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Agreement with conjoined singular noun phrases in Icelandic

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This article presents results from a study on agreement with conjoined singular noun phrases in Icelandic. A survey was conducted to elicit agreement choices on two agreement targets (predicate adjectives and personal pronouns) with agreement controllers from four individuation levels (human, animal, countable object, uncountable abstract). The aim was to provide an overview of the strategies for determining agreement with conjoined noun phrases in Icelandic, and examine whether two typological hierarchies – the Agreement Hierarchy and the Individuation Hierarchy – can predict the distribution of agreement options. This research identifies and examines five different agreement strategies with conjoined singular noun phrases in Icelandic. The distribution of these patterns in relation to the two hierarchies is evaluated with the aim of discerning what influences agreement choices. Both typological hierarchies are shown to affect the choice of agreement strategies. In addition to discussing semantic resolution, syntactic resolution, and partial agreement in Icelandic – this paper identifies and argues for two types of neuter default agreement. The first is neuter plural, a fixed value for agreement with conjoined noun phrases, and the second is neuter singular: semantic default agreement triggered by referents that are low on the Individuation Hierarchy. This research presents new data that has implications for the understanding of agreement with conjoined noun phrases and the function of neuter in Icelandic and related languages.

Keywords: individuation; agreement; coordination; Icelandic; grammatical gender

1 Introduction

Agreement is a multifaceted grammatical phenomenon. In canonical agreement, number and gender features of agreement controllers are realised on their targets in a one-to-one relationship. Conjoined noun phrases – e.g. *the dog and the cat* – always involve at least two conjuncts that each have their own set of morphosyntactic features. Still, conjoined noun phrases must control agreement on agreement targets that can only have one set of features. This can give rise to considerable variation in agreement both cross-linguistically and within languages, especially in languages that have grammatical gender (e.g. Corbett 1991; 2006; Aoun, Benmamoun & Sportiche 1994; Johannessen 1998).

In this article, I will focus on agreement with conjoined singular noun phrases in Icelandic, the agreement strategies that are available with them, and how speakers of Icelandic choose between those strategies. Icelandic marks number in the singular and plural and has three grammatical genders: masculine, feminine, and neuter. Number and gender features are marked in the inflectional paradigms of several agreement targets: adjectives, pronouns, past participles, quantifiers, and the declinable numerals. All targets have separate forms for all three genders in both numbers in at least part of the paradigm (e.g. Þórhallsdóttir 2015). Icelandic is thus a particularly well-suited language for the

study of agreement with conjoined noun phrases, especially due to the rich gender marking.[1] The rich morphology of the language allows us to distinguish between different types of agreement.

With conjoined noun phrases in Icelandic, several different agreement options are observed. Specific to conjoined noun phrase agreement are two different types of resolution (**semantic resolution** and **syntactic resolution**), **default neuter plural agreement**, and **partial agreement** with either the first or the second conjunct. Examples of semantic resolution, syntactic resolution, and default neuter plural agreement are given in (1).

(1)   a.   Syntactic resolution (adapted from Friðjónsson 1991: 90):
            Frægð-Ø   og fram-i   eru tvíeggj-uð.
            fame(F)-SG and success(M)-SG are double.edged-N.PL
            'Fame and success are double-edged.'

        b.   Semantic resolution
            Ófrísk-a   skáld-ið   og Jóna   eru ánægð-ar.
            pregnant-N.SG poet-the.N.SG and Jóna(F)[SG] are pleased-F.PL
            'The pregnant poet and Jóna (woman's name) are pleased.'

        c.   Default neuter plural agreement
            Hundur-inn   og fugl-inn   eru þyrst-Ø.
            dog-the.M.SG and bird-the.M.SG are thirsty-N.PL
            'The dog and the bird are thirsty.'

In resolution, a term used to describe full agreement with a conjoined noun phrase, the feature values of both conjuncts need to be accessed to compute an agreement form (Corbett 1991; 2006; Wechsler & Zlatic 2003). The process that determines which person, number, and gender feature surfaces in resolution with conjoined noun phrases is called a resolution rule (e.g. Corbett 1991; 2006; Wechsler 2009). Despite the name, resolution rules are not only used for resolving feature conflicts – they are also used to compute an appropriate full agreement form with conjuncts that have the same feature values (Corbett 1991; 2006).

The resolution rules for Icelandic are as follows: In resolution with gender congruent conjuncts (M + M, F + F, N + N) we find that same gender on the agreement target (M, F, or N) in the plural. For all combinations of gender (e.g. M + F, N + F), the resolution form is neuter plural (Corbett 1991: 283; Friðjónsson 1991: 101; Wechsler 2009). In the regular syntactic resolution in (1a), this is borne out. The predicate adjective agrees with both conjuncts based on their grammatical gender features. In (1b), however, referential information overrides the syntactic resolution rule, and *skáld* 'poet' is treated as a feminine conjunct, resulting in semantic resolution (see Wechsler 2009). (1c) also exhibits plural agreement, while neuter is used instead of the expected masculine. This last option has not been described before in Icelandic, and I will argue that it entails no real resolution, and should be seen as default agreement where the features of individual conjuncts are not accessed (in line with Willer-Gold et al. 2016).

A different agreement pattern with conjoined noun phrases, partial agreement, is agreement with only one conjunct (Corbett 2006: 238). In Icelandic, we find both distant and closest conjunct agreement:

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[1] Many interesting generative accounts exist on Icelandic agreement (see e.g. Sigurðsson 1996; Thráinsson 2007; Sigurðsson 2017).

(2)   a.   Partial agreement: Distant conjunct (adapted from Friðjónsson 1991: 94)
             Ættardeil-ur   og bardag-ar   voru algeng-ar.
             family.feud(F)-PL and battle(M)-PL were common-F.PL
             'Family feuds and battles were common.'

       b.   Partial agreement: Closest conjunct (adapted from Friðjónsson 1991: 90)
             Fum-ið   og streita-n   var mikil-Ø.
             commotion-the.N.SG and stress-the.F.SG was great-F.SG
             'The commotion and the stress was great.'

Another agreement pattern, which can appear with conjoined noun phrases (3a) but is not restricted to them (3b), is neuter singular agreement:

(3)   a.   Neuter singular semantic default with a conjoined noun phrase
             Ánægj-a   og gleð-i   er innifal-ið   í námi.
             happiness(F)-SG and joy(F)-SG is included-N.SG in study
             'Happiness and joy is included in studying/education.'

       b.   Neuter singular semantic default with a non-conjoined noun phrase
             Fáðu þér   bjór   ef þú vilt. Það er úti   á svölum.
             have you.DAT beer(M).SG if you want. it.N.SG is outside on balcony
             'Have some beer if you want. It is outside on the balcony.'

In (3a), the predicate is neuter singular in agreement with two feminine conjuncts. This appears to be the use of the default value that can be found in non-agreement in Icelandic (e.g. with infinitive phrases), although the conjoined noun phrase is a perfectly sound agreement controller. The same applies to the neuter agreement with a masculine noun in (3b). I will argue that the pattern in (3) is **semantic default agreement** that surfaces with referents of low individuation. This type of neuter singular agreement has to my knowledge not been mentioned in the literature on Icelandic agreement before, but I will argue that it is similar to the well-known pancake agreement found in the Mainland Scandinavian languages (Enger 2004; 2013; Josefsson 2009; 2010; 2014).

   Icelandic speakers are obviously confronted with a multitude of options when determining agreement with conjoined noun phrases. The question is how they choose between them. Two typological hierarchies that have been shown to be important for the choice of agreement strategies will take centre stage in this paper: The **Agreement Hierarchy** and the **Individuation Hierarchy**. The Agreement Hierarchy is presented in (4) followed by Corbett's definition of it in (5):

(4)   The Agreement Hierarchy (Corbett 1979)
       attributive > predicate > relative pronoun > personal pronoun

(5)   Definition of the Agreement Hierarchy (Corbett 2006: 207)
       For any controller that permits alternative agreements, as we move rightwards
       along the Agreement Hierarchy, the likelihood of agreement with greater seman-
       tic justification will increase monotonically (that is, with no intervening decrease).

The Individuation Hierarchy used in this research is based on similar hierarchies used in the typological literature (see e.g. Dixon 1979: 85; Audring 2009: 125). Such hierarchies are variants of the Animacy Hierarchy (e.g. Comrie 1989: 185), and have been shown to influence or restrict the choice of agreement patterns with conjoined noun phrases (e.g. Corbett 1991: 267 and references provided there). (6) shows the Individuation Hierarchy that is used here:

(6)   The Individuation Hierarchy:
         human > animal > countable object > uncountable abstract

When considered together, the Agreement Hierarchy and the Individuation Hierarchy can be used to identify semantically justified agreement and to indicate on which semantic features it is based (see e.g. Enger 2004; 2013 on Scandinavian pancake agreement). The hierarchies in (4) and (6) can thus provide valuable information on the distribution of agreement options in Icelandic conjoined noun phrase agreement and give suggestions as to how they should be analysed (for a more in-depth presentation of the hierarchies see sections 2.2 and 2.3).

The principle aim of this paper is to uncover how Icelandic speakers determine agreement with conjoined singular noun phrases. I will first describe the agreement options that are available with conjoined noun phrases in Icelandic and then assess to what extent semantic conditions (the Individuation Hierarchy) and differing agreement targets (the Agreement Hierarchy) influence the distribution of these options. In addition to resolution (semantic and syntactic) and partial agreement, this paper identifies two agreement strategies that have not been discussed in connection with Icelandic conjoined noun phrase agreement before: neuter plural default agreement and neuter singular semantic agreement. I will demonstrate, with evidence drawn from a survey, that the distribution of the different agreement options with conjoined noun phrases in Icelandic follows both the Individuation Hierarchy and the Agreement Hierarchy, i.e. that their distribution is influenced by the semantic dimension of individuation as well as the agreement target type.

The data helps identify a neuter plural default, which shows up in agreement with two masculine conjuncts or two feminine conjuncts, where masculine plural or feminine plural would have been expected. On the basis of the data, I furthermore show that the Agreement Hierarchy makes correct predictions for the distribution of resolution vs. partial agreement. Partial agreement is not found to the extent that was expected based on previous accounts of Icelandic agreement. Interestingly, neuter singular agreement is the most-used singular option regardless of the gender combination of the conjuncts. The distribution of this option aligns with the Agreement Hierarchy (neuter singular is more frequent with personal pronouns than predicate adjectives) and the Individuation Hierarchy (it is most common with uncountable abstract conjuncts). I will argue for an analysis of the neuter singular as semantic default agreement triggered by referents of low individuation.

In the next section I will outline the theoretical background of this study. Agreement strategies with conjoined noun phrases will be discussed in relation to the Icelandic strategies above, the two typological hierarchies that this research builds on will be introduced and their significance for the distribution and analysis of agreement options shown. In section 3, I will describe the agreement form elicitation survey that was designed, and section 4 presents the results of this survey. In section 5, I provide a discussion of the data in connection with the research objectives, aim to explain some of the curious patterns, and present an overview of the agreement options that Icelandic speakers have in predicate and pronominal agreement with conjoined noun phrases. The paper ends with a conclusion.

2 Theoretical background

In this section I will first outline the basic ideas of how agreement with conjoined noun phrases can manifest itself, and show the agreement strategies for such phrases in Icelandic. I will introduce how individuation and connected phenomena can act as conditions on agreement choices with conjoined noun phrases, and present the Individuation Hierarchy

that I make use of in this research. The Agreement Hierarchy (Corbett 1979; 1991; 2006) will then be presented, and its predictions for agreement choices with conjoined noun phrases in Icelandic outlined. The section concludes with the aims of this paper.

2.1 Agreement strategies with conjoined noun phrases

Languages have two basic agreement strategies with conjoined noun phrases: agreement with all conjuncts (full agreement, or resolution) or agreement with one conjunct (partial agreement) (Corbett 1991; 2006). Consider the examples from Icelandic in (7):

(7)   Adapted from Friðjónsson (1991: 90)
   a. Frægð-Ø   og fram-i   eru tvíeggj-uð.
       fame(F)-SG and success(M)-SG are double.edged-N.PL
       'Fame and success are double-edged.'
   b. Fum-ið   og streita-n   var mikil-Ø.
       commotion-the.N.SG and stress-the.F.SG was great-F.SG
       'The commotion and the stress was great.'

The first sentence, (7a), shows resolution. The main verb has a plural form, and the adjective appears in neuter plural and agrees with the whole conjoined noun phrase. The sentence in (7b), however, is an example of partial agreement with the closest conjunct. The main verb is singular, and the predicate adjective is singular and feminine in agreement with the second conjunct of the conjoined noun phrase: *streitan* 'the stress'. In this section I will review some of the qualities and assumptions associated with each agreement option, and touch upon the notion of default agreement in relation to agreement with conjoined noun phrases.

Resolution requires access to the feature values of both conjuncts of a conjoined noun phrase in order to compute an agreement form (Corbett 1991; 2006; Wechsler & Zlatic 2003). The process that determines which person, number, and gender feature surfaces in resolution with conjoined noun phrases is called a resolution rule (e.g. Corbett 1991; 2006; Wechsler 2009). The resolution rules for person and number appear to be universal and relatively semantically transparent, while gender resolution rules are language specific and vary considerably between languages (e.g. Corbett 1991; 2006; Wechsler & Zlatic 2003; Badecker 2007). It has been suggested that resolution rules are intrinsically connected to the gender assignment system of each language (Corbett 2006: 263; see also Wechsler 2009: 579).

Languages that have gender marking in the plural must evoke gender resolution rules to determine an agreeing form (see Corbett 1991, chapter 9 for a detailed discussion). This is the case for Icelandic, which has three genders (masculine, feminine, and neuter) that are marked in both singular and plural forms of most agreement controllers and targets.

As previously mentioned, Icelandic resolution works as follows: whenever two conjuncts of a conjoined noun phrase share a gender value (F + F, M + M, N + N), the agreement form receives the same gender in the plural. With conjoined noun phrases of all non-matching gender combinations (M + F, N + F, etc.), however, resolution yields neuter plural (Corbett 1991: 283; Friðjónsson 1991: 101; Wechsler 2009).

The neuter plural form for mixed gender conjuncts is semantically justified, as it is the gender that is used for groups of human beings that are of different "natural" genders – cf. the neuter plural nouns *mæðgin* 'mother and son', *feðgin* 'father and daughter', and *hjón* 'husband and wife' (see discussion in Corbett 1991). In fact, whenever the lexical gender of a noun and the semantic gender of the referent come into conflict in Icelandic resolution, the semantic gender controls agreement (Wechsler 2009). This has been called

semantic resolution (Corbett 2006). Semantic resolution can be contrasted with syntactic resolution, i.e. resolution where only grammatical features of the conjuncts are accessed to compute an agreement form.[2]

Semantic resolution in Icelandic is shown in example (8), where referential information overrides the syntactic resolution rule that states that non-matching gender combinations should yield neuter agreement.[3] The examples in (8) show human referents only, as semantic resolution only extends to sex-differentiated beings:

(8)　　a.　Skeggjað-a　　skáld-ið　　og　Jón　　　　eru ánægð-ir/*-Ø.
　　　　　　bearded-N.SG poet-the.N.SG and Jón(M)[SG] are pleased-M.PL/*N.PL
　　　　　　'The bearded poet and Jón (man's name) are pleased.'

　　　　b.　Ófrísk-a　　　skáld-ið　　og　Jóna　　　eru ánægð-ar/*-Ø.
　　　　　　pregnant-N.SG poet-the.N.SG and Jóna(F)[SG] are pleased-F.PL/*-N.PL
　　　　　　'The pregnant poet and Jóna (woman's name) are pleased.'

Another strategy for plural agreement is possible. As we will see in the results of this paper, Icelandic speakers show a strong tendency towards using neuter plural even with two masculine conjuncts or two feminine conjuncts. The example in (9) shows neuter plural agreement with two masculine conjuncts:

(9)　　Hundur-inn　og　fugl-inn　　　eru þyrst-Ø.
　　　　dog-the.M.SG and bird-the.M.SG are thirsty-N.PL
　　　　'The dog and the bird are thirsty.'

This extended use of the neuter plural – the most frequent value in Icelandic resolution – indicates that this may be a default form that does not rely on feature-based computation of agreement (see 5.2).

We have now reviewed the strategies that trigger plural agreement (semantic/syntactic resolution and neuter plural default). We now turn to strategies that employ singular agreement: partial agreement and neuter singular agreement. Partial agreement is agreement with only one conjunct of the conjoined noun phrase. It is very frequently found with the conjunct that is linearly nearest to the agreement target (see Corbett 2006: 170 and the multiple references provided there). Closest conjunct agreement has been found for a multitude of languages, such as Arabic (e.g. Aoun et al. 1994), Slovenian (Marušič et al. 2015), Hindi and Tsez (Bennamoun et al. 2009). First (or distant/highest) conjunct agreement is also found in some languages. This agreement possibility is considered relatively rare and is found with Latin, Serbian/Croatian and Slovene (Corbett 2006: 170; see also Marušič et al. 2015). The choice of partial agreement is furthermore conditioned by the order of the agreement controller and agreement target; partial agreement is more likely to occur when the target precedes the subject (see e.g. Badecker 2007; Lorimor 2007).

Many languages that allow for partial agreement in subject-predicate agreement with conjoined noun phrases also make use of resolution (Badecker 2007). Icelandic is one of these languages. With conjoined subjects, Icelandic allows for both partial predicate agreement and resolution – although this optionality depends on the countability and concreteness of the conjuncts (Friðjónsson 1991). According to Friðjónsson's study of subject-predicate agreement with conjoined noun phrases (Friðjónsson 1991), partial agreement in Icelandic

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[2] In this paper, I use the term resolution for syntactic resolution, unless otherwise specified.
[3] The examples in (8) are inspired by an example sentence from Wechsler (2009: 573, example (27)).

is only available with mass nouns and abstract nouns and usually involves the conjunct that is nearest to the agreement target as in (8b) above. However, distant (or first/highest) conjunct agreement is also possible in Icelandic (Friðjónsson 1991: 86). Consider the example in (10):

(10)   Adapted from Friðjónsson (1991: 94)
        Ættardeil-ur   og bardag-ar   voru algeng-ar.
        family.feud(F)-PL and battle(M)-PL were common-F.PL
        'Family feuds and battles were common.'

The predicate adjective *algengar* 'common' is feminine and plural in agreement with the more distant conjunct *ættardeilur* 'family feuds'.

   However, as Badecker notes (2007: 1542), singular agreement with conjoined noun phrases does not necessarily mean that partial agreement is at play. Defaults can also be evoked. Qafar (Hayward & Corbett 1988; Corbett 2000: 203–206) is one language that shows default agreement with conjoined noun phrases. Corbett still regards this as agreement with one conjunct, but that the nearest conjunct "rather than controlling ordinary agreement, may fail to determine an agreement form so that a default form results" (Corbett 2000: 204). In his view, therefore, singular agreement forms with conjoined noun phrases do not necessarily have to involve all feature specifications of the controlling conjunct to count as partial agreement.

   The following Icelandic sentence in (11), found in a written text, is an example of the use of what appears to be default agreement with a conjoined noun phrase:

(11)   Ánægj-a   og gleð-i   er innifal-ið   í námi.
        happiness(F)-SG and joy(F)-SG is included-N.SG in study
        'Happiness and joy is included in studying/education.'

The predicate adjective appears in the neuter singular despite the two feminine conjuncts of the conjoined noun phrase. In Icelandic, the neuter singular is used as a default value in e.g. predicate and pronominal agreement with infinitive phrases, oblique subjects and other controllers that lack agreement features (e.g. Rögnvaldsson 1990: 53). To my knowledge, examples of the neuter singular being used in agreement with conjoined noun phrases such as in (11) have not been mentioned in the literature on modern Icelandic agreement, but – as we will see – this is a strategy used extensively by speakers of Icelandic.

   Interestingly, a nearly identical agreement pattern is found in the Mainland Scandinavian languages (Enger 2004; 2013; Josefsson 2009; 2010; 2014; Wechsler 2013). Example (12) illustrates neuter singular agreement with a conjoined noun phrase that has no neuter features in Norwegian (note that there is no gender distinction in the plural):

(12)   *Norwegian* (adapted from Enger 2004: 10)
        Pølse-r   og potetmos   er   god-t.
        sausage-PL and mashed.potato(M)[SG] be.PRS good-N.SG
        'Sausages and mashed potatoes is good.'

A possible analysis for this example is to treat the Norwegian pattern in (12) as an instance of a pattern which has been called *Scandinavian pancake agreement.* Examples of pancake agreement usually include more straight-forward agreement controllers. (13) shows pancake agreement with non-conjoined noun phrases:

(13)   *Norwegian* (adapted from Enger 2004: 6)
    a.   Pannekak-er   er   god-t.
        pancakes-PL be.PRS good-N.SG
        'Pancakes are good.'

    b.   Vodka   er   sun-t.
        vodka(M)[SG] be.PRS healthy-N.SG
        'Vodka is healthy.'

In both examples in (13), the predicate adjective appears in the neuter singular, while the agreement controller is a plural noun in (13a) and a singular masculine noun in (13b). Pancake sentences thus show apparent gender and number disagreement between the subject and predicate. There is no obvious reason for this, as the subjects in (13) have the required features for agreement (in opposition to e.g. infinitive phrases, where a default form must be used). Enger (2004: 10) emphasizes the fact that subjects in pancake structures do not refer to what they appear to refer to, following previous work (Widmark 1971: 80; Källström 1993; as cited in Enger 2004: 10–11). The sentence in (13a) will usually mean 'eating pancakes is good'.

While the pancake agreement pattern in Mainland Scandinavian is frequently found with predicate adjectives, it is ungrammatical in the attributive position (Faarlund 1977: 242). This complies with the predictions of the Agreement Hierarchy, indicating semantic agreement. This fact, taken together with the observation that "[…] the less individuated the controller, or rather its referent, the more likely that we get a neuter adjective" (Enger 2004: 25), suggests that pancake agreement is semantic agreement based on low individuation (Enger 2004; 2013). Note that this analysis has been debated (for different approaches see e.g. Josefsson 2009; 2010; 2014; Wechsler 2013), but the fact that the neuter singular form is associated with low-individuation readings is undisputed. Wechsler (2013: 41) e.g. argues that the neuter singular form in pancake sentences is the result of no agreement relations at all and that agreement is blocked because the "features of the noun are encapsulated within a larger semantic structure that serves as the adjective's subject".

A comparable pattern is found in Faroese, where neuter singular often occurs with indefinite mass nouns in the language, as illustrated by (14a):

(14)   *Faroese* (adapted from Petersen 2009: 90)
    a.   mjólk   er gott
        milk(F) is good.N
        'Milk is good (in general).'⁴

    b.   mjólk-in   er góð/*gott
        milk-the.F is good.F/*good.N
        'The milk is good.'

In contrast, as (14b) shows, the use of neuter singular agreement is impossible with definite mass nouns. Petersen states that the neuter in (14a) is "simply a strategy for expressing something generic" (Petersen 2009: 90) – i.e. that there is positive semantic motivation for the neuter. Audring (2009) has similarly shown in her study of the resemanticization of the Dutch gender system that pronominal agreement in Dutch is sensitive to individuation distinctions, and that neuter pronouns are most often found in agreement with mass nouns and uncountable, unbounded, unspecific abstracts.

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⁴ This use of the neuter with *mjólk* 'milk' is not grammatical in Icelandic, although similar patterns do come up in language use (see section 5.1).

As shown above, there are several different types of agreement that can be found in Icelandic conjoined singular noun phrase agreement. We will see that the choice between the different strategies is not altogether clear-cut. In the next section, the semantics of conjuncts and its role in augmenting or diminishing the likelihood of a given agreement strategy with conjoined noun phrases will be considered.

2.2 The Individuation Hierarchy: Conjunct semantics and agreement strategy choice

Semantic properties are crucial in determining which agreement strategy to use with conjoined noun phrases, as will be highlighted in this section. When languages allow for the use of either partial agreement or resolution, it has been shown that the related parameters of animacy, individuation, and notional number can act as conditions on which option is chosen (Corbett 2006; Lorimor 2007).

In general, the semantic properties of animacy and individuation are highly relevant when it comes to agreement with conjoined noun phrases. A gradual animacy effect has been found on the distribution of resolution with conjoined noun phrases in several languages: Animacy affects the likelihood of number resolution with predicates in Medieval Spanish, German, Russian and Serbian/Croatian texts, in which resolution is favoured over partial agreement with animate referents (cf. Corbett 1991: 267 and references provided there). The same pattern is found in Latin (Johnson 2008; as cited in Hock 2009). Other languages have a clear-cut animacy distinction, e.g. Swahili, that requires resolution for human conjoined noun phrases (Marten 2005: 527, 528n1; as cited in Corbett 2006: 169).

Similarly, there is a clear animacy distinction when it comes to gender resolution with human conjoined noun phrases in Icelandic (as in example (8) above). Semantic gender (which draws on the semantic core of grammatical gender) overrules lexical gender, suggesting that semantic resolution based on semantic gender is the main agreement option for human conjoined noun phrases. Syntactic resolution with human conjoined noun phrases in Icelandic is only used when the "natural" gender of referents is not known. Moreover, Friðjónsson (1991) proposed that the choice between resolution and partial predicate agreement with conjoined subjects in Icelandic is based on countability and concreteness – two semantic dimensions closely related to notions of individuation. His analysis was based on collected examples and speaker intuition.

(15)   Predicate agreement with conjoined subjects in Icelandic (adapted from Friðjónsson 1991: 101)
        a.   concrete countable → resolution
        b.   concrete uncountable → partial agreement
        c.   abstract countable/uncountable → partial agreement or resolution

As (15) shows, Friðjónsson found that resolution is always used with conjoined subjects that are concrete and countable, while concrete uncountable nouns only show agreement with one conjunct. However, when the conjuncts are abstract terms (this includes both countable and uncountable nouns in his analysis), there is variation in language use: Either resolution or agreement with one conjunct is used (Friðjónsson 1991: 101).

In this research I make use of the Individuation Hierarchy in (16), which I base on related hierarchies that have been used in the literature, e.g. Sasse's Continuum of Individuality (Sasse 1993), Dixon's potentiality of agency scale (Dixon 1979), and the Individuation Hierarchy in Audring (2009). The Individuation Hierarchy is essentially a variant of the Animacy Hierarchy (e.g. Comrie 1989; see discussion in Audring 2009: 126) and follows the same general idea; it ranges from the most individuated and agent-like referents to highly unindividuated ones.

(16)　　The Individuation Hierarchy
　　　　human > animal > countable object > uncountable abstract
　　　　móðir 'mother' > *mörgæs* 'penguin' > *skál* 'bowl' > *hamingja* 'happiness'

The idea with a conceptual hierarchy like (16) is that grammatical phenomena can be restricted or influenced by it. Certain generalizations can thus apply to all cases above a certain cut-off point (Dahl 2000: 99). Example (8) has e.g. a clear cut-off point: semantic resolution is only available with conjoined noun phrases that include sex-differentiated referents. However, hierarchies can also be thought of as a continuum (Dahl 2000: 99). We can therefore expect that a certain agreement pattern may be favored for e.g. human referents but still used, to a lesser extent, for countable object or uncountable abstract nouns.

The choice of the Individuation Hierarchy in (16) needs some justification, especially with regards to why it includes individuation distinctions between humans, animals and countable objects – all referents that have clear physical boundaries. I adopt the view that degrees of individuation are intrinsically based on an anthropocentric perspective and that individuation is "[…] the degree to which the interpretation of a NP involves a conception of an individuated entity" (Fraurud 1996: 68). The most individuated referents perceived by speakers are humans, sentient beings that have distinct personalities. Individuation then decreases as we conceptually move further away from being human (see Audring 2009: 125–127). The notion of individuation in this paper therefore does not solely build on the physical characteristics of referents.

In the psycholinguistic literature on number agreement, the semantic factor that I consider directly comparable to individuation has been called notional (or conceptual) number. Notional number is how speakers perceive referents in terms of numerosity. Some referents – regardless of their grammatical number – can be considered more notionally singular, while others are more notionally plural (see e.g. Lorimor 2007; Bock et al. 2012; Brehm & Bock 2013; Lorimor et al. 2016).

Lorimor (2007) researched agreement with conjoined noun phrases in English according to noun types and found semantic effects on agreement choices, both in a corpus study and with experiments on agreement production. Her research shows that English speakers produce more singular agreement with conjoined noun phrases that are of low individuation. The same pattern has been found in Dutch and German number agreement with conjoined noun phrases (Lorimor et al. 2016). Lorimor (2007) argues that this effect has to do with notional number; she showed with speaker ratings that mass nouns and abstract noun phrase conjunctions are more likely to be perceived as a single mass without boundaries.

We have seen that semantic properties of conjoined noun phrases can influence the choice between singular agreement or plural agreement in several languages. One main aim of this paper is to discover to what extent the same holds for Icelandic agreement, collecting quantitative data using conjoined noun phrases from the four levels of the Individuation Hierarchy. We will, however, also consider the effects of differing agreement targets – as they are central in confirming or identifying semantic agreement. I thus now turn to another typological hierarchy, namely the Agreement Hierarchy.

2.3 The Agreement Hierarchy

The Agreement Hierarchy is a typological generalization that can predict how likely it is to find semantic or syntactic agreement within a certain agreement domain, when compared with other domains in that same language (Corbett 1979; 1983). It thus represents

constraints on the distribution of agreement options, and is supported by a considerable amount of data from various languages (see Corbett 2006: 206 for a list of references).[5]

Let us now consider how this relates to agreement with conjoined noun phrases. Corbett considers resolution "a particular case of semantic agreement" in opposition to partial agreement (Corbett 1991: 268; see also Corbett 2006: 256). In his view, resolution is more semantically justified than partial agreement, as resolution is agreement with all conjuncts of the conjoined noun phrase (Corbett 1983: 210). The distribution of resolution when contrasted with partial agreement is therefore expected to follow the Agreement Hierarchy, which is presented in (17) followed by Corbett's definition of it in (18), repeated for reference:

(17)   The Agreement Hierarchy (Corbett 1979)
          attributive > predicate > relative pronoun > personal pronoun

(18)   Definition of the Agreement Hierarchy (Corbett 2006: 207)
          For any controller that permits alternative agreements, as we move rightwards along the Agreement Hierarchy, the likelihood of agreement with greater semantic justification will increase monotonically (that is, with no intervening decrease).

The likelihood of the agreement option that reflects semantic agreement increases as we move rightwards on the hierarchy and as the agreement domain grows larger. This means that if two positions on the hierarchy allow for the alternative agreements of resolution vs. partial agreement, such as is the case with predicates and personal pronouns in Icelandic, resolution should be more likely with personal pronouns than with predicates. Indeed, resolution has been found to follow the Agreement Hierarchy in Russian and Serbian/Croatian (Corbett 1983).

Another agreement pattern to consider here is the neuter singular agreement with a conjoined noun phrase that we saw in (11) above. If that type of agreement were to be considered semantic agreement in the same way as e.g. Scandinavian pancake agreement, we should find more neuter singular agreement with personal pronouns than predicate adjectives.

Note that the Agreement Hierarchy only makes predictions for agreement controllers for which resolution and partial agreement are both available. In subject-predicate agreement with conjoined noun phrases in Icelandic, resolution and partial agreement are both available for abstract nouns and mass nouns (i.e. low on the Individuation Hierarchy), while concrete countable nouns are said to exhibit only resolution (Friðjónsson 1991: 101).

One aim of this study is to evaluate data on agreement with conjoined noun phrases with the Agreement Hierarchy in mind, testing for two different domains of agreement, predicates and personal pronouns, while also considering individuation levels.[6]

2.4 Aims and hypotheses

It is clear that different factors come into determining the agreement choices with conjoined noun phrases. One is the factor of semantic or referential features (The Individuation Hierarchy), another is the difference between agreement targets (The Agreement

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[5] See also Smith (2015), who provides an interesting analysis of the Agreement Hierarchy and how sentence-internal effects of the hierarchy can be incorporated into a minimalist framework.

[6] Icelandic does not have relative pronouns and that level can therefore not be considered. The attributive position is beyond of the scope of the current paper, but is important for further research on agreement with conjoined noun phrases in Icelandic and its relation to the Agreement Hierarchy.

Hierarchy). As we have seen, there are four agreement strategies with conjoined noun phrases in Icelandic: resolution (semantic and syntactic), default neuter plural, partial agreement and neuter singular agreement. The two hierarchies provide means to learn more about the distribution of these options, and potentially uncover something about their nature – e.g. whether the neuter singular agreement can be considered semantically based.

The two main aims of this paper are:

- To examine whether the Individuation Hierarchy and the Agreement Hierarchy can predict the distribution of agreement forms with conjoined noun phrases in a fill-in-the-blanks survey. The hypothesis was that effects of both hierarchies would be found.
- To uncover what sort of strategies speakers of Icelandic use to determine agreement with conjoined singular noun phrases, by providing an empirically informed overview of agreement options and their distribution across individuation levels.

This paper presents data from an online fill-in-the-blanks survey. The survey was designed to elicit agreement choices with conjoined noun phrases that are available to Icelandic speakers with two types of agreement targets (predicate adjectives and personal pronouns), four individuation levels (human, animal, countable object, uncountable abstract) and all possible gender combinations.[7]

The idea that the semantic properties of conjuncts in a conjoined noun phrase may have an effect on the agreement choices in Icelandic is not new (see discussion on Friðjónsson 1991 above). However, this current approach differs in the sense that I include animacy distinctions in the Individuation Hierarchy, while also collecting quantitative data with a survey. Friðjónsson (1991) used collected examples and his own intuition along with the judgments of some of his colleagues and acquaintances. Another difference is that Friðjónsson (1991) focused on subject-predicate agreement only. In this study I also examine what choices people make in pronominal agreement with a preceding conjoined noun phrase in object position. This paper thus presents results for two types of agreement targets, making it possible to compare them and draw conclusions about Agreement Hierarchy effects, which can point to the use of semantically based agreement.

3 The survey

The survey that was used was a written online survey with fill-in-the-blanks agreement form elicitation. The variables that were accounted for in the survey are presented below:

(19)   Variables in the survey
    a.   Individuation level: human > animal > countable object > uncountable abstract
    b.   Gender combination: M + M, F + F, N + N, M + F, M + N, F + M, F + N, N + M, N + F
    c.   Agreement target: predicate adjective, personal pronoun

72 sentences were constructed for the survey – one for each unique combination of these variables in (19).[8] For example, the conjoined phrase íkorninn *og rottan* 'the squir-

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[7] As not all conjoined noun phrases are considered suitable for agreement by speakers, avoidance strategies (such as rephrasing) are also common. In this paper I will focus on instances of agreement and leave avoidance strategies aside.

[8] Some errors with regard to the gender of conjuncts were made: The condition human N + F is missing from the data and human N + M was repeated instead for both adjective (sentence 17 in Appendix) and pronoun (sentence 18 in Appendix) elicitation. The condition animal N + M is missing from the data and animal N + N was repeated instead for both adjective (sentence 31 in Appendix) and pronoun (sentence 32 in Appendix) elicitation. The condition abstract N + M is missing from the data and abstract N + F was repeated instead for both adjective (sentence 67 in Appendix) and pronoun (sentence 68 in Appendix) elicitation. A total of six

rel and the rat', is from the animal level of the Individuation Hierarchy and has the gender combination M + F (see Appendix for the full list of sentences). The agreement target elicited then depends on the construction of the whole sentence and the position of the blank.

Certain combinations of noun phrases are often avoided, especially when they are semantically different (Corbett 2006: 239). In some languages, conjoined noun phrases are only fully acceptable when the conjuncts have the same animacy status (Corbett 1991: 204). Therefore, the nouns that were chosen for the sentences were always matched in their semantic fields, i.e. both were always from the same level of the Individuation Hierarchy. They were chosen with the objective of making the combinations and the sentences themselves semantically plausible. The same combinations of conjuncts were used for both adjective and pronoun elicitation.

3.1 Test sentence construction

To elicit adjectives, each conjoined noun phrase was presented as the subject of either a main clause (19 sentences, cf. (20a)), or a subordinate clause (17 sentences, cf. (20b)). This was done to make the survey more varied with participants' focus in mind. The elicitation sentences had an empty space for the finite verb, followed by the infinitive of *vera* 'be' between brackets, which was the verb that was intended for the finite verb slot in all sentences. After the verb blank, another blank was presented followed by an adjective in the masculine singular nominative form between brackets.[9] Each sentence had a different adjective to suit the context. The adjectives that were chosen had separate gender paradigms for all genders in both numbers. An anonymous reviewer points out that the semantics of the predicate (whether it is distributive, collective etc.) may play a big role in number agreement (e.g. McCloskey 1991). Unfortunately, this was not controlled for specifically in the construction of the survey sentences.

(20)   Adjective elicitation
   a.   Condition: adjective animal M + N (sentence 29 in Appendix)
         Hlébarði-nn   og   tígrisdýr-ið __ < vera > __ < grimmur >.
         leopard-the.M and tiger-the.N   __ < be >   __ < ferocious.M.SG >
         'The leopard and the tiger < be > < ferocious >.'

   b.   Condition: adjective human N + M (sentence 13 in Appendix)
         Ég sé að   smábarn-ið   og afi-nn
         I   see that small.child-the.N and grandfather-the.M
         __ < vera > __ < týndur >   í   verslunarmiðstöðinni.
         __ < be >   __ < lost.M.SG > in mall.the
         'I see that the small child and the grandfather < be > < lost > in the mall.'

To elicit personal pronouns, the conjoined noun phrases were presented in an introductory sentence in object position followed by a sentence that had two blanks (as in (21)). The first blank was in subject position and was completely free in the sense that the participants could write whatever they liked.[10] The second blank was followed by the

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sentences with a unique combination of variables were missing from the survey. Instead, six unique combinations of variables were repeated. Fortunately, all missing variables had a gender combination equivalent, e.g. animal N + M is missing but animal M + N is not.

[9] I chose the masculine form of each adjective for the brackets, as it is the citation form used in dictionary entries. Another option would have been to use the stem, but the stem of adjectives in Icelandic has the same form as adjectives in the feminine singular and neuter plural. I therefore decided to stick to masculine singular, as I consider it the most neutral form available.

[10] An anonymous reviewer points out that this method entails a lack of control over the interpretation of the pronoun, and that singular forms might be observed in the results where the conjoined noun phrase is not

infinitive *vera* 'be' between brackets, and participants were expected to write the appropriate form of the verb.

(21)   Pronoun elicitation
       Condition: pronoun human F + M (sentence 10 in Appendix)
       Ég elska telpu-na og   dreng-inn. __ __ <vera> alltaf   brosandi.
       I   love girl-the.F and boy-the.M __ __ <be>   always smiling
       'I love the girl and the boy. __ __ <be> always smiling.'

It should be noted that in constructing the sentences, I took care not to include any agreeing elements that were specified for number or gender. In (21), for example, the present participle *brosandi* 'smiling', does not inflect at all. For both pronoun and adjective elicitation, participants were asked to fill in one word per blank, completing the sentence so that it felt correct. Additionally, they were instructed to write *ekkert passar* 'nothing fits' whenever they felt that choosing felicitous agreement forms was impossible.

   To give a feeling of how this setup can allow us to distinguish between agreement options, the sentence 63 from the Appendix, shown in (22) can be used:

(22)   Ánægja og   árangur   __ <vera> __ <mikilvægur>   í   lífinu.
       joy.F   and success.M __ <be>   __ <important.M.SG> in life.the
       'Joy and success __ <be> __ <important> in life.'

Possible fill-in answer forms for (22) and the type of agreement they would indicate are shown in (23):

(23)   a.   Resolution (or default neuter plural)
            Form: er-u   mikilvæg-Ø
                  is-PL important-N.PL

       b.   Partial agreement (with the second conjunct)
            Form: er   mikilvæg-ur
                  is.SG important-M.SG

       c.   Partial agreement (with the first conjunct)
            Form: er   mikilvæg-Ø
                  is.SG important-F.SG

       d.   Neuter singular agreement
            Form: er   mikilvæg-t
                  is.SG important-N.SG

3.2 Procedure and participants

The survey was set up using Google Forms and distributed online through social media. The order of sentences was randomized for each participant, using a built-in feature of Google Forms. No attempt was made to control the population apart from the fact that participants had to state that they were native Icelandic speakers. Information on age and gender was collected.

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in fact the antecedent This is a valid concern, but I believe that the semantic context of the sentences as well as the setup of the survey does guide participants in using pronouns in agreement with the conjoined noun phrase. The results seem to support this. Table 2 in section 4.1 shows that with human and animal conjoined noun phrases, where singular agreement is ungrammatical in predicate and pronominal agreement, we observe 98% (human) and 99% (animal) plural pronominal agreement.

3.3 Data processing

The data from the survey was cleaned up: spelling mistakes were corrected and additional symbols and comments that some participants had written were taken away. Whenever a participant had included two agreement options, the first option was chosen as their answer. Incomplete answers and answers that showed clear frustration with the task (e.g. comments like "I would put x, but I don't like it at all!") were replaced with *ekkert passar* 'nothing fits'. The answers were then coded for number (plural agreement, singular agreement, and avoidance) gender in plural agreement, and gender in singular agreement.

All answers that included something different than adjectives or personal pronouns were coded as avoidance. The avoidance category thus includes the use of other pronouns (the demonstrative pronouns þetta 'this' and *slíkt* 'such', the indefinite pronouns *bæði* 'both' and *hvor tveggja* 'each of two, both'), the relative conjunction *sem*, superordinate nouns (such as *feðginin* 'the father and daughter' for *faðirinn og ungabarnið* 'the father and the baby', and *áhöldin* 'the utensils' for *potturinn og pannan* 'the pot and the pan'), the repetition of individual conjuncts or the whole conjoined noun phrase, as well as all cases when people wrote *ekkert passar* 'nothing fits'.

3.4 Limitations

There are several limitations to this survey that should be addressed. The most obvious one is that an elicitation survey of this type only provides secondary linguistic data, and all results must be evaluated with that fact in mind. Additionally, the survey setup may give rise to an effect of metalinguistic awareness as to what should be put in the blanks – even when it may not feel right in every context. The survey did not contain any fillers, and most participant undoubtedly knew what was being tested. However, it should be noted that agreement with conjoined noun phrases in Icelandic has not been subject to prescriptivism, and the use of e.g. resolution instead of agreement with one conjunct for abstract nouns (considered a novelty by Friðjónsson 1991) is not stigmatized at all. Furthermore, the task may have yielded forced agreement choices with conjuncts that people would otherwise have avoided by recasting the phrase. The option to write *ekkert passar* 'nothing fits' was an effort to counter that effect. In spite of these limitations, a fill-in-the-blanks survey like the one described above is very useful to detect what factors may or may not influence agreement choices with conjoined noun phrases.

4 Results

A total of 418 speakers completed the survey, 13 were excluded due to incomplete answers or obvious misunderstanding of the instructions. Out of the remaining 405 participants, 318 were women, 86 men, and 1 was genderqueer. The average age of participants was 47.5 years, and the participant age ranged from 18 to 81 years.

In the following pages I will present the results, starting with number agreement only and then moving on to gender agreement choices. In section 4.1 the distribution of plural agreement, singular agreement, and avoidance with conjoined noun phrases will be shown. Section 4.2 is dedicated to illustrating which genders are used in plural agreement, highlighting instances of neuter plural agreement with M + M and F + F conjoined noun phrases. Section 4.3 presents which genders participants used in singular agreement, distinguishing further between partial agreement and neuter singular agreement. All sections include Likelihood Ratio Tests of generalized linear models where effects of the Individuation Hierarchy and the Agreement Hierarchy on each agreement option are evaluated by comparing the fit of a full model that includes the two distinctions to a null model that does not take individuation and agreement target into account. Furthermore, for each agreement option, the fit of the full model is compared to a model that includes agreement target and

individuation, but where individuation is coded by a countable/uncountable distinction only. In section 4.4 I will give a short summary of the results.

4.1 Number agreement

The first thing to look at is the distribution of plural and singular agreement in the data. For the four levels of the Individuation Hierarchy as well as the two agreement target types, the overall distribution of plural agreement, singular agreement, and avoidance in the survey is represented in Table 1 and visualised in Figure 1.

Table 1 and Figure 1 show that conjoined noun phrases from different levels of the Individuation Hierarchy have varying distributional patterns of plural agreement, singular agreement, and avoidance. The results for the human and animal levels are comparable, showing mostly plural agreement and more avoidance with the personal pronoun targets. For the two lower levels – object and abstract – there is less plural agreement

Table 1: Distribution of agreement choices by individuation level and agreement target.

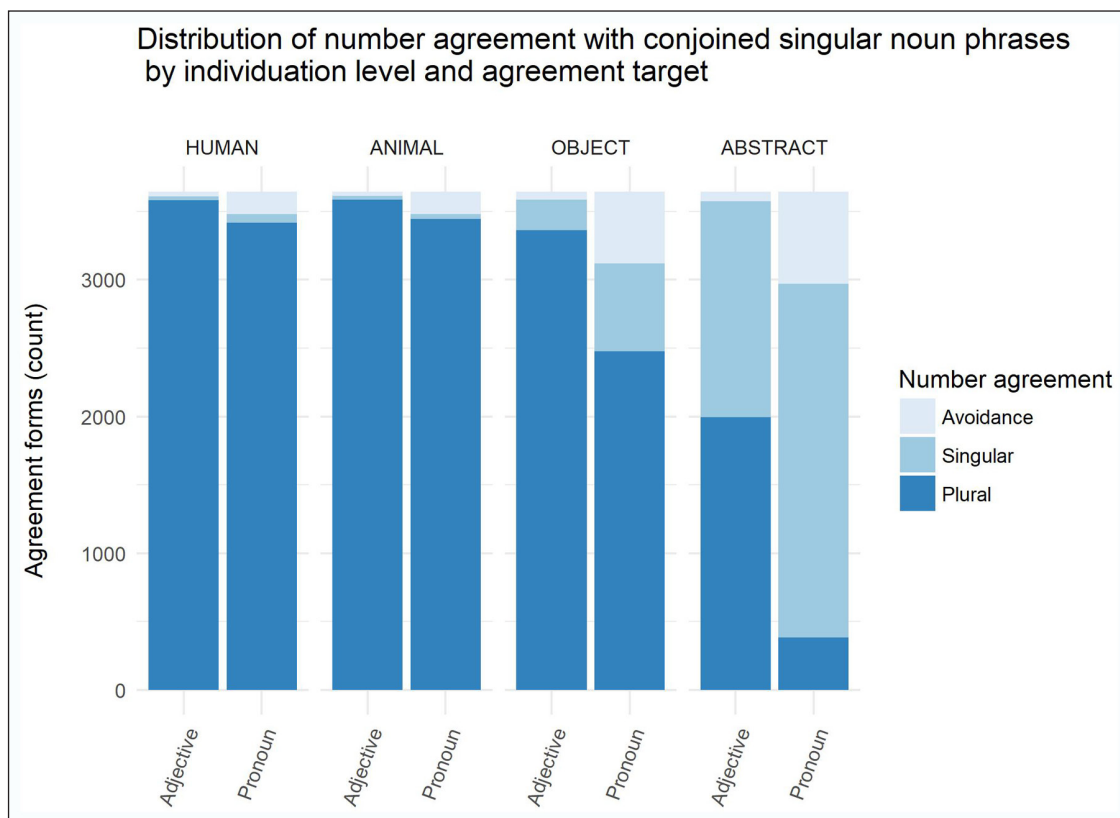| | | Individuation level and agreement target | | | | | | | | |
		Human		Animal		Object		Abstract		Total
		adj	pron	adj	pron	adj	pron	adj	pron	
	Plural	3581	3416	3586	3444	3361	2475	1995	382	22240
	Singular	29	62	25	34	224	643	1577	2589	5183
	Avoidance	35	167	34	167	60	527	73	674	1737
Total		3645	3645	3645	3645	3645	3645	3645	3645	29160

Figure 1: Distribution of singular agreement, plural agreement, and avoidance by individuation level and agreement target.

and more avoidance is observed with personal pronoun targets than predicate adjectives. The contrast between the two agreement target types is more pronounced for the abstract level than the object level. Excluding all instances of avoidance, the percentage of plural agreement by individuation level and agreement target is shown in Table 2.[11]

As Table 2 illustrates, plural forms are favoured by speakers for human and animal conjoined noun phrases, with speakers choosing 98.2–99.3% plural for the two animate levels of the Individuation Hierarchy. Note that in the cases where an agreement form is chosen (that is, when avoidance strategies are not used), there is no particular difference in the percentage of plural agreement between the two agreement targets, as human and animal conjoined noun phrases require plural agreement in predicate and pronominal agreement (see discussion in section 2.1 above). In contrast, plural agreement is much more prominent with predicate adjectives than personal pronouns with both object and abstract conjoined noun phrases.

A generalized linear mixed effects analysis of the relationship between number agreement, agreement target, and individuation was performed. Instances of avoidance were not included in the analysis. As fixed effects, I entered agreement target and individuation into the model. As random effect, I included an intercept for speaker. For all analyses in the results section I used R (R Core Team 2018) and lme4 (Bates et al. 2015).

A Likelihood Ratio Test (LRT) revealed that when compared with a null model that only had a random intercept for speaker, including agreement target as a fixed effect improved the fit of the model significantly (χ^2 (1) = 742.4, p < 2.2e-16). Including the additional fixed effect of individuation level further improved the model, again with a significant difference (χ^2 (3) = 13314.4, p < 2.2e-16). The variables that represent the Agreement Hierarchy and the Individuation Hierarchy thus clearly improve the fit of the model, indicating that both hierarchies matter in the distribution of singular vs. plural agreement.

When the full model is compared with a full model where the individuation variable has been coded to only include distinctions between countable (human, animal, object) and uncountable conjuncts (abstract), a Likelihood Ratio Test shows that the model with four individuation levels is a significantly better fit (χ^2 (2) = 1653.7, p < 2.2e-16).

However, as we have seen, gender is an indispensable component in the analysis of agreement options with conjoined noun phrases in Icelandic. A superficial look at the number agreement patterns cannot distinguish between the four agreement options that are of interest. In order to get a more detailed picture, we now turn to the gender forms that are found in plural agreement with conjoined noun phrases.

4.2 Gender in plural agreement

The focus of this section is on which gender is chosen whenever plural agreement is found. Remember that the gender resolution rules that have been described for Icelandic are as follows: Whenever two conjuncts have the same grammatical gender, that same

Table 2: Percentage of plural agreement (vs. singular agreement) by individuation level and agreement target.

Human		Animal		Object		Abstract	
adj	**pron**	**adj**	**pron**	**adj**	**pron**	**adj**	**pron**
N = 3610	N = 3478	N = 3611	N = 3478	N = 3585	N = 3118	N = 3572	N = 2971
99.2%	98.2%	99.3%	99.0%	93.7%	79.4%	55.9%	12.8%

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[11] Overall, more avoidance strategies were used with the personal pronoun targets, undoubtedly because the first blank was left unrestricted.

gender is used in resolution. For all non-identical combinations of gender, neuter is used. Table 3 shows which gender forms participants used in plural agreement, sorted by the gender combination of the conjoined noun phrases. The most frequent gender value for each combination is shaded, and the expected gender value (according to the gender resolution rules) is in boldface:

Looking at all combinations of different gender values (F + M, F + N, M + F, M + N, N + F, N + M), we can calculate that the overall number of plural forms is 14124 (total number of singular: 4506). Out of these, 13950 are neuter plural – or 98.7% of the plural agreement forms for conjoined noun phrases that have conjuncts of two different genders. This is exactly what has been predicted by the gender resolution rules: non-identical gender combinations yield neuter plural agreement.

We now turn to the gender congruent conjoined noun phrases. In the case of N + N, the results are in line with what was expected. Out of a total of 3159 plural forms (total number of singular: 891), 3154 are neuter plural (99.8%). A different pattern, however, is observed for the feminine and masculine. The total number of plural forms for two feminine conjuncts is 2502 (total number of singular: 738). Out of those forms, only 1458 (58.3%) are in the expected feminine plural. 1043 (41.7%) of the plural forms for F + F appear in the neuter plural. Gender agreement with the third congruent combination of gender in the survey, M + M, patterns in a similar way: out of 2454 plural forms (total number of singular: 786), 1881 (76.7%) are in the expected masculine plural. The remaining plural forms are in the neuter: 573 (23.3%). It is thus obvious that the resolution rules described for Icelandic do not always hold.

It is of interest to see what factors might play a role in when neuter plural is used with M + M and F + F conjoined noun phrases. Table 4 can give some idea of what is going on, although we should keep in mind that it shows results for only one conjoined noun phrase per gender and individuation level combination (e.g. M + M animal is represented by *minkurinn og broddgölturinn* 'the mink and the porcupine').

As illustrated by Table 4, the neuter plural is not often found for the human conjoined noun phrases (3.7% for F + F and 6.9% for M + M). In the animal category, however, there is a difference between F + F and M + M: Neuter plural is used much more with the feminine conjoined phrases, 64.4% for F + F vs. 18.8% for M + M. The object level of the Individuation Hierarchy shows comparable percentages of neuter plural between the two gender combinations (41.4% for F + F and 36.3% for M + M). Finally, the neuter plural is more prominent with the feminine conjuncts in the abstract category (78.5% vs. 51.5% for M + M).

Table 3: Frequency of gender values of plural agreement forms by gender combination.

		Plural agreement gender				
		F	M	N	Singular	Total
Gender combination	F+F	**1458**	1	1043	738	3240
	F+M	2	27	**2585**	626	3240
	F+N	16	1	**2497**	726	3240
	M+F	8	8	**2524**	700	3240
	M+M	0	**1881**	573	786	3240
	M+N	0	19	**2215**	1006	3240
	N+F	18	1	**1990**	1231	3240
	N+M	0	74	**2139**	217	2430
	N+N	1	4	**3154**	891	4050
Total		1503	2016	18720	6921	29160

Looking at the overall distribution of neuter plural by agreement target with M + M and F + F conjoined noun phrases in Table 5 we see that it is used more with predicate adjectives than personal pronouns.

There thus appear to be three factors that may be important for the distribution of the neuter plural with M + M and F + F conjoined noun phrases: Individuation level, gender of the conjuncts, and agreement target. As we are mainly concerned with the Agreement Hierarchy and the Individuation Hierarchy in this paper, I performed a generalized linear mixed effects analysis of the relationship between gender in plural agreement with F + F and M + M conjoined noun phrases (the gender variable was coded as neuter/non-neuter), agreement target, and individuation. As before, the fixed effects were agreement target and individuation. As random effect, I included an intercept for speaker.

A Likelihood Ratio Test revealed that including agreement target as a fixed effect improved the model significantly (χ^2 (1) = 180.06, p < 2.2e-16) when compared with a null model that only had a random intercept for speaker. The full model, including the additional fixed effect of individuation level, failed to converge. However, a comparison of the null model (with only an intercept for speaker) and a model with individuation level (but not agreement target) showed that individuation improves the fit significantly (χ^2 (3) = 1236.9, p < 2.2e-16). The variables that represent the Agreement Hierarchy and the Individuation Hierarchy thus both improve the fit of a model of the distribution of neuter vs. masculine/feminine in plural agreement with conjoined noun phrases that have the gender combinations F + F or M + M, but the effects cannot be evaluated together due to convergence problems. I further compared the individuation model with a model where the individuation variable was coded to only differentiate between countable and uncountable, and a Likelihood Ratio Test confirms that the four-level Individuation Hierarchy gives a significantly better fit (χ^2 (2) = 858.75, p < 2.2e-16).

4.3　Gender in singular agreement

We now have seen what gender the participants used in plural agreement with conjoined noun phrases. This section gives the results for what gender was used in agreement when singular agreement forms are used. Table 6 shows the frequency of each of the three genders for singular agreement forms in the survey results, sorted by the gender combination

Table 4: Percentages of neuter plural out of all plural forms by gender combination and individuation level.

	F+F	M+M
Human	3.7% (N = 777)	6.9% (N = 780)
Animal	64.4% (N = 778)	18.8% (N = 786)
Object	41.4% (N = 621)	36.3% (N = 570)
Abstract	78.5% (N = 326)	51.5% (N = 318)

Table 5: Percentages of gender in plural agreement with M+M and F+F conjoined noun phrases by agreement target.

	Predicate adjective (N = 2926)	Personal pronoun (N = 2030)
M./F. PL.	60%	80%
N.PL.	40%	22%

of the conjoined noun phrases.[12] The most frequent gender value for each combination is shaded, and the gender of the second conjunct is in boldface.

Table 6 shows that, when participants did not choose plural forms, the neuter singular is the most common agreement value for conjoined noun phrases of all gender combinations. For the conjoined noun phrases that have at least one neuter conjunct, the neuter singular form could be analysed as agreement with the first or second conjunct. However, previous research on Icelandic conjoined noun phrase agreement suggests that partial agreement in Icelandic is usually found with the linearly nearest (in this case: second) conjunct (Friðjónsson 1991: 86).

The neuter is used very frequently even when the first conjunct is neuter and the second conjunct is masculine (80% of singular forms are neuter, N = 115) or feminine (90% of singular forms are neuter, N = 1040). A great number of the instances of neuter singular agreement in the data might represent the agreement strategy that was shown with example (11) in 2.1 above.

Fortunately, we can distinguish between partial agreement and neuter singular agreement by separately considering the agreement patterns with conjoined noun phrases that include no neuter conjunct. Table 7 shows how partial and neuter singular agreement is distributed by individuation and agreement target with F + F, M + F, F + M and M + M conjoined noun phrases.

As we are interested in knowing whether the Agreement Hierarchy holds for partial agreement vs. plural agreement in Icelandic, we can calculate the overall percentages of partial agreement vs. plural agreement by agreement target where there appears to be certain optionality in agreement. That is, with object and abstract conjoined noun phrases. The distribution of partial and plural agreement is shown in Table 8.

There is slightly more plural agreement with personal pronouns than predicate adjectives, but the difference is very small. Let us now look at what types of partial agreement we can find in the data, by zooming in on the M + F and F + M conjoined noun phrases where first and second conjunct agreement can be observed directly. Table 9 shows the

Table 6: Frequency of gender values for singular agreement forms by gender combination.

| | | Singular agreement gender | | | | |
		F	M	N	Other forms	Total
Gender combination	F+F	**142**	11	369	2718	3240
	F+M	20	**26**	373	2821	3240
	F+N	15	2	**544**	2679	3240
	M+F	**54**	14	453	2719	3240
	M+M	15	**63**	444	2718	3240
	M+N	8	0	**799**	2433	3240
	N+F	**104**	0	936	2200	3240
	N+M	2	**21**	92	2315	2430
	N+N	9	9	**656**	3376	4050
Total		369	146	4666	23979	29160

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[12] Keep in mind that the mistakes that were made in the sentence construction (see section 3, footnote 8), as this is where they affect the frequency numbers. An example of this is that the N + M abstract category is missing, which explains the very low number of singular forms for N + M compared to the other gender combinations.

Table 7: Percentage of agreement choices with F+F, M+F, F+M, M+M conjoined noun phrases by agreement target and individuation level.

	Human		Animal		Object		Abstract	
	adj.	**pron.**	**adj.**	**pron.**	**adj.**	**pron.**	**adj.**	**pron.**
M./F. SG.	0.06%	1.3%	0.4%	0.2%	0.9%	2.9%	13.4%	3.9%
	1	20	6	3	15	39	211	50
N. SG.	0%	0%	0%	1.5%	1.6%	23.3%	18.2%	78.1%
	0	0	0	23	25	316	288	987
PL.	99.9%	98.7%	99.6%	98.3%	97.5%	73.8%	68.4%	17.9%
	1604	1545	1596	1509	1553	999	1081	226
Total	100%	100%	100%	100%	100%	100%	100%	100%
	N = 1605	N = 1565	N = 1602	N = 1535	N = 1593	N = 1354	N = 1580	N = 1263

Table 8: Percentage of partial agreement and plural agreement with object and abstract conjoined noun phrases (F+F, M+F, F+M, M+M) by agreement target.

	Predicate adjective (N = 2860)	**Personal pronoun (N = 1314)**
Partial agreement	**7.9%** (226)	**6.8%** (89)
Plural agreement	**92.1%** (2634)	**93.2%** (1225)

Table 9: Rates of first and second conjunct agreement with M+F and F+M object and abstract conjoined noun phrases.

	First conjunct	**Second conjunct**
M+F and F+M (N = 105)	**30.5%** (32)	**69.5%** (73)

percentage of each partial agreement option, as well as including the numbers per individuation level and agreement target. There was a total of 9 cases of apparent partial agreement with human and animal conjoined noun phrases (2 with the first conjunct, 7 with the second). I have excluded those from the calculations.

I performed a generalized linear mixed effects analysis of the relationship between plural vs. partial agreement, agreement target, and individuation. I only included data from the F+F, M+F, F+M, M+M combinations and neuter singular agreement was excluded from the analysis. As before, the fixed effects were agreement target and individuation. As random effect, I included an intercept for speaker.

A Likelihood Ratio Test for plural agreement vs. partial agreement shows that including agreement target as a fixed effect improved the model significantly (χ^2 (1) = 15.032, p = 0.0001) when compared with a null model that only had a random intercept for speaker. When the additional fixed effect of individuation level is included, the model improves further, and that difference is also significant (χ^2 (3) = 780.209, p < 2.2e-16). The variables that represent the Agreement Hierarchy and the Individuation Hierarchy improve the fit of the model, which indicates that both hierarchies matter in the distribution of partial vs. plural agreement. When the full model is then compared with a full model with an individuation variable that is coded to only differentiate between countable and uncountable, a Likelihood Ratio Test shows that a four-level individuation variable gives a significantly better fit (χ^2 (2) = 55.428, p = 9.205e-13) than only assuming a countable/uncountable distinction.

Figure 2 shows the frequency distribution of neuter singular by agreement target and individuation level. Like before, we only look at neuter singular agreement with conjoined noun phrases that include no neuter conjunct.

A generalized linear mixed effects analysis of the relationship between neuter singular agreement vs. all other forms (plural agreement and partial agreement), agreement target, and individuation was performed. I only included data from the F + F, M + F, F + M, M + M combinations. I entered agreement target and individuation as fixed effects. As random effect, an intercept for speaker was included.

A Likelihood Ratio Test for neuter singular agreement vs. all other forms shows that including agreement target as a fixed effect improved the model significantly (χ^2 (1) = 927.16, p < 2.2e-16) when compared with a null model that only had a random intercept for speaker. When the additional fixed effect of individuation level is included, the model does not converge, and a model that only includes individuation does no converge either. However, a simpler countable/uncountable distinction allows the model to converge: A model with a countable/uncountable distinction and agreement target is compared the reduced model with only agreement target gives a significantly better fit of the data (χ^2 (1) = 3433.85, p < 2.2e-16). The variables that represent the Agreement Hierarchy and the Individuation Hierarchy (at least a countable/uncountable distinction) improve the fit of the model. This indicates that both hierarchies matter in the distribution of plural agreement vs. neuter singular agreement.

4.4 *Summary of results*

We have now seen how the four agreement options pattern in the survey data. At every turn, the two typological hierarchies that this paper set out to test – the Agreement Hierarchy and the Individuation Hierarchy – provide a significantly better fit of the data
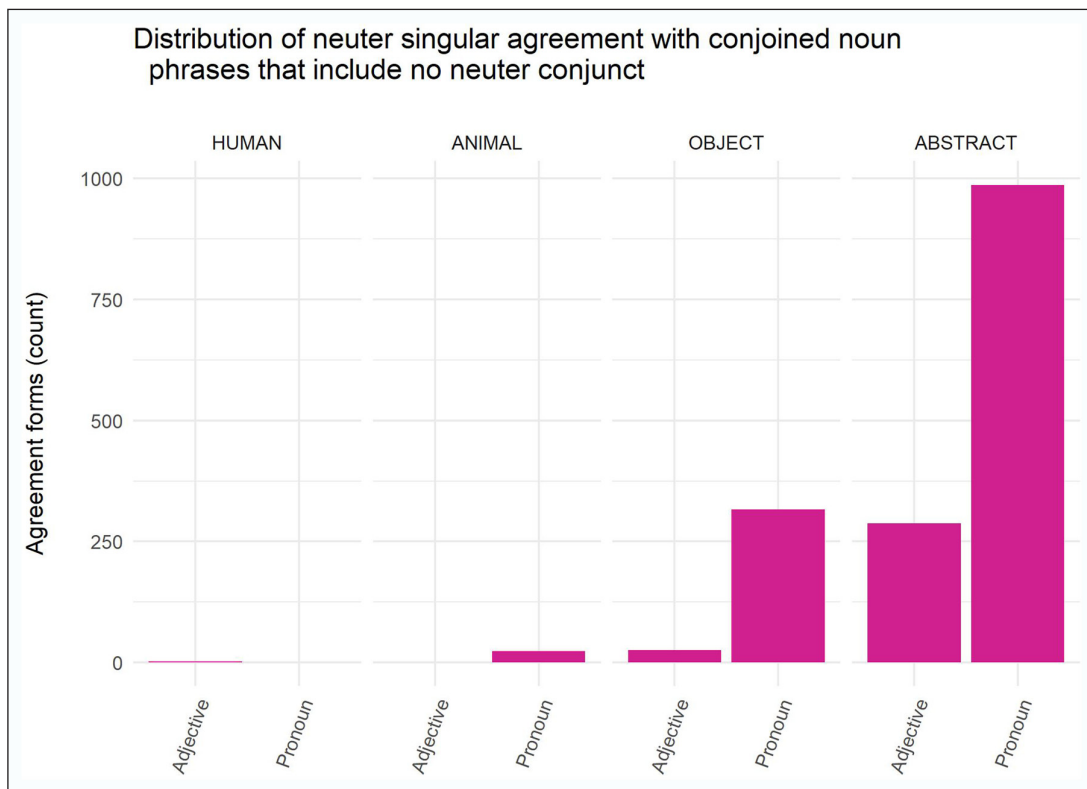

Figure 2: Distribution of neuter singular agreement with conjoined noun phrases that include no neuter conjunct by individuation level and agreement target.

than assumed under the null hypothesis (i.e. that the hierarchies have no effect on the distribution of agreement options). This is true for the distribution of singular and plural agreement, the distribution of neuter plural agreement with M + M and F + F, the distribution of partial agreement vs. plural agreement and the distribution of neuter singular agreement vs. plural agreement.

Additionally, when the full models are compared with models in which the individuation variable distinguishes only between countable and uncountable, the model with the four-level individuation variable always gives a better fit – suggesting that using more fine-grained individuation distinctions can provide more information about the distribution of options in conjoined noun phrase agreement than relying on a countable/uncountable distinction.

5 Discussion

In this research, the first objective was to examine whether two typological hierarchies, the Individuation Hierarchy and the Agreement Hierarchy, can predict the distribution of agreement form choice with conjoined noun phrases in Icelandic. The results of the agreement form elicitation survey show that the distribution of agreement choices is indeed influenced by both typological hierarchies. In section 5.1 I will briefly discuss the Individuation Hierarchy effects on plural vs. singular agreement. In 5.2 I will focus on the prevalent strategy of using neuter plural where not expected, and in 5.3 I will discuss resolution as semantic agreement. In section 5.4 I will focus on what the Agreement Hierarchy can tell us about the neuter singular agreement in the results and argue for a semantic agreement analysis. The second aim of this paper was to provide an empirically informed overview of the agreement choices that are available for Icelandic speakers in agreement with conjoined singular noun phrases. This overview will be given in 5.5 along with a unified description of the strategies that Icelandic speakers use to determine agreement.

5.1 Individuation effects

As the results of the survey readily show, the availability of plural agreement with conjoined noun phrases in Icelandic is sensitive to the individuation of the conjuncts. Almost no singular agreement is observed with the most individuated conjoined noun phrases. This survey confirms that, in predicate and pronominal agreement in Icelandic, plural agreement is the only option for the human and animal levels of the Individuation Hierarchy.[13] For the two other levels, countable object and uncountable abstract, a pronounced drop is found in the frequency of plural agreement. Singular agreement with conjoined noun phrases (including both partial agreement and neuter singular agreement) thus emerges as an option with decreased individuation – especially when the agreement target is a personal pronoun (further discussed in 5.3).

5.2 Neuter plural with M+M and F+F: Resolution or default agreement?

The results of the survey show a pervasive tendency to use neuter plural when there should, according to the resolution rules described for Icelandic, be either masculine plural or feminine plural agreement (i.e. with M + M and F + F conjoined noun phrases). Interestingly, the use of neuter plural in agreement with M + M or F + F conjoined noun phrases has also been reported on for Old High German, which had the same resolution

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[13] Note that this statement, due to the limited scope of the present paper, only applies to predicate adjectives that follow conjoined noun phrases in subject positition and personal pronouns in subject position that are controlled by conjoined noun phrases in the preceding sentence, i.e. where the agreement target follows the controller. Friðjónsson (1991: 97–98) shows several examples of partial agreement with conjoined HUMAN noun phrases where the target precedes the controller, suggesting that word order plays a prominent role in the availability of partial agreement in Icelandic.

pattern as Icelandic (Hock 2009). A similar pattern also emerged in a fill-in-the-blanks elicitation experiment on Slovenian conjoined noun phrase agreement, where the default masculine plural was used with F.PL + F.PL (14%) and N.PL + N.PL (16%) (Marušič et al. 2015: 48). Comparable rates of masculine plural were found in a subsequent large-scale elicitation study that investigated agreement patterns with plural conjoined noun phrases in Bosnian/Croatian/Serbian and Slovenian (Willer-Gold et al. 2016: 13).

The instances of neuter plural in Icelandic conjoined noun phrase agreement with F + F and M + M could be analysed as a case of "normal case default" agreement in the sense of Corbett & Fraser (2000: 71). Neuter is the form that is retrieved when a more specific value cannot be found and the most typical value is chosen as a result, in this case the most typical value in agreement with conjoined noun phrases. When speakers fail to find or do not compute the more specific values involved in the gender resolution of M + M and F + F singular conjoined noun phrases, they fall back on the default: neuter. Similarly, Willer-Gold et al. (2016) have proposed on the basis of comparable results from the Slavic language family that default agreement and resolution should be kept apart as two different agreement strategies with conjoined noun phrases. In Bosnian/Croatian/Serbian and Slovenian, they argue, resolution is found when the feature values of each conjunct are accessed – rendering F.PL or N.PL with F + F and N + N conjoined noun phrases, while the default masculine plural is a fixed value for agreement with the whole conjoined noun phrase when the conjuncts are not evaluated. The present Icelandic data supports this proposal, as the same pattern manifests itself. This leads to the conclusion that neuter plural is the default value for agreement with the whole conjoined noun phrase in Icelandic and that it is different in nature from resolution, which by definition involves feature evaluation of the conjuncts. However, these two types of agreement can only be kept apart in the analysis of agreement with F + F and M + M conjoined noun phrases.

In addition, the results of the present study indicate that the use of the neuter plural default may be sensitive to both individuation and gender combination in Icelandic, perhaps reflecting differing accessibility in feature retrieval. The percentage of default neuter plural agreement varies depending on which individuation level the conjoined noun phrase belongs to (the human level stands out especially in allowing it very infrequently) and it is more frequently found with F + F than M + M. However, more research is needed to validate effects of the Individuation Hierarchy and/or gender combination on resolution vs. default neuter plural, as the survey reported on here only includes one pair of nouns for each gender combination and individuation level.

Another factor to consider, as pointed out by an anonymous reviewer, is that differing declension classes of conjuncts might influence the use of neuter plural. Declension class was not controlled for in this study, and a post hoc exploration shows that there are no discernible patterns based on whether the declension classes differ or not. However, I do not rule out that effects in that direction might be uncovered in a study that deals specifically with agreement with gender-congruent conjoined noun phrases.

5.3 Resolution as semantic agreement

In 2.3, Corbett's (1991, 2006) notion of resolution as semantic agreement was presented. The predictions that the Agreement Hierarchy makes with regard to the distribution of resolution (that is, agreement with all conjuncts) as opposed to partial agreement are borne out in the Icelandic survey data presented here. Although the difference in the rate of resolution between agreement targets is negligible (only 1.1%, as seen in Table 8 in the results), more resolution is found with personal pronouns than predicate adjectives. Using the data where partial agreement and neuter singular agreement can be kept apart (with F + F, M + F, F + M and M + M conjoined noun phrases), we see that partial agree-

ment is scarce in the survey results, especially when contrasted with previous accounts and descriptions of Icelandic conjoined noun phrase agreement (e.g. Friðjónsson 1991).[14] In line with Friðjónsson (1991), more partial agreement is found with the second (nearest) conjunct than the first conjunct in the survey results presented here. However, partial agreement in Icelandic merits more in-depth research and analysis.

5.4 *Neuter singular as semantic agreement*

Whenever singular agreement choices are observed in the data, the neuter gender is used in the overwhelming majority of cases, also when there is no neuter conjunct present. As noted in section 2.1, neuter singular is an agreement default in Icelandic, and is used e.g. with faulty agreement controllers such as oblique subjects, infinitive phrases and other controllers that lack agreement features (Rögnvaldsson 1990: 53). It would therefore seem sensible to analyse the prevalent neuter singular with conjoined noun phrases as a backstop value that arises with problematic agreement controllers, instances of what could be analysed as an "exceptional case default" as it is defined in Corbett and Fraser (2000), or failed agreement.

However, the results of this present survey show that the distribution of neuter singular with conjoined noun phrases follows the Agreement Hierarchy. It is markedly more frequent with personal pronouns than with predicate adjectives, which is the pattern that is expected for semantically motivated agreement. Additionally, neuter singular agreement is only present with conjoined noun phrases from the two lowest levels of the Individuation Hierarchy and it is more frequent with abstract than object. The distribution of it thus suggests that we are dealing with some kind of semantic agreement. Referents of low individuation trigger neuter singular agreement.

I argue that the neuter singular agreement with conjoined noun phrases in the data should be seen as semantic default agreement that is triggered by referents of low individuation – comparable to Scandinavian pancake agreement (Enger 2004; 2013), singular agreement based on notional number in English, Dutch, and German (Lorimor 2007; Lorimor et al. 2016), generic neuter singular with indefinite mass nouns in Faroese (Petersen 2009), as well as the semantically motivated use of neuter singular in pronominal agreement with referents of low individuation in e.g. Dutch and German (Audring 2009; Kraaikamp 2017). In other words, I believe that the same underlying phenomenon is at work in all these languages.

Although an "exceptional case" backstop default (i.e. non-agreement) analysis of neuter singular agreement with conjoined noun phrases in Icelandic is entirely possible, especially because it shares a value with the non-agreement default in Icelandic, I conclude that it is not adequate to account for the data distribution across agreement targets and individuation levels as well as the similarities with patterns in related languages. I therefore think that the neuter singular is best analysed as semantic default agreement. Under this analysis, referents of low individuation can trigger the use of a neuter singular form.

I believe that this form is similar to the neuter plural default (see 5.2) in the sense that no/incomplete gender feature evaluation takes place – rendering the default neuter. What sets this form apart from the neuter plural default is that the perceived semantic singularity connected to low-individuation conjoined noun phrases (see e.g. Lorimor et al. 2016) can override the structural plurality of the conjoined controller itself, yielding a semantically motivated singular form. I thus think that the singular number displays semantic agreement, while the neuter gender value is a default.

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[14] It is possible that there is in fact more partial agreement with conjoined noun phrases that include a neuter conjunct than with the M + M, F + M, M + F and F + F conjoined noun phrases. It is impossible to say, however, as the two agreement strategies cannot be separated.

The use of neuter singular agreement for low-individuation referents is – as far as we know – relatively restricted in Icelandic. However, some additional examples from spontaneous spoken language show that there is indeed variation in agreement with non-conjoined noun phrases. In (24) neuter singular is used where feminine (24a), masculine (24b) or neuter plural (24c) pronominal agreement would have been expected:

(24)　a.　Ég er　rosalega hrifin af piparrótarsósu.　　　　Mér finnst það　　ganga
　　　　　I　am very　　fond　of pepper.root.sauce(F).SG I　　think it.N.SG goes
　　　　　með öllu.
　　　　　with everything
　　　　　'I like horse-radish sauce very much. I think it goes with everything.'

　　　b.　Það er til　　　nóg　　af humri　　　ef þið viljið grípa　í　það.
　　　　　it　is available enough of lobster(M).SG if you want to grab in it.N.SG
　　　　　'There is enough lobster if you want to grab it.'

　　　c.　Hún kann　ensk　lög　　　　bara af því að horfa á　það　á Youtube.
　　　　　she　knows English song(N).PL just　of it　to　watch on it.N.SG on Youtube
　　　　　'She knows English songs just by watching it on Youtube.'

An additional example shows that neuter singular can show up with agreement controllers that have a situational interpretation (as is often the case with pancake agreement in Mainland Scandinavian). Example (25a) was observed in a conversation, while (25b) is a constructed example.

(25)　a.　Mér　finnst of　mikil-Ø　　málning　ekki falleg-t.
　　　　　I.DAT find　too much-F.SG paint(F).SG not　beautiful-N.SG
　　　　　'I find (wearing) too much make-up not beautiful.'

　　　b.　Mér　finnst of　mikil-Ø　　málning　ekki falleg-Ø.
　　　　　I.DAT find　too much-F.SG paint(F).SG not　beautiful-F.SG
　　　　　'I find too much make-up not beautiful.'

I asked several speakers of Icelandic to assess and compare the two sentences in (25). Their answers (and my own intuition) indicate that there is a subtle difference in meaning between the two. The neuter singular agreement in (25a) indicates that the focus is on the act of wearing too much make-up, while the use of feminine singular agreement (25b) changes the reading and places focus on the make-up itself. Note, however, that this is an informal observation and needs to be examined more closely. In any case, it is clear that this use of the neuter is heavily context dependent.

5.5 Agreement patterns with conjoined singular noun phrases in Icelandic

Over the course of this paper, several agreement options with conjoined singular noun phrases in Icelandic have been discussed. To provide an overview, I will now summarize the strategies that speakers use to determine agreement with conjoined singular noun phrases in Icelandic.

(26)　　**Pattern 1: Semantic resolution (based on "natural" gender)**
　　　　Two females → F.PL
　　　　Two males → M.PL
　　　　Mixed gender group → M.PL

Semantic resolution is the type of resolution where knowledge about a referent's "natural" gender overrides the syntactic resolution rules. In example (27), reliance on grammatical

gender features would produce neuter plural agreement, but as it is clear that the poet is (most likely) a woman, the conjoined noun phrase is treated as if it has the gender combination F + F rather than N + F:

(27)   Semantic resolution (based on "natural" gender)
        Ófrísk-a   skáld-ið   og Jóna   eru ánægð-ar.
        pregnant-N.SG poet-the.N.SG and Jóna(F)[SG] are pleased-F.PL
        'The pregnant poet and Jóna (woman's name) are pleased.'

Obviously, this type of agreement is restricted to sex-differentiated referents, i.e. humans and higher animals. Semantic resolution was not included in the survey as such, but in many cases with human conjoined noun phrases there is no way to distinguish between semantic and syntactic resolution (e.g. with *karlinn*.M og *konan*.F 'the man and the woman').

(28)   **Pattern 2: Syntactic resolution**
        M + M → M.PL
        F + F → F.PL
        N + N → N.PL
        All combinations of gender → N.PL

Syntactic resolution is found when the grammatical feature value of each conjunct is accessed and used to compute agreement. In contrast to semantic resolution, there is no real-life semantic gender that can interfere with the calculation of an appropriate gender form. This agreement pattern is found on all levels of the Individuation Hierarchy. Example (29) shows syntactic resolution, representing a real response from the survey (sentence 37 in Appendix). The two masculine singular conjuncts yield masculine plural agreement on the predicate:

(29)   Syntactic resolution
        Diskur-inn og bolli-nn   eru blá-ir.
        plate-the.M and cup-the.M are blue-M.PL
        'The plate and the cup are blue.'

As we have seen, however, the calculation which we would expect according to the gender resolution rules in Icelandic does not always take place. In the survey response exemplified in (30), we find a default neuter plural with two masculine conjuncts where masculine plural would have been expected:

(30)   Neuter plural default
        Diskur-inn og bolli-nn   eru blá-Ø.
        plate-the.M and cup-the.M are blue-N.PL
        'The plate and the cup are blue.'

This pattern appears to represent a process in which the system does not access the gender features of individual conjuncts. This pattern is found on all levels of the Individuation Hierarchy, but only sporadically for human referents. In line with Willer-Gold et al. (2016), I consider it a fixed agreement value with the whole conjoined noun phrase where an evaluation of the conjunct gender features does not take place. In Icelandic, this pattern can only be distinguished from syntactic resolution when both conjuncts are either masculine or feminine (see Table 10).

Table 10: Agreement options with Icelandic conjoined noun phrases by individuation level (with M+M and F+F combinations). Patterns that had rates under 2% are not included.

	Singular agreement	**Plural agreement**
Human (N = 1576)		**semantic/syntactic resolution 93.5%** (neuter plural default) 5.3%
Animal (N = 1569)		(semantic resolution) (–) **syntactic resolution 58.3%** neuter plural default 41.4%
Countable object (N = 1499)	N. SG. semantic default 18.7%	**syntactic resolution 48.5%** neuter plural default 40%
Uncountable abstract (N = 1357)	partial agreement 13.5% **N. SG. semantic default 39.1%**	syntactic resolution 16.5% neuter plural default 31%

(31)   **Pattern 3: Neuter plural default**
No gender feature evaluation → N.PL

The next agreement option to consider is partial agreement. Example (32) shows two types of partial agreement with a conjoined noun phrase that consists of a feminine and a masculine conjunct. (32a) shows agreement with the closest conjunct, and (32b) with the more distant conjunct. Both options were found in the survey (see sentence 63 in Appendix):

(32)   Partial agreement
a.   Ánægja og árangur er mikilvæg-ur í lífinu.
joy.F   and success.M is important-M.SG in life.the
'Joy and success is important in life.'

b.   Ánægja og árangur er mikilvæg-Ø í lífinu.
joy.F   and success.M is important-F.SG in life.the
'Joy and success is important in life.'

Partial agreement was not found very often in the data, and only shows up reliably on the uncountable abstract level. First conjunct agreement was found in 30.5% of the cases, while second conjunct agreement accounted for 69.5% of partial agreement.

(33)   **Pattern 4: Partial agreement**
Referent of low individuation →   a.   First conjunct chosen as agreement controller
b.   Second conjunct chosen as agreement controller

The last agreement option in this summary is the neuter singular semantic default, which was found with countable object and uncountable abstract conjoined noun phrases. Example (34) makes use of the same survey sentence as in (32), but now we find neuter singular agreement, which I have argued is semantic default agreement based on low individuation.

(34)   Neuter singular semantic default (based on low individuation)
Ánægja og árangur er mikilvæg-t í lífinu.
joy.F   and success.M is important-N.SG in life.the
'Joy and success is important in life.'

(35)   **Pattern 5: N.SG semantic default**
No gender feature evaluation + Referent of low individuation → N.SG.

So, the agreement options we have considered are: semantic resolution, syntactic resolution, neuter plural default, partial agreement, and neuter singular semantic default agreement. Table 10 gives a simplified overview of the distribution of the available agreement options with conjoined noun phrases in Icelandic across the individuation levels that were considered in this paper. The most frequent agreement option for each individuation level is in boldface and rare options are presented within brackets. With each option, percentages are included per individuation level for M + M and F + F conjoined noun phrases only – as these are the only gender combinations for which we can distinguish between all of the agreement options.

As the overview of strategies and the data in Table 10 show, speakers of Icelandic face a myriad of options when they have to determine agreement with conjoined singular noun phrases. The availability of each option appears to be sensitive to levels of individuation. Table 11 is an attempt to unify the agreement strategies with conjoined singular noun phrases in Icelandic by using default inheritance.

6 Conclusion

In this paper, a study of agreement with conjoined singular noun phrases in Icelandic was presented. A general overview of the agreement options available to speakers of Icelandic was provided and the effects of two typological hierarchies on these options was examined. This has provided insight into how Icelandic speakers determine agreement with conjoined singular noun phrases.

The results of an agreement form elicitation survey indicate that both the Individuation Hierarchy and the Agreement Hierarchy, represented by four individuation levels and two agreement target types, play a prominent role in which agreement option is chosen with conjoined noun phrases in Icelandic.

The survey results also show that neuter plural is often used where not expected, with gender congruent masculine or feminine conjuncts. I have argued (in line with Willer-Gold et al. 2016) that this use represents a fixed default value for conjoined noun phrases, where the gender of individual conjuncts is not evaluated. The data shows very little partial agreement: Neuter singular is the most-used option by far whenever singular agreement

Table 11: Default inheritance in agreement strategies with conjoined singular noun phrases in Icelandic.

CONJOINED SINGULAR NOUN PHRASE [neuter plural]				
Number				
High individuation → [plural]			Low individuation → Semantic singular	
Gender				
Features evaluated → Resolution		Features not evaluated → [neuter]	Features evaluated → One conjunct chosen	Features not evaluated → [neuter]
Pattern 1 **Semantic resolution**	Pattern 2 **Syntactic resolution**	Pattern 3 **Default neuter plural**	Pattern 4 **Partial agreement**	Pattern 5 **Neuter singular semantic default**

is found. I argue that the ubiquity and distribution of neuter singular agreement with conjoined noun phrases in Icelandic can best be explained by analysing this pattern as semantic default agreement triggered by referents of low individuation.

There obviously remains a lot to be discovered, and more research into neuter agreement (both singular and plural) in Icelandic is needed as well as on partial agreement. In this study on Icelandic conjoined noun phrase agreement, relatively simple individuation distinctions were made and only two types of agreement targets were compared. It is clear that a more fine-grained approach, supported by data from corpora, will give a more complete picture of agreement with conjoined noun phrases in Icelandic.

Overall, I conclude that using the Individuation Hierarchy and the Agreement Hierarchy together as tools in agreement elicitation research can provide valuable insight into the availability and choice of agreement patterns with conjoined noun phrases and give clues to the nature of these patterns, building on previous typological observations.

Abbreviations

DAT = dative, F = feminine, M = masculine, N = neuter, SG = singular, PL = plural, PRS = present

Additional Files

The additional files for this article can be found as follows:

- **Appendix.** Sentences used in an online fill-in-the-blanks elicitation task. DOI: https://doi.org/10.5334/gjgl.696.s1
- **Dataset and script:** https://doi.org/10.17605/OSF.IO/XVHU3

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