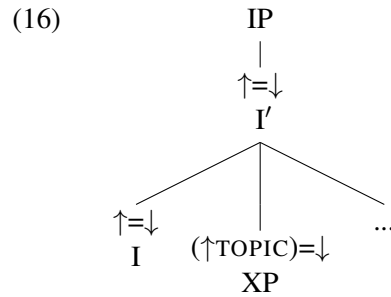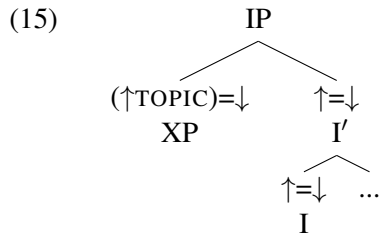
4.2 Analysis

In essence, the corpus study on the positional distribution of topics in Old Icelandic has shown that there are two possible topic positions. The preferred position is the clause-initial prefinite position (SpecIP). Accounting for this, we posit the c-structure tree in (15) for Old Icelandic. Another possibility is for topics to occur in the immediately postfinite position, i.e., in the midfield under I′. This applies to V1 clauses (narrative inversion), where SpecIP remains unoccupied, for which we give the structure in (16).
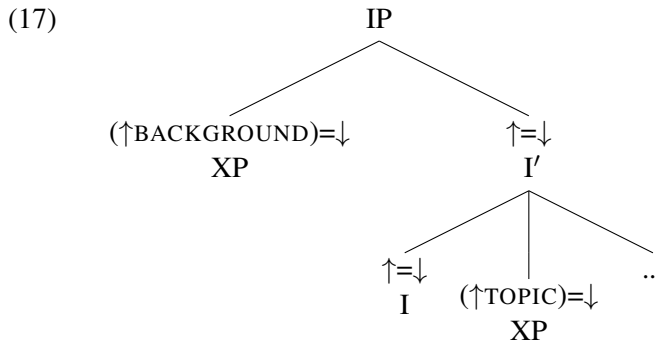
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sitional distribution of topics in Old Icelandic and see this as a promising starting point for further investigations.

[5] As an approximation of Stylistic Fronting we count matrix declaratives where a nonfinite verb, verbal particle, negation, an adjectival or nominal predicate occurs in SpecIP (e.g. Maling, 1990).

[6] Out of a total 19,771 matrix clauses in IcePaHC for the period 1150-1350, 160 have an SF element in SpecIP by our criteria (0.8%).

(15)

```
            IP
          /    \
(↑TOPIC)=↓    ↑=↓
    XP         I′
             /    \
          ↑=↓     ...
           I
```

(16)

```
    IP
    |
   ↑=↓
    I′
   /   \
 ↑=↓  (↑TOPIC)=↓   ...
  I      XP
```

Furthermore, for clauses with a postfinite topic, e.g. (14-a), where a DA sits in SpecIP, we assume the structure in (17).

(17)

```
                    IP
                 /      \
      (↑BACKGROUND)=↓    ↑=↓
           XP            I′
                      /   |   \
                   ↑=↓  (↑TOPIC)=↓  ...
                    I      XP
```

In structures like (17) with a postfinite TOPIC ([–New, +Prominent]), we suggest that SpecIP is a 'discourse-linking' position, i.e. can host BACKGROUND information which is [–New, –Prominent]. This accounts for the fact that DAs (ADJs) commonly occur clause-initially, even in clauses with topics.

Furthermore, this proposal fits with our analysis of narrative inversion V1, see the c-structure in (16), since this type of V1 is limited to contexts where the same scene is maintained and there is no need for a scene-setter or discourse-linker in SpecIP. This is illustrated by the continuous narrative in (18), where a V2 clause indicates a scene change, while a V1 clause occurs when the same scene is continuously maintained.

(18)   Continuous narrative:

    a.   Gissur **kom**   í Reykjaholt um nóttina   eftir Máritíusmessu.
          Gissur come.PST to Reykjaholt in   night.DEF after mass
          'Gissur came to Reykjaholt in the night after the mass.'

                                     (scene change > V2)

    b.   **Brutu**   þeir   upp skemmuna   er   Snorri svaf   í.
          break.PST they.NOM up   storehouse.DEF REL Snorri sleep.PST in
          'They broke open the storehouse where Snorri was sleeping.'

                                       (same scene > V1)

c.   En hann **hljóp** upp og úr skemmunni og í hin litlu
but he.NOM leap.PST up and out storehouse.DEF and in DEF little
húsin er voru við skemmuna.
houses.DEF REL be.PST by storehouse.DEF
'But he leaped up and out of the storehouse and into the little houses
which were next to the storehouse.' (scene-change > V2)

d.   **Fann** hann þar Arnbjörn prest og talaði við hann.
find.PST he.NOM there Arnbjörn priest and speak.PST with he.ACC
'He found there Arnbjörn the priest and spoke with him.'

(same scene > V1)

e.   **Réðu** þeir það að Snorri gekk í kjallarann er
plan.PST they.NOM DEM COMP Snorri go.PST in cellar.DEF REL
var undir loftinu þar í húsunum.
be.PST under ceiling.DEF there in house.DEF
'They plotted that Snorri would go into the cellar which was under
the ceiling there in the house.' (same scene > V1)

f.   Þeir Gissur **fóru** að leita Snorra um húsin.
they.NOM Gissur begin.PST to lead.INF Snorri around house.DEF
'They and Gissur began to lead Snorri around the house.'

(scene change > V2)
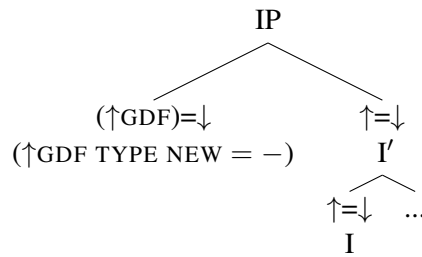(1250, Sturlunga.439.1766 – 1250, Sturlunga.439.1772)

Moreover, the account is in line with the fact that 'out-of-the-blue' presentationals are typically V1, e.g. (10-b). V1 presentationals in Icelandic are 'all new' sentences. Thus, there is no motivation for overt discourse-linking, i.e., BACKGROUND material in the clause-initial position, and SpecIP remains unoccupied.

Additionally, the blueprint in (17) could also work with Stylistic Fronting if we follow the proposal by Egerland (2013) that SF is a backgrounding device. However, more in-depth research on the nature of SF in historical Icelandic is necessary to be able to draw more definite conclusions with respect to its information-structural impact.

If we interpret the c-structures in (15) and (17), where the SpecIP position is filled, in terms of the feature space given for information structure in (8), we arrive at the structure in (19). Given the possibility for both TOPIC and BACKGROUND to occur in SpecIP, we characterise this position as [−New].[7]

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[7]Although not made explicit in the present analysis, we generally assume that information-structural content is projected to a separate i(nformation)-structure (following e.g. Butt et al., 2016).

(19)

$$\text{IP}$$

$$(\uparrow\text{GDF})=\downarrow \qquad \uparrow=\downarrow$$
$$(\uparrow\text{GDF TYPE NEW}=-) \qquad \text{I}'$$
$$\uparrow=\downarrow \quad \dots$$
$$\text{I}$$

In sum, investigating and understanding the behaviour of topics has given us insights into both SpecIP and the midfield, as well as into discourse management strategies. Next, we investigate the positional distribution of discourse adverbs in Old Icelandic further, in order to yet broaden our understanding of the interrelation between information structure and clause structure.

5 Discourse adverbs in Old Icelandic

DAs can occur in various positions in Old Icelandic. Firstly, they can occur in the clause-initial prefinite position (SpecIP), e.g. (20). However, DAs also commonly occur in the midfield, e.g. (21).

(20)   **Þá** hafði hann hálft annað hundrað skipa.   (DA-V)
     then have.PST he.NOM half other hundred ships.GEN
     'Then he had half of another hundred ships.' (1275, Morkin.268)

(21)   a.   Konungurinn lá **þá** í Sólundum...   (TOPIC-V-DA)
         king.DEF lie.PST then in Sólundur
         'The king was then at Sólundur.' (1260, Jomsvikingar.862)
   b.   Þiggja þau **þar** ágærar gjafir.   (V-TOPIC-DA)
         receive.PRS they.NOM there excellent.ACC gifts.ACC
         'They receive there excellent gifts.' (1350, Finnbogi.661.2086)
   c.   Voru **þar** tvö skip í búnaði.   (V-DA-FOCUS)
         be.PST there two.NOM ships.NOM in preparations
         'There were two ships in the preparations.' (1250, Sturlunga.408.710)

Parallel DAs in Early English have been claimed to serve an information-structural role, separating topic from focus (van Kemenade & Los, 2006; van Kemenade, 2009). The behaviour of DAs in historical Icelandic has scarcely been investigated to date. In this section we examine their positional distribution in Old Icelandic via a corpus-based study.

5.1 Corpus study

We examine the relative frequencies at which DAs occur across the 4 different configurations in (20)-(21) for the Old Icelandic texts in IcePaHC (1150-1350). The findings are shown in Table 2.

DA-V		TOPIC-V-DA		V-TOPIC-DA		V-DA-FOCUS	
n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
1001	72.0%	196	14.1%	185	13.3%	9	0.6%

Table 2: Positional distribution of discourse adverbs in Old Icelandic (1150-1350).

The key observation is that while DAs are predominantly prefinite, i.e. occur in SpecIP (DA-V, 72.0%), they also occur in the postfinite domain, i.e. midfield (columns 2-4). In the postfinite domain, DAs occur at a comparable frequency in V2 topic-initial clauses (14.1%) as in V1 narrative inversion (13.3%). DAs do occur in V-DA-FOCUS structures (presentationals), but presentationals overall are rare in the corpus data (see Booth, 2018).

5.2 Analysis

We propose that DAs (which are [–New] and [–Prominent] in information-structural terms) in SpecIP are discourse-linkers; they qualify as BACKGROUND, see (8) above. This is in line with previous work on early Germanic: see van Kemenade & Los (2006) on 'discourse operators' in Early English; Hinterhölzl & Petrova (2010) and Petrova & Rinke (2014) on 'discourse linkers'/'discourse-linking elements' in Old High German (and Old French); Los (2009) and Komen et al. (2014) on the discourse-linking function of the clause-initial position in Old and Middle English.

We claim that the DAs which occur in the midfield can also serve as an information-structural boundary separating TOPIC and FOCUS, see (21-a)-(21-b) (cf. van Kemenade & Los, 2006 on Early English). In line with this role as a discourse partitioner, a midfield DA in V1 sentences which lack a topic (presentationals) closes off the (empty) topic domain and introduces the focus, see (21-c). This is contra the previous proposal for Icelandic by Booth et al. (2017), in which the finite verb (in I) is assumed to be an information-structural boundary separating topic (prefinite) and comment (postfinite) (see also Hinterhölzl & Petrova, 2010 on Early West Germanic). Having I as an information-structural boundary closing off the topic domain clearly does not work for Old Icelandic, where topics occur relatively frequently in the postfinite domain (see Section 4).

Thus we propose that DAs can serve two different information-structural roles in Old Icelandic, which correlate with structural position:

(22)   a.   discourse linker: DA-V-TOPIC
        b.   discourse partitioner:
              (i)   TOPIC-V-DA-FOCUS
              (ii)   V-TOPIC-DA-FOCUS
              (iii) V-DA-FOCUS

We wish to point out that we are not claiming here that DAs are fully grammaticalised elements. We assume that they retain their temporal-spatial semantics, but

have taken on an additional layered information-structural function. We shed more light on the historical development of DAs in the next section.

6   Continuity and change

In the previous sections, we have provided an account for Old Icelandic clause structure on the basis of data from IcePaHC. Now, we turn to how this account can be reconciled with the previous LFG accounts of modern Icelandic clause structure (Sells, 2005; Booth et al., 2017) in terms of continuity and change across the Icelandic diachrony. For this purpose, we investigate the diachronic interaction between information structure and word order over the nine centuries of Icelandic spanned by IcePaHC (1150-2008). To assess the historical developments, we divide the corpus data into periods which have been derived via a data-driven method for periodisation using hierarchical clustering, i.e., DiaHClust (see Schätzle & Booth 2019 for details). Via this method, the IcePaHC texts are grouped into time stages based on their similarity with respect to known changing syntactic features. This results in the following time stages: 1150-1210, 1250-1450, 1475-1630, 1650-1882, 1883-2008.[8] Moreover, this method carves out the genre bias inherent in texts around the 16th century (bible translations stemming from the Reformation) which was previously identified and is known to affect the syntactic characteristics (e.g. Butt et al., 2014; Booth et al., 2017), clustering these texts into the period 1475-1630.

We moreover compute χ^2-tests to calculate whether the observed distributions in each period differ significantly from what could be expected given the total number of data points in each period and the overall distributions of the individual constructions across all periods. In this way, we compare the actual distributions with the distributions that would occur if the data were equally distributed across periods (given the number of data points in each period). Significant differences between the observed and the expected distributions are thus taken to be indicative of change (with $p < 0.05$ '*', $p < 0.01$ '**', $p < 0.001$ '***').

6.1   Continuity

It has been shown in earlier work that V2 is robustly and continuously attested in matrix clauses throughout the Icelandic diachrony (see Butt et al. 2014; Booth et al. 2017). V1 is still an option in the modern stage, although V1 decreases significantly in frequency over time. The results obtained by Booth et al. (2017) are given in Table 3, where the 'non V1' column in essence depicts the occurrence frequencies of V2 in IcePaHC.[9]

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[8]The stages are discontinuous because they begin and end with the year date of the first, or respectively last, text belonging to the individual clusters.

[9]V3 order is possible at least in modern Icelandic with certain adverbs (Angantýsson, 2007, 241; Thráinsson, 2007, 22, 53) but it is a fringe phenomenon and does not show up in the earlier periods in IcePaHC, so we do not discuss it further here.

Period	V1	non V1	Total	% V1	χ^2
1150-1349	2829	10888	13718	20.6%	***
1350-1549	3656	14693	18349	19.9%	***
1550-1749	1654	9556	11210	14.8%	***
1750-1899	2072	9185	11257	18.4%	***
1900-2008	292	10569	10861	2.7%	***

Table 3: Distribution of V1 matrix declaratives in IcePaHC (Booth et al., 2017).

Taking this into account, we assume that the functional category I remains obligatory in Icelandic, consistently hosting the finite verb. Moreover, SpecIP is still optional in the modern language, as V1 clauses remain a part of the language. Yet, SpecIP is increasingly occupied over time and the frequency of V1 decreases.

6.2 Change

The IcePaHC data presented in this section show that the association between i-structure and c-structure changes over time in Icelandic. For one, topics increasingly target SpecIP (see also Booth et al., 2017 for quantitative evidence). SpecIP in turn is becoming more firmly associated with topics. This then allows the finite verb to serve as a boundary between the TOPIC (SpecIP) and the midfield. For this reason, DAs as discourse partitioners in the midfield are no longer motivated and we observe a striking decrease in midfield DAs. The respective corpus findings are detailed in the following.

6.2.1 Topics and SpecIP

Table 4 shows the positional distribution of topical subjects in IcePaHC (1150-2008). Again, we take any referential NP argument which is pronominal or has overt definite marking as an approximation for topics.
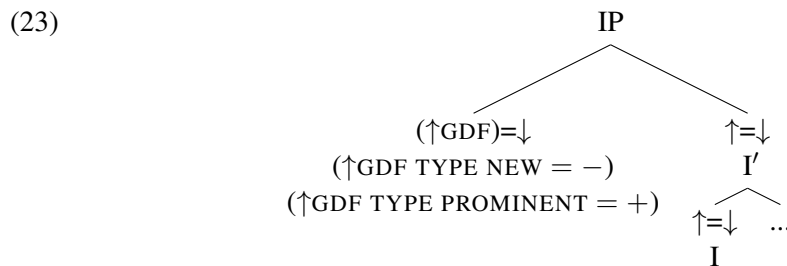
Period	TOPIC-V		V-TOPIC		DA-V-TOPIC		SF-V-TOPIC		χ^2
	n	%	n	%	n	%	n	%	
1150-1210	266	**49.4%**	130	24.2%	129	24.0%	13	2.4%	***
1250-1450	2014	**57.7%**	1031	29.5%	400	11.5%	47	1.3%	***
1475-1630	748	**71.5%**	69	6.6%	208	19.9%	21	2.0%	***
1650-1882	1795	**59.0%**	876	28.8%	316	10.4%	56	1.8%	***
1883-2008	2593	**88.3%**	76	2.6%	231	7.9%	37	1.3%	***

Table 4: Positional distribution of topical subjects in IcePaHC (1150-2008).

Overall, topics occur most frequently in the clause-initial position, i.e. SpecIP, see Table 4 (TOPIC-V). Furthermore, this preference increases diachronically, with up to 88.3% of the topics occurring in SpecIP in the period 1883-2008, while the

constructions with a midfield topic decrease. Also, the increase in topics in SpecIP goes hand in hand with a decrease in DAs in that position (DA-V-TOPIC).

We explain this in terms of the changing information-structural associations of SpecIP. We have shown in Section 4 that SpecIP was associated with the information-structural feature [−New] in Old Icelandic, cf. the tree in (19). In modern Icelandic, referring to the period post-1883 in our data, SpecIP is still characterised as [−New] but increasingly hosts topics which, in addition to being [−New], are [+Prominent]. Thus, SpecIP becomes increasingly associated with prominence over time, resulting in the structure given in (23). Hence, the tendency for BACKGROUND material, e.g., DAs, which is [−Prominent], to occur in SpecIP recedes. Moreover, a further consequence of the increasing association of topics with SpecIP is the increased dominance of V2 over V1, leading to the gradual loss of V1 declaratives in the language.

(23)

$$
\begin{array}{c}
\text{IP} \\
\diagup\diagdown \\
\begin{array}{l}
(\uparrow\text{GDF})=\downarrow \\
(\uparrow\text{GDF TYPE NEW} = -) \\
(\uparrow\text{GDF TYPE PROMINENT} = +)
\end{array}
\qquad
\begin{array}{c}
\uparrow=\downarrow \\
\text{I}' \\
\diagup\diagdown \\
\uparrow=\downarrow \quad \text{...} \\
\text{I}
\end{array}
\end{array}
$$

Now that the topics in SpecIP are clearly demarcated from the rest of the clause via the finite verb in I, I can function as information-structural boundary separating topic and comment (i.e. completive information, see (8)) in the modern language. This is in line with Booth et al. (2017). Since we have shown earlier that DAs were functioning as discourse partitioners in Old Icelandic, we examine the diachrony of DAs more closely in the next section, investigating the trade-off between DAs and SpecIP in terms of the syntactic encoding of information structure.

6.2.2 Discourse adverbs

Table 5 displays the positional distribution of DAs across time (IcePaHC, 1150-2008). We have shown in Section 6.2.1 that DAs are a receding option for SpecIP in comparison to topics. However, when looking at the positional distribution of DAs alone, we found that DAs are in fact increasingly confined to SpecIP (DA-V), while the other placement options (midfield DA), decrease over time.

We account for the increasing confinement of DAs to SpecIP in terms of the increasing loss of their function as discourse partitioners in the midfield. Since topics are now more firmly associated with SpecIP, DAs as a discourse partitioner separating TOPIC from FOCUS are no longer motivated. This is moreover supported by the fact that the constructions which have a topic in SpecIP together with a midfield DA (TOPIC-V-DA), i.e., constructions where the verb already functions as a discourse partitioner and the DA is in principle redundant with respect to this

Period	DA-V		TOPIC-V-DA		V-TOPIC-DA		V-DA-FOCUS		χ^2
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	
1150-1210	209	**77.7%**	23	8.6%	36	13.4%	1	0.4%	*
1210-1450	1191	**68.8%**	162	9.4%	359	20.8%	18	1.0%	***
1475-1630	495	**95.0%**	0	0.0%	22	4.2%	4	0.8%	***
1650-1882	788	**76.8%**	0	0.0%	232	22.6%	6	0.6%	***
1883-2008	368	**96.8%**	0	0.0%	12	3.2%	0	0.0%	***

Table 5: Positional distribution of discourse adverbs in IcePaHC (1150-2008).

function, are virtually lost already after the Old Icelandic period (post-1350).

Overall, we suggest that SpecIP is becoming a topic position. Moreover, since DAs are drastically reduced in the postfinite domain, they no longer function as a discourse partitioner, and the finite verb in I is taking over as an information-structural boundary, delimiting the topic domain, i.e., SpecIP.

7 Conclusion

In this paper we have shown that the same basic c-structure with I as a functional category persists throughout the Icelandic diachrony, while the association between c-structure and information structure changes. Topics become more firmly associated with SpecIP, allowing I to serve as a boundary between topic and comment. Connected with this change, discourse adverbs in the midfield no longer function as discourse partitioners, but rather mainly occur in SpecIP where they function as discourse-linkers.

Finally, this series of changes can be related to other syntactic developments previously shown for Icelandic. One of these developments is the increasing occurrence of the expletive *það* in SpecIP (see Booth et al. 2017, Booth 2018). Along with SpecIP becoming an established topic position, expletive *það* increases in frequency as a filler for this position and as a signaller of an 'all new' clause (Booth, 2018), e.g. (24).

(24) **Það** var töluverður snjór yfir öllu. (EXPL-V-FOCUS)
EXPL be.PST considerable.NOM snow.NOM over everything
'There was a considerable amount of snow over everything.'

(2008, Ofsi.772)

With the SpecIP expletive now an information-structural signal of a topicless sentence, midfield DAs in V1 presentationals such as in (21-c) are no longer motivated to close off the topic domain. This is further supported by the fact that presentational constructions which have both the expletive in SpecIP and a midfield DA are not attested in IcePaHC.

Another development which can be related to the increasing association of top-

ics with SpecIP is that subjects increasingly occur in SpecIP. Since topics are often subjects, subjects overall increasingly target SpecIP and SpecIP is on its way to becoming a subject licensing position, as previously claimed (Booth et al., 2017; Schätzle, 2018).

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