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Constituent Order in Old Icelandic

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Abstract

The prevailing perspective in scholarly literature is that Old Icelandic exhibits free word order in terms of sentence constituent linearity. However, when examining head-complement order, the consensus is that Old Icelandic represents an OV language transitioning towards VO, as seen in modern Icelandic. This paper aims to elucidate the fundamental order of Old Icelandic by classifying languages based on the position of constituents (S, V, O) within sentences. The investigation begins with the question of what statistical insights can be gleaned from IcePaHC, an annotated corpus documenting the entire history of the Icelandic language from its earliest written records (1150) to contemporary times (2008). In this study, data were analyzed using the HistobankVis System, which allows for the extraction of percentages across various time periods. The findings suggest that Old Icelandic should be characterized by two predominant orders (SVO and VSO) rather than as a free-order language.

Keywords: Old Icelandic, constituent order, IcePaHC, HistobankVis System, statistics

1. INTRODUCTION

1.1. CONSTITUENT ORDER

The focus of this paper is the constituent order in Old Icelandic. By Old Icelandic, I denote the language spoken and written by Icelanders during the late Middle Ages, specifically from 1150 to 1540 according to ONP (1989:16), divided in two subperiods (1150–1349 and 1350–1549) according to IcePaHC (Wallenberg et al. 2024; Wallenberg et al. 2011). Consequently, this line of research is situated within the extensive domain of WORD ORDER STUDIES, which examines the concept of linearity – a notion attributed to de Saussure, particularly in contemporary scholarship:

> Le signifiant, étant de nature auditive, se déroule dans le temps seul et a les caractères qu'il emprunte au temps: a) *il représente une étendue,* et b) *cette étendue est mesurable dans une seule dimension*: c'est une ligne. Ce principe est évident, mais il semble qu'on ait toujours négligé de l'énoncer, sans doute parce qu'on l'a trouvé trop simple; cependant il est fondamental et les conséquences en sont incalculables; son importance est égale à celle de la première loi. Tout le mécanisme de la langue en depend.[1] (de Saussure [1916] 1971:103)

Linearity in this context is a characteristic of the signifier, inherently linked to the signified. According to de Saussure, linearity pertains not to the sequence of phonemes on the syntagmatic axis (de Saussure [1916] 1983:419, n. 145), but rather to the sequence of syntagms. The importance of this sequence is established by the combination of units. The intricate interrelation of linguistic units is examined through the concepts of compositionality, combinatoriality, dependency, and constituency (Anderson 2011). Composition generates a linear arrangement of signs (units with meaning), which collectively convey a complete meaning (sentence meaning). This sequence is structured in such a way that the units are positioned in a specific order both within the sentence and within the syntagms (Bussmann & Cotticelli-Kurras 2007:572). The arrangement of constituents in a declarative sentence for non-contrastive and non-corrective purposes is referred to as basic (571).

The study of constituent order in sentences represents a major area of contribution by linguistic typology to the field of linguistics (Greenberg 1963; Cristofaro & Ramat 1999). In this framework, languages are analyzed based on the arrangement of words in active declarative sentences. The metalinguistic tools essential for determining the basic order include the elements: Subject (S), Verb (V), and Object (O) (Booth & Zhao 2023). Using this approach, languages are categorized according to the six possible combinations of these elements, each referred to as a language type:

SVO; SOV; VSO; VOS; OVS; OSV.

Regarding their distribution, there is a significant disparity among linguistic types. The first three types cover 83% of the world's languages, with SVO and SOV alone representing 77% of the world's languages (Dryer 2013). In other words, 77% of the world's languages place the subject at the beginning of the sentence. Conversely, when examining the relative position of V and O, languages can be distinguished as VO or OV (Dryer 1997).

[1] "The signifier, being of an auditory nature, unfolds only in time and has the characteristics it derives from time: a) it represents an extension, and b) this extension is measurable in only one dimension: it is a line. This principle is evident, but it seems that it has always been neglected to state it, undoubtedly because it was found too simple: nevertheless, it is fundamental, and its consequences are incalculable. Its importance is equal to that of the first law. The entire mechanism of language depends on it." All translations are mine unless otherwise indicated. I thank the anonymous reviewers for their suggestions that allowed me to improve the work. I am entirely responsible for any remaining errors.

Moreover, there exists a relationship between the constituent order in sentences and the word order within syntagms, especially within nominal and prepositional phrases. This relationship is known as correlational typology. For the most prevalent syntactic types, the following correlations can be identified (Napoli 2019:31–39):[2]

VSO, Pr, NG, NA
SVO, Pr, NG, NA
SOV, Po, GN, AN

Regarding the opposition between OV and VO types, the correlations are as follows (Dryer 2013):

Verb Phrase	*Prepositional Phrase*	*Noun Phrase*
1. VO	Pr	NG, NA
2. OV	Po	GN, AN

1.2. THE PROBLEM: WHAT IS THE BASIC CONSTITUENT ORDER IN OLD ICELANDIC?

The syntax of Old Icelandic has been studied for a long time. Following Nygaard's important work (1905:343–391), there has been extensive research in recent years. Notably, the works of Braunmüller (1982; 2002), Rögnvaldsson (1987; 1996), Cristoffersen (2002), and Faarlund (2004), as well as more recent contributions by Booth (2018), are particularly noteworthy. Regarding constituent order, the generally accepted view is that Old Icelandic was a language with a relatively 'free' word order, especially when compared to modern Icelandic (Rögnvaldsson 1995:2). It is considered 'relatively free' because it was a strict Verb-Second language and the finite verb was always in either first or second position (Nygaard 1905:344f.; Thráinsson 1986). However, almost any order of post-verbal constituents is found in the texts (Rögnvaldsson 1996). Specifically, the position of the subject seems to show considerable flexibility (Faarlund 2004:194–197). Additionally, the significance of the so-called Narrative inversion (Sigurðsson 2018; Butt et al. 2014) should not be underestimated, as it often places the verb in the initial position, which has led Heusler (1921:189–202) to describe Old Icelandic as a VSO language.

From the standpoint of the VO versus OV typology, it is posited that Ancient Nordic (700–1000, the historical phase preceding the one under investigation) functioned as an OV language (Faarlund 2002a:731; Sigurðsson 1988).[3] For the next historical phase (1150–1349), "Old Nordic is a VO language, which means that objects and predicate adverbials regularly follow the non-finite verbs" (Faarlund 2002b:949; Faarlund 2004:160–165). While VO is the predominant, and hence the basic word order in Old Icelandic (Faarlund 2004:160), the alternative OV order represents "an older pattern", prevalent in both Proto-Germanic and Indo-European languages (Faarlund 2004:161; Braunmüller 2002:654f. with some differences). Sigurðsson (1988) shows that Old Icelandic had both OV and VO orders and concludes that Old Icelandic represents a stage just after the change from OV to VO. The coexistence of both orders continued until the 1800s (Rögnvaldsson 1996:66), a phenomenon that can be interpreted as either Old Icelandic being a language transitioning from OV to VO (Hróarsdóttir 2000) or as a language featuring two equally fundamental orders (Kossuth 1978). The latter perspective helps explain the considerable variability in word order within the nominal phrase (Sigurðsson 2006), suggesting that it does not appear to be governed by any specific syntactic rules (Faarlund 2004:55; a detailed analysis of the various combinations is provided

[2] Abbreviations: Pr = preposition; Po = postposition; G = genitive; N = noun; A = adjective.

[3] The terminology in this and the following sentence is that of Faarlund (2002a, 2002b); in this article, however, what Faarlund calls Old Nordic is called Old Icelandic.

in Lander & Haegeman 2014:279–318). Additionally, like other Scandinavian languages, Old Icelandic is classified as a V2 language, indicating that the verb consistently occupies the second position in both main and subordinate clauses (Thráinsson 1986). Although both Old Swedish and Old Icelandic exhibit V2 patterns with an unmarked SVO order (Zeevaert 2006), this feature has been lost in subordinate clauses in Swedish due to Latin influence (Höder et al. 2007). Due to this diversity of opinion, one tends to conclude that Old Icelandic is a relatively free-order language (Booth 2018:92) in a phase of ongoing change (Booth & Beck 2021).

Research on the basic order of constituents relies on a clear definition of what constitutes a basic order, although there are many challenges associated with this (Booth & Zhao 2023). Fundamentally, the basic order is defined as the statistically most frequent sequence (Bussmann & Cotticelli-Kurras 2007:571). Therefore, to identify the basic order of a language, it is essential to determine which order occurs most frequently. This study addresses the research question: What insights can annotated corpora provide about the basic constituent order in Old Icelandic from a statistical perspective?

2. METHOD AND MATERIALS

2.1. METHOD

The examination of constituent order in Old Icelandic is situated within the realm of historical linguistics, where the volume and quality of data play a crucial role in determining research outcomes. Historical linguists lack the extensive data accessible to synchronic linguists and do not have the benefit of contemporary spoken language. Computational tools (corpora, dictionaries, and databases; Riccio 2016) facilitate access to quantitative data that would otherwise be unattainable for an individual researcher, potentially yielding "unexpected or even counterintuitive results that may not be apparent to the naked eye of the linguist" (Zanchi 2022:110). Annotated corpora are particularly valuable in this context. Annotation can encompass various linguistic levels: morphological, syntactic, semantic, and pragmatic (Zanchi 2022:100f.). Morphological annotation involves parts of speech (POS tagging), lemmas, and inflectional morphology, while syntactic annotation (parsing) represents entire sentences as syntactic trees within treebanks. There are two main types of syntactic annotation corresponding to different theoretical frameworks: constituent grammar and dependency grammar (*Universal Dependency Treebank*; *Universal Dependency 2.7*; *Dependency Direction*; Levshina et al. 2023:853). The standards are the *Penn Treebank* (constituents) and the *Prague Dependency Treebank* (dependencies), with the addition of the *Universal Dependencies Model* (Zanchi 2022).

The Icelandic Parsed Historical Corpus (IcePaHC; Wallenberg et al. 2024; Wallenberg et al. 2011) represents a fundamental resource for historical linguists, facilitating both statistical and quantitative analyses. This corpus enables the calculation of co-occurrence frequencies and structural correlations, which are crucial when investigating linguistic changes, known to affect multiple dimensions. To analyze data derived from IcePaHC, this study will utilize the HistoBankVis System (Schätzle et al. 2017). Originally designed for examining syntactic change in Icelandic, the HistoBankVis System includes two visualization components: the Compact Matrix and the Difference Histograms Visualization. These tools allow for the visual comparison of distributions of various linguistic features, selected on the basis of their relevance within the theoretical literature. The HistoBankVis System supports the visualization of distributions across time intervals, either predefined by the system or selected by the researcher. The Difference Histograms Visualization displays each time period through graphs that show different linguistic dimensions, colour-coded for parallel analysis (Schätzle et al. 2019).

2.2. DATA

The primary data under consideration involve the distribution of different constituent order types (SVO, SOV, VSO) throughout the period from 1150 to 2008, which spans the full temporal range covered by the IcePaHC. The abbreviations are: subject (S), verb (V), direct object (O1), second object (O2). Data extraction was done in July 2024 (Fig. 1).

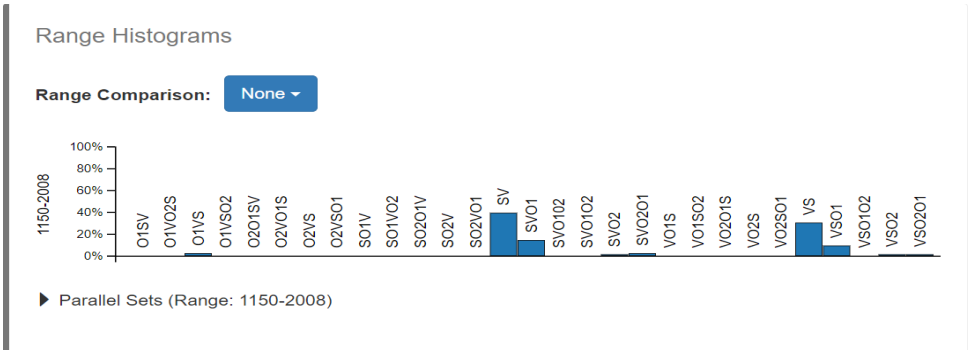

Figure 1. *IcePaHC. Constituent Orders in Icelandic (1150–2008).*

The second graph shows the distribution of different types of constituent order (SVO, SOV, VSO) in two different historical periods: 1150–1549 and 1550–2008 (Fig. 2).

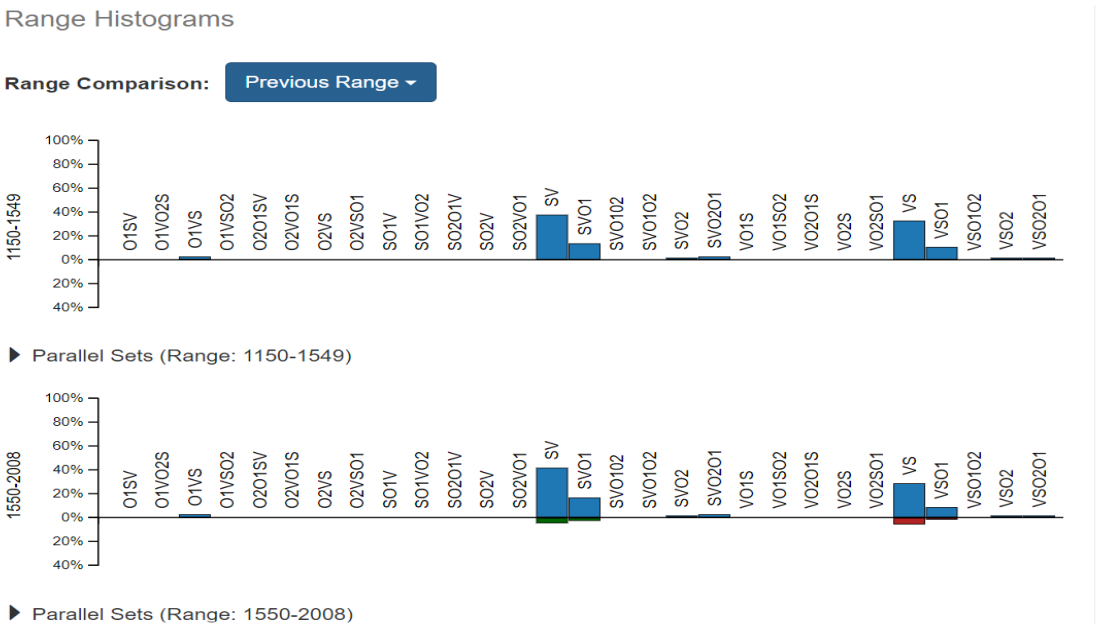

Figure 2. *IcePaHC. Constituent Orders in Icelandic: (1150–1549) and (1550–2008).*

The second graph (1550–2008) depicts increases in green and decreases in red relative to the preceding period. The subsequent graphs further segment the overall period into five sub-periods (1150–1349, 1350–1549, 1550–1749, 1750–1899, 1900–2008), with increments shown in green and decrements in red for each sub-period (Fig. 3, Fig. 4, Fig. 5).

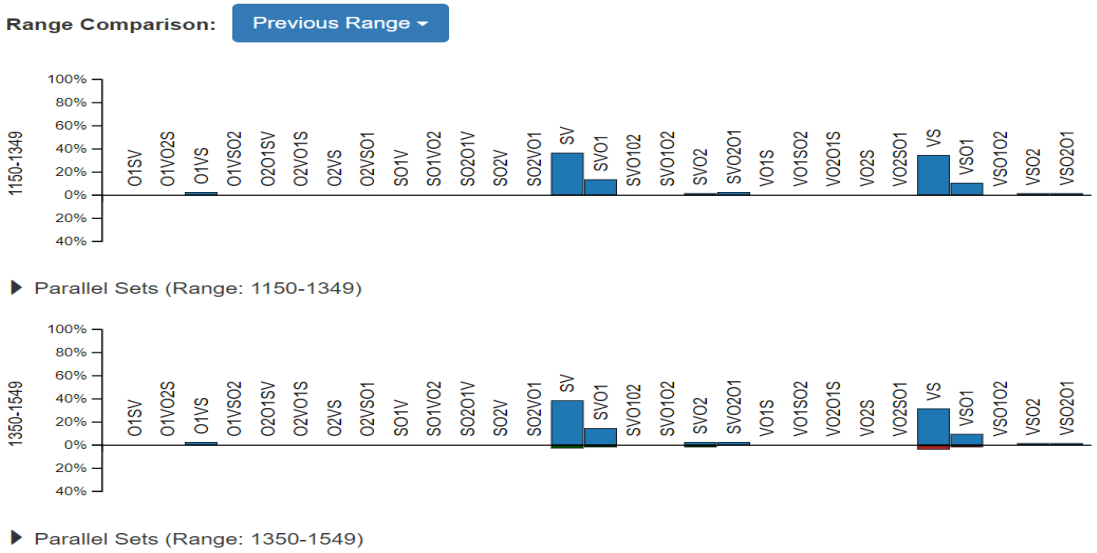

Figure 3. *IcePaHC. Constituent Orders in Old Icelandic: (1150–1349) and (1350–1549).*

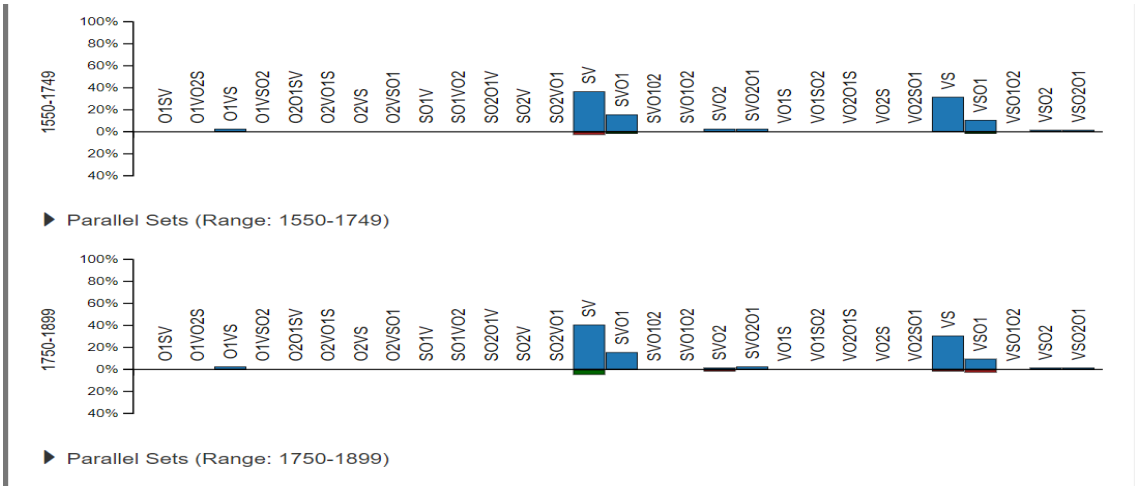

Figure 4. *IcePaHC. Constituent Orders in Icelandic: (1550–1749) and (1750–1899).*

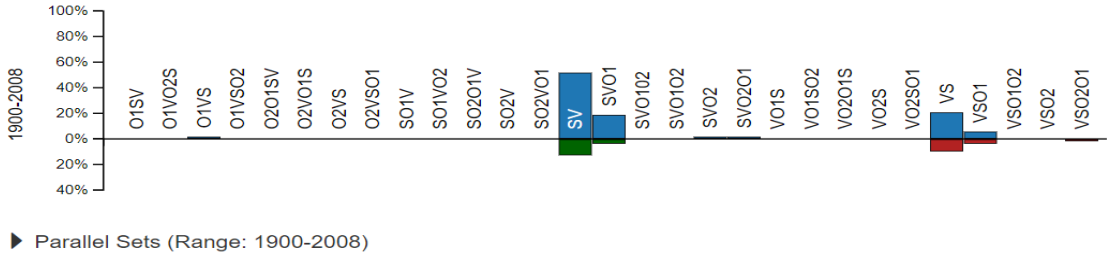

Figure 5. *IcePaHC. Constituent Orders in Icelandic (1900–2008).*

Here (1–9), I present an example for each of the nine syntactic types (O1VS, SV, SVO1, SVO2, SVO2O1, VS, VSO1, VSO2; VSO2O1) that the IcePaHC query returns for the period 1150–1349 (Fig. 3), which is the one investigated. The examples are taken from the more ancient works present in IcePaHC (*First Grammatical Treatise* and *The Icelandic Homily Book-Hómiliúr*) and are cited from IcePaHC (not from single editions) according to its conventions. Therefore, the line referred to here is that of the text files contained in IcePaHC.

(1) O1VS
First Grammatical Treatise (l. 1)
lög sín (O1) *setja* (V) *menn* (S) *á bækur hver þjóð á sína tungu*
"men put their own laws in books, each people in its own language"

(2) SV
First Grammatical Treatise (l. 34)
slík (S) *duga* (V) *betur en spryngi ýr*
"such are better than if they popped out"

(3) SVO1
First Grammatical Treatise (l. 14)
Ǫ (S) *hefir* (V) *lykkju* (O) *af ai en hringinn af oi*
"*Ǫ* has the loop from *a* but the circle from *o*"

(4) SVO2
Homiliubók (l. 158)
Sakarías (S) *svaraði* (V) *englinum* (O2)
"Zechariah answered the angel"

(5) SVO2O1
Hómiliúr (l. 202)
Jóan (S) *kunni* (V) *og vildi velja* (V) *sér* (O2) *inn besta hlut* (O1)
"John knew and wanted to choose for himself the best thing"

(6) VS
First Grammatical Treatise (l. 6)
Svo ganga (V) *og sumir stafir* (S)
"Some letters go like this too"

(7) VSO1
First Grammatical Treatise (l. 1)
Í flestum löndum setja (V) *menn* (S*) á bækur þann fróðleik* (O1)
"In most countries (V) people (S) put the knowledge (O1) in books"

(8) VSO2
Hómiliúr (l. 425)
Gef (V) *ðu* (S) *oss* (O2) *í dag*.
"Give us today"

(9) VSO2O1
Hómiliúr (l. 425)
ættim (V) *vér* (S) *og að kynna yður* (O2) *boðorð hans* (O1)
"we should introduce to you (O2) his commandments (O1)"

3. RESULTS

The results obtained from the IcePaHC data, processed using the HistobankVis System, are summarized as follows. The overall data on constituent order from 1150 to 2008 are presented in the table below (Tab. 1):

Type of Structure	Percentage
SV	39%
SVO1	14%
SVO2	1%
SVO2O1	2%
VS	35%
VSO1	5%
VSO2	1%
VSO2O1	1%
O1VS	2%

Table 1. *IcePaHC. Percentage distribution of Constituent Orders (detailed internally) in Icelandic (1150–2008).*

When aggregating the data by syntactic type, the results show that SVO accounts for 56%, VSO for 44%, and OVS for 2%. The subsequent table (Tab. 2) provides a summary of the data across the five sub-periods considered:

Type of Structure	1150–1349	1350–1549	1550–1749	1750–1899	1900–2008
SV	35%	38%	36%	40%	52%
SVO1	13%	14%	14%	14%	19%
SVO2	1%	2%	2%	1%	1%
SVO2O1	2%	2%	2%	2%	1%
VS	34%	31%	32%	30%	20%
VSO1	9%	9%	10%	9%	6%
VSO2	1%	1%	1%	1%	0
VSO2O1	1%	1%	1%	1%	0
O1VS	2%	2%	2%	2%	1%

Table 2. *IcePaHC. Percentage distribution of Constituent Orders (detailed internally) in Icelandic across different periods.*

When aggregating the values by (macro)linguistic type, the following results are obtained (Tab. 3):

Type of Structure	1150–1349	1350–1549	1550–1749	1750–1899	1900–2008
SVO	51%	56%	54%	57%	73%
VSO	47%	42%	44%	41%	26%
OVS	2%	2%	2%	2%	1%

Table 3. *IcePaHC. Percentage distribution of Constituent Orders in Icelandic across different periods.*

4. DISCUSSION

4.1. THE CLASSIFICATION OF OLD ICELANDIC INTO A SYNTACTIC TYPE

The categorization of a language into a syntactic type relies on statistical evidence, where the basic order is defined as the most frequently occurring pattern in usage. According to this approach, the relevant data for this analysis are as follows: for Icelandic, spanning from its earliest written records to 2008, the percentages reported by the HistobankVis System, which processes the IcePaHC data, are: SVO 56%, VSO 44%, and OVS 2%. For the period from 1150 to 1349, the breakdown is: SVO 51%, VSO 47%, and OVS 2%. In contrast, for the most recent period (1900–2008), the distribution is: SVO 73%, VSO 26%, and OVS 1%. These figures

suggest that modern Icelandic conforms to the SVO type. However, this conclusion is less certain for Old Icelandic in its earlier stages, where the difference between SVO (51%) and VSO (47%) is minimal.

From the data presented, several insights can be drawn. The SVO type does not appear to be overwhelmingly dominant in Old Icelandic (1150–1349). The subsequent period (1349–1549) reveals a trend towards an increased prevalence of the SVO type (56%) and a decrease in the VSO type (42%). Nevertheless, even in this phase, the difference is not significant enough to definitively classify SVO as the dominant order for Old Icelandic. Additionally, the IcePaHC corpus data, as processed by the HistobankVis System (Schätzle et al. 2017), do not provide evidence for the SOV type. As shown in the graphs, none of the subdivisions of the SOV type (SO1V, SO1VO2, SO2VO1, SO2V) are represented.

When evaluating the syntactic type of Old Icelandic (1150–1349) based on the data provided, two possible conclusions can be drawn. It may be classified as an SVO language, given that this order has the highest percentage. Conversely, it may not fit neatly into either the SVO or VSO category, as the percentages for these types are nearly equivalent. To address this question effectively, two aspects, which present certain challenges, must be considered. The first aspect concerns the type of data employed, while the second pertains to the current state of linguistic theory concerning the classification of languages into syntactic types. These issues will be covered in the next section.

4.2. QUALITY AND QUANTITY OF UTILIZED DATA

The first aspect to consider is the quantity of data utilized. The IcePaHC is a corpus containing approximately one million words from 61 texts that span all historical periods of Icelandic from 1150 to 2008. However, the texts within IcePaHC constitute only a small fraction of the entire Icelandic literary production known to us. Quantitatively, therefore, IcePaHC represents a partial source. The second aspect pertains to the nature of the collected texts concerning diachronic variety. All texts are written. It is well-established that the written medium imposes constraints on linguistic structure, notably by limiting the diversity found in spoken language. Additionally, the written medium tends to deviate from the language of everyday use, which is where the creative potential of language is most vividly manifested. Despite this, written texts are the sole means of accessing the earliest stages of a language. Consequently, while acknowledging that written texts tend to standardize the living language, they remain a crucial resource. The third consideration pertains to the textual variability within the corpus. It is widely acknowledged that different textual genres impart unique characteristics to texts. For example, a descriptive text differs significantly from a historical one, and both differ from a poetic text. These variations influence all grammatical levels, including lexicon, morphology, and syntax, as well as the order of constituents. It is important to recognize that the team responsible for compiling the IcePaHC was acutely aware of this limitation (Rögnvaldsson et al. 2012). The selection process for the texts aimed to include a broad representation of textual genres, encompassing literary, religious, and legal texts. A fourth aspect to take into consideration concerns the dating of the works contained in IcePaHC. The dating is the presumed date of composition, not that of the manuscript from which they are transmitted. For example, the most ancient works present in the corpus are the *First Grammatical Treatise* and *The Icelandic Homily Book* (*Hómiliúr*), both dated to the mid-twelfth century. However, they are transmitted by codices that date to a later phase by at least two centuries. For those who deal with syntax, as in this case, this should not affect the results of the investigation, but it is always appropriate to keep in mind the possible discrepancy between the presumed date of composition and the date of transmission of the manuscript source.

The last consideration concerns the quality of the data extractable from IcePaHC. A limitation found during the research is the fact that the extraction of statistical data operated through HistobankVis (Schätzle et al. 2017) returns results that are not complete. For example, the automatic query and extraction of data resulted in the absence of attestations for the syntactic type SVO1O2. But the manual verification on IcePaCH gave different results (10).

(10) SVO1O2
Hómilíur (l. 100)
Hátíð (S) *uppnumningar móður Guðs veitir* (V) *mikinn fögnuð* (O1) *englum* (O2) *á himni og mönnum* (O2) *á jörðu*
"The feast of the Assumption of the Mother of God brings great joy to angels in heaven and to men on earth"

Another example concerns the type of syntactic analysis proposed. The following sentence is analyzed by IcePaHC as an attestation of the syntactic type VSO2O1 (11).

(11) (O1VSO2[O1])
First Grammatical Treatise (l. 30)
Sar (O1) *veitti* (V) *maður* (S) *mér* (O2) *eitt* (O1)
"A man inflicted a wound on me"

Here the object (*sar*) is in the first position, so it is an O1. In the last position there is a numeral (*eitt*) agreed with O1. Therefore, a more precise analysis of the sentence should be the following: (O1VSO2[O1]).

4.3. LINGUISTIC THEORY: DESCRIBING CONSTITUENT ORDER

Since Greenberg (1963), linguistic typology has extensively worked on classifying the world's languages according to syntactic types. This classification is based on identifying the basic linear order and assigning the language to a specific syntactic category. However, the task of describing the extensive variety of languages has often led to challenges in categorizing some languages within distinct types. These difficulties stem from treating linguistic types as discrete categories. To mitigate this issue, some scholars have introduced the concept of "languages with two dominant orders" (Dryer 2013).

Another area of complexity is found in correlative typology, which establishes implicational relationships between syntactic types and specific linguistic features. For example, a language classified as SVO is expected to have prepositions (Pr), a Noun-Genitive order (NG), and a Noun-Adjective order (NA). However, many languages do not fully conform to these expectations. For example, the linguistic landscape in Europe alone illustrates such deviations (Banfi & Grandi 2021:125–130):

- VSO, Pr, NG, NA: Celtic languages (excluding Breton);
- SVO, Pr, NG, NA: Romance languages, Albanian, Modern Greek, Maltese;
- *SVO*, Pr, NG, *AN*: a subset of the Germanic languages (German, Dutch, Icelandic), Slavic languages;
- *SVO*, Pr, *GN*, *AN*: the North Germanic languages (Swedish, Norwegian, Danish);
- *SVO*, *Po*, *GN*, NA: Finnish, Estonian;
- SOV, Po, GN, *AN*: the other Ugric-Finnic languages, Turkish of Turkey;
- SOV, Po, GN, NA: Basque language.

The inconsistencies with expected correlations are in italics. For example, while SVO languages such as Swedish, Norwegian, and Danish exhibit prepositions as anticipated, they also display Genitive-Noun and Adjective-Noun order within the nominal phrase, which is typically associated with SOV languages. Various linguistic theories offer different explanations for these discrepancies. From a synchronic perspective, linguistic typology categorizes such cases as "mixed language types", whereas diachronic observations regard them as "transitional types" (Napoli 2019:40). The presence of inconsistent features within a language's synchronic system often indicates an ongoing linguistic change.

The analysis of linear order patterns naturally leads to questions about their underlying explanations. Why do languages exhibit certain specific linear orders rather than others? What accounts for the inconsistencies within correlative typologies? How can we understand the movements that alter linear order? The study of constituent order addresses fundamental aspects of linguistic structure. Since its early developments, typological linguistics has advanced significantly both theoretically and empirically (Levshina 2022). Concurrently, other theoretical frameworks have also evolved, as will be discussed in the subsequent section.

4.4. LINGUISTIC THEORY: EXPLAINING CONSTITUENT ORDER

In the generativist framework, syntax is considered the core of a language's grammar. In its initial form, known as Transformational-Generative Grammar, multiple levels of representation are involved. The results of syntactic rules undergo transformations, with sentences appearing differently at the deep level – where semantic relationships are established and the hierarchical structure is created – compared to the surface level, visible to the message recipient. The transition from deep to surface structure involves movement, shifting elements from their 'original' positions to those presented in the final sentence. In the Principles and Parameters Model of Universal Grammar, Principles (deep or invisible) and Parameters (surface or visible with limited choices) are differentiated. Principles account for what remains constant across languages (invariance), while Parameters explain the variations (variance) seen in how sentence constituents are arranged in different languages. Within this framework, the X-bar schema represents the single structural configuration used to describe the union of constituents:

a) XP → SPEC; X'
b) X' → X; YP
c) X' → X'; ZP

The X-bar schema integrates a head with a complement (and a specifier). Within this schema, the ordering of elements is determined by parametric choices. The two possible orders are head-complement (as seen in Italian) and complement-head (as observed in Japanese), leading to what is known as the head parameter. Complements are consistently positioned either entirely to the right or entirely to the left of the head, irrespective of the type of phrase. This distinction results in categorizing languages as either VO (head-object) or OV (object-head). Variations in linear order are thus interpreted as variations within a range of linguistic parameters. Nevertheless, there is no consensus among generativists regarding this parameter. Some scholars argue that SVO is the universal order from which all other orders are derived through movement (Kayne 1994). Significant applications of the Principles and Parameters Model to diachronic syntax are exemplified by the Parametric Setting Model (Crisma et al. 2020), which attributes the linear order of constituents to a binary parametric choice (yes/no), based on the Parametric Comparison Method (Guardiano & Longobardi 2009). In the minimalist framework (Chomsky 1995), the emphasis is on the operation of Merge, which facilitates the combination of words within a sentence:

> In ogni caso, la grammatica generativa (GG) oggi tende a ritenere che l'ordine degli elementi, sia esso il frutto di una scelta parametrica di base oppure no, non riguardi né la sintassi in senso stretto né l'interfaccia semantica, ma solo l'interfaccia fonetica (cfr. Chomsky, 2004 e 2008). In altre parole, l'operazione *Merge* si limiterebbe a combinare oggetti sintattici semplici in oggetti sintattici più complessi, cioè a produrre la struttura gerarchica (quindi le relazioni tra i vari nodi, come quelle di contenimento e c-comando): la struttura testa-complemento è un insieme, non una coppia ordinata. L'ordine lineare è invece richiesto dalle condizioni dell'interfaccia fonetica: non si possono pronunciare testa e complemento insieme, ma bisogna avere un'istruzione su quale dei due elementi vada pronunciato prima e quale dopo.[4] (Graffi 2008:82f.)

In the generative framework, the explanation for linear order extends beyond the syntactic domain, which is primarily concerned with hierarchical structure formation. The principle of locality (Gibson 2000) helps to elucidate how different linear orders are established (Samo 2023; Futrell et al. 2020). Examples taken from German (Karimi 2008) illustrate challenges to this framework, highlighting complexities even within generative theory:

– dass der Mann der Frau die Bohnen gab
  "that the man gave the woman the beans"

– dass der Mann die Bohnen der Frau gab
– dass der Frau die Bohnen der Mann gab
– dass die Bohnen der Mann der Frau gab
– dass die Bohnen der Frau der Mann gab

In subordinate clauses, German exhibits all possible linear orders, a phenomenon referred to as 'scrambling'. This concept has been thoroughly examined (Karimi 2008) in studies linking the shift from basic to non-basic order to topicalization processes. This observation suggests that a comprehensive understanding of this phenomenon necessitates considering constituent order from both semantic and prosodic perspectives. Recent research aligns with this approach (Larrivée & Poletto 2023) and is situated within the framework of the Generative Cartographic Model (Rizzi 2004; Cinque 2013).

Functionalist theories particularly emphasize the role of prosody in explaining linear order. Prosody is closely connected to the informational structure of sentences, shaping constituent order based on informational needs, which dictate syntactic structure and focus placement (Simone 2022:39). Word order is thus influenced by the role of elements in transmitting information from the speaker to the listener. In this framework, the Theme (or Topic) is considered the starting point of the linguistic act. Tesnière (1959) uses the metaphor of event staging to describe strategies for highlighting the Theme of a sentence (Simone 2022:38f.). The Prague School previously identified the potential for analyzing sentences through the concepts of Theme and Rema, distinguishing between new information and given information (Given/New). The Theme represents the most pertinent information for the speaker, while the Rema encompasses all other information. Word order variations are determined by the informational weight assigned by the speaker to each constituent, irrespective of its grammatical role (Subject or Object). This perspective is consistent among functionalists from various theoretical backgrounds (Hajičová 1994). Additionally, the principle of communicative

[4] "In any case, current generative grammar (GG) tends to hold that the order of elements, whether resulting from a basic parametric choice or not, pertains neither to syntax in the strict sense nor to the semantic interface, but only to the phonetic interface (cf. Chomsky 2004 and 2008). In other words, the operation of Merge is confined to combining simple syntactic objects into more complex syntactic objects, thereby producing hierarchical structure (i.e., relationships between various nodes, such as containment and c-command): the head-complement structure is a set, not an ordered pair. The linear order, by contrast, is required by the conditions of the phonetic interface: head and complement cannot be pronounced simultaneously; instead, there must be an instruction on which of the two elements should be pronounced first and which second".

urgency is significant in the functionalist perspective, suggesting that less predictable information is positioned first in the linear order, as it is considered most urgent to convey (Givón 1988).

Even though it may be somewhat of a stretch, *Construction Grammar* (Goldberg 2006) can be incorporated into the functionalist framework. This model conceptualizes constructions as complex units that encompass both form and content, with varying scopes from minimal to extensive. This approach holds significant promise for the study of constituent order, as constructions provide insight into the configurational patterns that words can occupy, even within intricate structures (Culicover 2014). Specifically, it facilitates the simplification of the diverse constituent orders across languages into more generalized and recurring patterns (Kuningas & Leino 2006). From a cognitive perspective, Dirvén and Verspoor (2004:8) elucidate constituent order through the principle of iconicity, which, among other factors, relies on the principle of "sequential order" – where the sequence of words mirrors the temporal progression of the events described in the sentence.

The explanation of constituent order differs markedly between functionalist and formalist approaches. Functionalists emphasize the communicative motivations that guide speakers and the reasons behind their linguistic choices. Conversely, formalists are primarily concerned with the formal structure of sentences and the internal consistency of their theoretical frameworks. For formalists, 'explaining' word order entails demonstrating how a specific linguistic fact conforms to an internal principle of the theory. In contrast, functionalists interpret 'explaining' word order (and other linguistic phenomena) as illustrating the connection between form and function (Payne 1999). This dichotomy can be summarized as follows (Thomas 2020:78): on one side are those who assert that constituent order is determined by syntactic roles (S, V, O), while on the other side are those who maintain that order is governed by pragmatic discourse functions such as topic and/or focus (cf. Kiss 1995). Siewierska (1988) posits that sentence constituent order is influenced by overarching principles (tendencies) based on interrelated factors. These include: syntactic function (where the subject precedes the object); semantic function (where the agent precedes the patient); Theme vs. Rema/Topic vs. Comment (where what is said about precedes what is said regarding it); Animacy (where animate precedes inanimate); Purpose (where more purpose precedes less purpose); Definiteness or Referentiality (where definite/referential constituents precede indefinite/non-referential ones); Sentence Accent (where non-accented constituents precede accented ones); Pronominalization (where pronouns precede full noun phrases); Weight (where shorter elements precede longer ones), also referred to as Behaghel's 'second law' or 'the law of increasing cola'. In conclusion, the explanation of constituent order is profoundly influenced by the theoretical model employed.

4.5. DESCRIBING AND EXPLAINING CONSTITUENT ORDER IN OLD ICELANDIC

Given this analysis, it is feasible to offer several considerations regarding the interpretation of the data on Old Icelandic presented above. Initially, it is important to examine the description of constituent order in Modern Icelandic. The consensus in the literature is to classify Modern Icelandic as an SVO language (Maling-Zaenen 2020; Sigurðsson 1988; Rögnvaldsson 1987:33), although it still exhibits internal variation (Kristinsson 2019). In contrast, data from Old Icelandic, especially from the earliest historical period examined (1150–1349), do not conclusively identify it as belonging to a specific syntactic type and support the view that it is a language with a 'free' word order. Languages characterized as having 'free order' are defined by various forms of discontinuity, such as topicalization, Wh-fronting, and extraposition (Kuboň et al. 2013; Kiss & Alexiadou 2015). In the generative framework, 'scrambling' is regarded as a type of discontinuity. Therefore, its occurrence in Old Icelandic

would be an additional indicator of this tendency (Chankova 2023). This view aligns with Luraghi's (2010) argument that Old Icelandic, contrary to the widely accepted belief (Booth 2018:93–96), should be classified as a non-configurational language due to its traits of non-configurationality: free word order, discontinuous constituents, and frequent use of zero anaphora (Luraghi 2010:212). Non-configurational languages do not project hierarchical structures, resulting in a flatter syntactic structure (Varaschin & Culicover 2024).

From a diachronic perspective, a substantial body of research describes syntactic changes of Old Icelandic (Jónsson & Eythórsson 2021; Booth 2018; Martins & Cardoso 2018), including changes affecting dative subjects (Butt et al. 2015) or their final position (Kristoffersen 2003), V1 constructions (Butt et al. 2014), verbal particles (Hróarsdóttir 2008), relative clauses (Wagener 2017), and definiteness (Skrzypek et al. 2021). The presence of such changes suggests that Icelandic may be transitioning from one syntactic type to another (Hróarsdóttir 2000).

A more detailed typological classification system might offer a better description for these phenomena. Dryer (2013) distinguishes between languages as follows:

A. Rigid order languages
B. Flexible order languages
    B1 with a dominant order
    B2 without a dominant order
C. Languages with two dominant orders

For ease of reference, the results derived from the previously analyzed data are summarized as follows. In the initial historical phase, SVO exhibits a slight predominance (51%) over VSO (47%). In the subsequent phase, this predominance increases, with SVO rising to 56% and VSO decreasing to 42%. These figures indicate that Old Icelandic should be categorized as a language featuring two dominant word orders: SVO and VSO.

5. CONCLUSION

The study of constituent order in Old Icelandic continues to captivate scholars. The *communis opinio* holds that Old Icelandic was a language with a relatively 'free' word order. Nevertheless, its classification within the typological framework that contrasts OV and VO languages has been the subject of considerable debate. The prevailing consensus is that Old Icelandic was originally (Ancient Nordic) an OV language undergoing a lengthy transitional phase where two orders are possible (OV and VO), ultimately evolving into a rigid VO order by the twentieth century. The present research offered insights into the so-called basic order of Old Icelandic in relation to the classification of languages based on the positioning of constituents (S, V, O) within a sentence.

The central research question in this article addressed what insights can be derived from a statistical analysis of annotated corpora regarding the basic constituent order in Old Icelandic. The data presented are drawn from the IcePaHC corpus (Wallenberg et al. 2024, 2011), an annotated collection of texts that spans the history of the Icelandic language from its earliest written records (1150) to the present day (2008). The data were analyzed using the HistobankVis System (Schätzle et al. 2017, 2019), which enabled the extraction of percentages over different time periods. For the entire span of the period under review (1150–2008), SVO constitutes 56%, while VSO accounts for 44%. OVS appears in a residual percentage. In the initial period considered (1150–1349), SVO makes up 51% of the instances, VSO 47%, and OVS 2%. These findings lend themselves to various interpretations. Notably, they suggest that Old Icelandic (1150–1349) should be characterized as a language with two dominant word

orders. Specifically, the data indicate that only two word orders (SVO and VSO) out of six possible account for 98% of the corpus. This implies that the perceived freedom pertains to only a subset of possible sentence configurations.

The description and explanation of constituent order are significantly influenced by the theoretical perspective adopted by the researcher. Formalist theories tend to prioritize structural aspects, whereas functionalist theories emphasize communicative dimensions. In both cases, it is crucial to recognize the nuanced nature of the metalinguistic categories used to describe linguistic phenomena. The notion that categorical membership exists on a gradient is a concept with a historical presence in linguistics (Aarts 2004). Researchers engaging with linguistic data must acknowledge this (Sorace & Keller 2005), even within the realm of syntax (Westergaard 2017; Mendoza & Sonnenhauser 2023). Levshina et al. (2023) propose a gradient approach to studying constituent order, based on the principle that, in discussing word order flexibility, languages vary not by type but by degree. This variability, quantifiable on a statistical basis, arises from the complex interplay of factors such as language acquisition, contact, processing, and change. This perspective appears promising and aligns with the idea presented here that Old Icelandic had two dominant word orders.

This conclusion provides a potential avenue for further research. The limitations of the corpus used (IcePaHC) should be addressed, since it is syntactically based and does not provide information on the pragmatic and informational component (Sornicola 2006). The investigation should be implemented both in the direction of transition from the statistical analysis presented here to a qualitative examination of linguistic issues that also considers the difference between main and subordinate clauses and towards a perspective of comparative syntax within the Germanic and Indo-European group.

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