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ISBN

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Publication Date

2026-09-11

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA
Los Angeles

Semantic Conditions on Disjunctive Number Agreement

A dissertation submitted in partial satisfaction
of the requirements for the degree
Doctor of Philosophy in Linguistics

by

Arthur Chang Mateos

ABSTRACT OF THE DISSERTATION

Semantic Conditions on Disjunctive Number Agreement

by

Arthur Chang Mateos

Doctor of Philosophy in Linguistics

University of California, Los Angeles, 2026

Professor Ethan John Poole, Chair

This dissertation examines verbal number agreement with disjunctive subjects. Whereas disjunctions, like indefinites, are known to freely take existential scope above other sentential operators — even out of environments from which scope-taking is typically blocked — I show that scope readings are more limited in sentences where disjoined singular subjects control plural agreement. In particular, I argue that SG-SG disjunctions must take existential scope within a polar question or beneath a downward-entailing or quantificational operator. I call this pattern Ivlieva’s Generalization based on Ivlieva (2012, 2013). While Ivlieva’s findings conflict with other existing accounts of disjunctive agreement, I present data — primarily from English, but also from Spanish, German, and Romanian — that strengthen the case that plural agreement with disjunctive subjects is semantically restricted. The cross-linguistic convergence of evidence indicates that the restricted distribution of plural disjunctive agreement owes to more general properties of disjunction and agreement rather than language-internal factors. I show that disjoined singular subjects that control singular verbal agreement, as well as disjoined plural subjects that control plural verbal agreement, display none of the same semantic restrictions.

That agreement morphology correlates with semantic environment may seem surprising under a feature-copying view of agreement, but I show that the pattern becomes more familiar once we compare the distribution of plural-agreeing disjunction to that of other semantically marked indefinites, such as negative polarity items and epistemic indefinites. Though the empirical

signature of each class of words is slightly different, considering plural-agreeing disjunction within the larger typology of indefinites (e.g., Haspelmath 1997) makes its distribution less anomalous. Compared to these other marked indefinites, the difference with plural-agreeing disjunction is that its distributional restrictions correlate with a reflex external to the nominal (namely, the verbal agreement) rather than with a lexical alternation within the nominal itself. I also show that the semantic environments where plural-agreeing disjunction can take existential scope strongly resemble the environments that block cross-sentential anaphora to indefinites. In light of these cross-domain connections, I present a formal account using tools from Giannakidou (1998, 2011)'s analysis of NPIs and Kamp and Reyle (1993)'s Discourse Representation Theory (DRT). In my account, the morpheme that is responsible for plural agreement with disjunction also restricts how the disjunction can existentially quantify over the disjunctive alternatives.

Finally, I reconcile Ivlieva's Generalization with past studies reporting that verbal agreement with disjoined subjects is simply unpredictable, rather than sensitive to semantic environment, as I argue it is. These previous studies primarily examine sentences where disjunction appears in matrix clauses without any overt quantification, and tend not to control for pragmatic context. I show that controlling for context allows us to better predict when singular and plural disjunctive agreement will be possible. Further, I argue that in some contexts, covert modality can provide the licensing environment that plural disjunctive agreement requires.

The dissertation of Arthur Chang Mateos is approved.

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2026

To Amah, Agong, Lolo, and Lola

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Acknowledgements

Though this dissertation bears my name, it would never have been possible without the support of so many others.

First, I'd like to thank my committee: Dylan Bumford, Stefan Keine, Ethan Poole, and Jessica Rett. Jessica has guided me in distinguishing between the core vs. merely peripheral issues and data points to tackle within this project. Her unfailing belief in and enthusiasm for this project from the very beginning have helped carry me through. Dylan's encyclopedic knowledge on indefinites and dynamic semantics have rescued me more than a few times, and his knack for suggesting an answer six-to-twelve months before I re-arrive at the same conclusion never ceases to amaze. Stefan's sharp questions and ability to anticipate downstream effects of assumptions have helped me to tighten my analysis. He has shaped how I think about parsimony and evaluating competing plausible analyses.

Ethan has undoubtedly had the greatest influence on how I approach linguistics. Ethan has guided my development and growth as a researcher my whole way through the graduate program — from encouraging me in my first year to present my work when doing so felt far too daunting, to reassuring me in my final year that it's actually good and normal for a dissertation to raise and leave unanswered questions. His wide-ranging expertise across syntax and semantics have anchored me as I've wandered the linguistic space, chasing problems wherever they lead. I am grateful for Ethan's generosity with his time and detailed feedback on my drafts, and for patiently listening to me ramble on about scrambled ideas, before helping me to mold them into coherent, defensible analyses. In addition to his mentorship in the world of linguistics and academia, Ethan has always supported me as a person, and I am very grateful for that.

Thanks also to the many other UCLA professors who have taught me along the way, including Ben Eischens, Sun-Ah Jun, Jesse Harris, Tim Hunter, Ed Keenan, Hilda Koopman, Nicoletta Loccioni, Anoop Mahajan, Laurel Perkins, Carson Schütze, Megha Sundara, Harold Torrence, Michelle Yuan, and Kie Zuraw. Thank you also to the past and present front office staff who keep the department running, including Melissa Jamero, Kristina Magpayo Nyden, Bryanna Vargas, Danielle Carreon, Sara Hosegera, and especially, Jennifer Banawa Cornwell.

Thank you to my fellow graduate students within UCLA Linguistics for providing camaraderie, inspiration, and expertise. I'll refrain from listing too many people out of fear of leaving someone out, but particular recognition goes to cohortmate Jahn timer Narkar, cohortmate-and-officemates Kalen Chang and Hashmita Agarwal, and not-cohortmate-but-officemate Hannah Lippard.

This dissertation has also benefitted from conversations with Bronwyn Bjorkman, Barbara Citko, Virginia Dawson, Amy Rose Deal, Valentine Hacquard, Rodica Ivan, Wesley Orth, and Viola

Schmitt, as well as audiences at UCLA and SCAMS 4.

I've had many great teachers, mentors, and advisors before UCLA as well. Thanks to Marie Janiak and Amy Duke for encouraging me to be curious in school, and to Mitko Lountchev for teaching me about teamwork and consistency. Thanks to Rob Sherry, who showed me the magic of reasoning within formal systems, and to Catherine Brewster, who taught me that poetry can actually be enjoyable — but more importantly, on whom for wisdom and support I can always count. Thanks to Byron Ahn, Laura Kalin, and Sunwoo Jeong for shepherding me into the world of natural language. I wouldn't be at UCLA without them. Thanks to Pia Arboleda, Jayson Parba, and Fred Magdalena for teaching me so much in so short a time.

Thanks also to my friends outside of UCLA. Thanks to the Gym & More boys and to my friends from Commonwealth, Princeton, and De La Salle University Dasmariñas. Thank you to Cookbook Club and to the other friends I've made in LA (shout-out to Laura and Yasmeen!) along the way.

Finally, thank you to my family. Thanks especially to Mom, Dad, Katya, and to Lolo and Lola for their constant love and support. And thank you to so many other Mateoses, Changs, Bernardos, Cruzes, Ayalas, and Lees who have welcomed me into their lives and hearts over the years.

No words can express my thanks and appreciation for Katrina.

This work was supported by a Dissertation Year Award and a Biggs-Hayes Fellowship.

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Chapter 1

Introduction

In canonical cases of verbal agreement, the formal features of the agreement controller fully determine the morphology of the agreement target. Two illustrative examples from English are given in (1). In (1a), the person specified by *someone* and the person specified by *they* are the same (semantically atomic) individual. Yet *someone* obligatorily controls singular agreement, and *they* obligatorily controls plural agreement. As shown in (1b), *pluralia tantum* nouns such as *shorts* and *pants* are obligatorily plural and obligatorily control plural agreement. *Pluralia tantum* nouns are not uniform across languages, indicating that their plurality is formal rather than semantic at its core. For example, French treats ‘shorts’ and ‘pants’ as singular, as shown in (2).

(1) a. Someone_{SG} **is**/***are** in the bathroom. They_{PL} **are**/***is** taking forever.

b. The shorts/pants_{PL} **are**/***is** on the table.

(2) Le {short/pantalon} **est**/***sont** sur la table.

the shorts.sg/pants.sg is/are on the table.

‘The pants/shorts are on the table.’

Data such as (1)–(2) — as well as other phenomena including expletive constructions (Vikner 1995; Sobin 1997; Deal 2009; a.m.o), imposters (Collins and Postal 2012), and gender agreement

with inanimate nominals — indicate that verbal agreement is syntactic rather than semantic. In a standard syntactic Agree-based model of verbal agreement (Chomsky 2000, 2001), agreement results from feature copying, where each nominal has a particular syntactic number feature — SG for *someone*; PL for *they*; and so on — and whichever formal number feature happens to be present on the agreement target is copied to the verb and exponed at Spellout.

On the other hand, some phenomena suggest that verbal agreement is at least somewhat sensitive to semantics and reference. In particular, certain classes of nominals — including group-denoting nominals in British English (Pollard and Sag 1994; Elbourne 1999; Sauerland and Elbourne 2002; Smith 2021) and conjoined nominals (Morgan 1972; McCloskey 1991; Heycock and Zamparelli 2005) — have attracted attention for seemingly violating the pattern in (1), in that these classes of nominals allow for multiple possible agreement forms with what appears to be the same nominal. Indeed, as shown in (3), both group-denoting nominals and conjoined nominals can alternatively control singular and plural agreement.

In (3), the different agreement forms correlate with interpretational differences. With singular agreement, (3a) is a statement about the government as a body. On the other hand, (3a) with plural agreement is a statement about the constituent members of the government. Similarly, with singular agreement, (3b) is a statement about the two foods eaten together, whereas with plural agreement, (3b) states that each food is tasty on its own merits.

(3) a. *Group-denoting nominals*

The Government **is/are** ruining this country. (Elbourne 1999:81)

b. *Conjunction*

Pickles and strawberries **tastes/taste** good. (Morgan 1972:280)

If different agreement morphology corresponds with different meanings, that raises the possibility that the features responsible for verbal agreement may also semantically interpretable.

This dissertation studies another phenomenon where multiple agreement forms are possible

with apparently the same nominal: Agreement with disjunctive subjects. Like group-denoting nominals and conjoined nominals, disjunctions of two singular nominals can control both singular and plural verbal agreement. Some examples are given in (4).

- (4) a. Ann doubts that Bob or Cal **is/are** coming.
 b. If Bob or Cal **comes/come**, I'm leaving.

Compared to the group-denoting and conjunctive subjects in (3), interpretational differences correlating with disjunctive agreement are often less clear. For example, speakers report that singular and plural agreement in sentences like (4) are interchangeable without a noticeable change in meaning.

The pattern seen in (4), where disjunctions of singular nominals can control both singular and plural agreement, is not limited to English (Morgan 1972, 1984; Peterson 1986; Eggert 2002; Foppolo and Staub 2020); similar patterns have been documented in a number of other languages including Russian (Crockett 1976; Ivlieva 2012, 2013), Greek (Flouraki and Kazana 2009; Kazana 2011), Italian (Foppolo and Staub 2020), French (Mouret 2007; An and Abeillé 2021), German (Himmelreich and Hartmann 2023; Krifka and Modarresi 2024), Somali (Himmelreich et al. 2021), and Turkish (Himmelreich et al. 2021). Examples from Russian, German, and Turkish are shown in (5)–(7).

(5) *Russian*

Každyj vtornik Bill ili Fred **prihodil-Ø/-i** k Saše.
 every Tuesday Bill or Fred came-SG/PL to Sasha

‘Every Tuesday Bill or Fred came to Sasha.’

(Ivlieva 2012:382)

(6) *German*

Das Regal oder der Tisch **wird/werden** morgen geliefert.
the shelf or the table will.SG/will.PL tomorrow delivered.

‘The shelf or the table will be delivered tomorrow.’

(Himmelreich and Hartmann 2023:2)

(7) *Turkish*

Çocuk veya adam **koşuyor-Ø/-lar**.
boy.SG or man.SG run-3/PL

‘The boy or the man run.’

(Himmelreich et al. 2021)

1.1 Three theories of disjunctive agreement

Within the existing literature, the empirical picture regarding disjunctive agreement is far from clear. Three conflicting patterns of behavior are described. First, some analyses argue that singular disjunctive agreement and plural disjunctive agreement differ in their interpretational properties, and that the difference is a distinction of clusivity. In particular, these analyses propose that singular disjunctive agreement encodes exclusive disjunction while plural disjunctive agreement encodes inclusive disjunction (Crockett 1976; Morgan 1984; Flouraki and Kazana 2009; Kazana 2011). Other analyses, noting the apparent optionality between singular and plural agreement in sentences like (4)–(7), argue that agreement is underdetermined for disjunctive subjects, and thus the different agreement forms are in free variation or determined by pragmatic rather than grammar-internal factors (Peterson 1986; Eggert 2002; Foppolo and Staub 2020; Lyskawa 2021; Himmelreich and Hartmann 2023; Krifka and Modarresi 2024). Finally, Ivlieva (2012, 2013), based on data from Russian, argues that plural disjunctive agreement is limited to certain kinds of semantic environments — namely, environments that are quantificational or downward-entailing,

as well as polar questions.

This dissertation aims to reconcile these seemingly incompatible generalizations. I argue largely in favor of Ivlieva’s findings, and contribute new data — primarily from English, but with some Spanish, German, and Romanian as well — showing that the pattern that Ivlieva describes generalizes beyond Russian. Therefore, I argue, the empirical patterns that we observe owe to general properties of disjunction and agreement rather than language-specific factors. In particular, I defend the generalization stated in (8), which I call Ivlieva’s Generalization:

(8) *Ivlieva’s Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

After arguing for (8) and presenting an account that derives this pattern along with other patterns discussed in the chapters to follow, I then revisit sentences like (7), which underlie the widespread claim from the literature that singular and plural disjunctive agreement are in free variation — yet on their face, seem to defy the generalization stated in (8), in that they allow plural agreement without any apparent downward-entailing or quantificational operator. I show that once we consider disjunctive sentences like (7) within enriched pragmatic contexts, we find that some contexts favor singular agreement and others favor plural agreement. What seems to be free variation is, in fact, a symptom of insufficiently controlling for context. Further, I argue that by assuming the possibility of covert modality whose availability depends on context, we can account for the acceptability of plural agreement in (7), while still maintaining (8).

To preview the sort of data that Ivlieva provides in support of (8) — and which I further develop in Chapter 2 — consider the Russian sentence in (9). (9) contains two scopal operators: ‘every’ and ‘or’. ‘Every’ is a universal quantifier, while ‘or’ is an existential quantifier over the two-element set consisting of both disjuncts. Ivlieva reports that with singular agreement, both scopal configurations of ‘every’ and ‘or’ are possible: (9a) can mean either that on each Tuesday,

one of Petja and Vasja came (possibly a different person across the different Tuesdays) — the narrow-scope disjunction reading — or it can mean that there is a particular person, either Petja or Vasja, who came every Tuesday — the wide-scope disjunction reading. On the other hand, when the disjunctive subject controls plural agreement, as in (9b), only the narrow-scope disjunction reading is possible.

- (9) a. Každýj vtornik Petja ili Vasja **prihodil-∅** ko mne na rabotu.

every Tuesday Petja or Vasja came-SG to me on work

‘Every Tuesday Petja or Vasja came to my office.’ ($\checkmark \forall > \text{or}$, $\checkmark \text{or} > \forall$)

(Ivlieva 2013:103)

- b. Každýj vtornik Petja ili Vasja **prihodil-i** ko mne na rabotu.

every Tuesday Petja or Vasja came-PL to me on work

‘Every Tuesday Petja or Vasja came to my office.’ ($\checkmark \forall > \text{or}$, $*\text{or} > \forall$)

(Ivlieva 2013:103)

I show in Chapter 2 that the scope asymmetry between singular disjunctive agreement and plural disjunctive agreement illustrated in (9) is replicated in English — not just with universal quantifiers but also with other sentential operators including attitude predicates, conditionals, comparatives, and modals. These sentential operators are known to interact scopally with disjunction (e.g., Rooth and Partee 1982; Schlenker 2006; Charlow 2014), but have not previously been studied in the context of verbal agreement. The data, I argue, supports the pattern in (8).

To further motivate the generalization in (8), let us consider the case of conditionals. As I will discuss further in Section 2.2.3, plural-agreeing disjunction — but not singular-agreeing disjunction — takes obligatory narrow scope within the *if*-clause of a conditional. In particular, if we consider the two sentences in (10), where disjunction appears in the *if*-clause of a conditional, we find that the verbal number agreement affects which readings are available. In one context, (11a) — where disjunction scopes beneath the conditional — both the singular and plural agreement

sentences are true. In a wide-scope disjunction context such as (11b), on the other hand, only the sentence with singular agreement is true.

- (10) a. If Emma or Sandy **scores** 100 on the quiz, the class will get extra recess.
 b. If Emma or Sandy **score** 100 on the quiz, the class will get extra recess.
- (11) a. **Context:** *if > or. Every day, Mr. Brown publicly names several students-of-the-day. If any of the students-of-the-day score 100 on that day's morning quiz, the whole class gets extra recess. Today, Mr. Brown named Emma and Sandy the students-of-the-day. He is preparing to hand out the quiz.*
 ✓(10a), ✓(10b)
- b. **Context:** *or > if. Every day, Mr. Brown secretly chooses one student-of-the-day. At lunch time, he reveals the identity of the student-of-the-day. If the student-of-the-day scores 100 on that day's morning quiz, the whole class gets extra recess. We know that Mr. Brown chose Emma or Sandy today, since these are the only students who haven't been student-of-the-day yet. Mr. Brown is preparing to hand out the quiz.*
 ✓(10a), *(10b)

Building on (10), I now highlight a point which will become evident as the dissertation continues: The distributional pattern described in (8) depends on the confluence of several factors within a sentence: A disjunctive subject where each of the disjuncts is singular, along with plural number agreement on the verb. Without both a SG-SG disjunctive subject and plural verbal agreement together in a sentence, we do not observe the same sort of pattern. That is, plural agreement with a non-disjunctive singular subject is ungrammatical regardless of semantic environment; embedding a singular subject within a conditional or within a polar question — both of which are semantic environments where disjunctive subjects can control plural agreement — does not make plural agreement acceptable as shown in (12). And if the disjunctive subject is composed of disjuncts that are themselves plural, as in (13), then scope configurations are not as

restricted as in (10b), even with plural verbal agreement;¹ (13) has a high-scope disjunction reading, according to which there is one set of relatives — either Alex’s uncles or his aunts — whose death will make Alex rich.

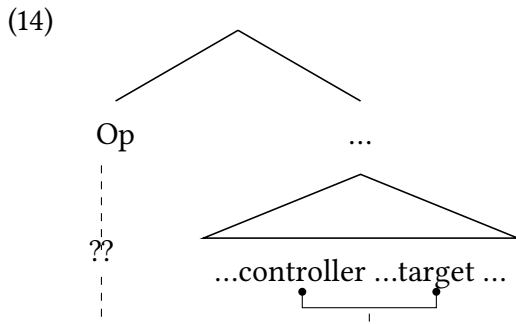
(12) a. The dog **is/*are** barking.

b. If the dog **is/*are** barking, throw the ball.

c. **Is/*Are** the dog barking?

(13) If Alex’s uncles or his aunts **die**, Alex will be rich. ✓ or > if

The data in (12) are rather unsurprising: We do not expect, generally, that changing the wider semantic environment of a sentence will affect the agreement relationship established between the subject and the verb. In fact, the very mundaneness of (12) brings out why Ivlieva’s Generalization is surprising from the perspective of verbal agreement. Abstractly, Ivlieva’s Generalization describes a configuration like the one shown in (14), where the presence or absence of some higher operator Op somehow affects how an agreement controller interacts with its target. In particular, if some Op is present — where Op is a quantificational, downward-entailing, or polar question operator — then the disjunctive subject can control plural agreement on the target verb. Otherwise, plural agreement with the disjunctive subject is ungrammatical.



On the other hand, the picture in (14) resembles what we find with negative polarity items (NPIs), which can only appear in particular kinds of semantic environments (Ladusaw 1979; von Stechow 1999). Indeed, the statement of Ivlieva’s Generalization in (8) quite closely resembles

¹In fact, plural agreement is the only kind of agreement possible in (10b), which we revisit in Sections 3.3 and 5.1.8.

statements given about the distribution of NPIs. For example, consider Ladusaw (1980)’s licensing condition for NPIs, given in (15).

- (15) A negative-polarity item is acceptable only if it is interpreted in the scope of a downward-entailing expression. (Ladusaw 1980:467)

If we replace ‘disjoined SG-SG nominal’ and ‘control plural agreement’ in (8) with ‘negative-polarity item’ and ‘is acceptable’, respectively, and modify which semantic environments are specified, we arrive at essentially the same statement as in (15).

Building on this similarity, as well as connections to other natural-language phenomena detailed in Chapter 4, I argue in Chapter 5 for an analysis — inspired by Giannakidou (1998, 2011)’s treatment of NPIs — which attributes restrictions in the distribution of plural-agreeing disjunctions to restrictions on how these disjunctions introduce referents into the discourse. I argue that this discourse reference-based analysis better captures the observed empirical behavior than the analysis proposed by Ivlieva (2012, 2013), which uses grammatical exhaustification to derive contradictions (and thus ungrammaticality) when plural-agreeing disjunction appears in certain semantic environments.

Before outlining the contents of each chapter, let us return to the three aforementioned descriptions of disjunctive agreement’s behavior found in the literature: The clusivity hypothesis, the free variation hypothesis, and Ivlieva (2012, 2013)’s semantic environment hypothesis. Much of the dissertation — especially Chapters 2 and 6 — will provide evidence against the free variation hypothesis, so I will not address it further in this chapter. Instead, I briefly discuss here why the clusivity hypothesis — though appealing insofar as it links semantic atomicity to verbal morphology — cannot be correct. First, I show that singular-agreeing disjunction is not necessarily exclusive; I then argue that plural-agreeing disjunction is not necessarily inclusive, either.

Exclusive interpretations of disjunction are typically derived through implicature, vis-à-vis comparison with the conjunctive alternative (Grice 1989). Typical arguments for exclusivity’s status as an implicature are that the exclusivity inference is cancellable and reinforceable, as

shown in (16).

(16) a. *Cancellability*

Sue saw John or Mary, maybe both.

b. *Reinforceability*

Sue saw John or Mary, but not both.

Singular-agreeing disjunction behaves no differently from ordinary disjunction in terms of these diagnostics: Exclusive inferences with singular-agreeing disjunction are cancellable and reinforceable, too, as shown in (17) – indicating that with singular disjunctive agreement, exclusivity is an implicature rather than an entailment.

(17) a. *Cancellability*

John or Mary **is** coming, maybe both.

b. *Reinforceability*

John or Mary **is** coming, but not both.

Exclusive inferences with singular disjunctive agreement also disappear in downward-entailing environments: (4a) – regardless of agreement morphology – means that Ann doubts both that Bob is coming and that Cal is coming. An exclusive reading of disjunction would mean that Ann doubts that of Bob and Cal, exactly one will come, i.e., Ann thinks that either zero or two of them will come.²

As evidence against the claim that plural-agreeing disjunction encodes inclusivity, Foppolo and Staub (2020) test predicates that cannot simultaneously be true of multiple witnesses such as *become the next CEO of the company* and *be the one grading this particular assignment* in (18a) and (18b), compared with predicates that can hold of multiple witnesses (18c). They find that for

²We'll consider elsewhere in the dissertation possible wide-scope reading of disjunction. For (4a) with singular disjunctive agreement, the wide-scope reading would be one where *or* takes existential scope above *doubt*, i.e., there is some person – either Bob or Cal – who Ann doubts is coming. The wide-scope reading still has a different meaning from a reading where disjunction is interpreted exclusively with narrow scope with respect to *doubt*.

predicates where a *both* reading is impossible due to real-world knowledge (e.g., it's not possible that two people will become the next CEO of the same company), plural disjunctive agreement is still judged acceptable.³

- (18) a. The lawyer or the accountant **is/are** going to become the next CEO of the company.
- b. The lawyer or the accountant **is/are** going to be the one grading this particular assignment.
- c. The lawyer or the accountant **is/are** coming to the meeting.

(Foppolo and Staub 2020:13)

1.2 Outline of the dissertation

In Chapter 2, I provide evidence from English, Spanish, German, and Romanian that plural disjunctive agreement is restricted in distribution. In particular, I argue that whereas singular-agreeing disjunction — like disjunction that does not control agreement — can freely take scope both above and below other sentential operators (Rooth and Partee 1982; Larson 1985; Schlenker 2006; Charlow 2014), plural-agreeing disjunction must always scope below some other sentential operator. Operators of interest include attitude predicates, conditionals, comparatives, quantifiers, and negation. Plural-agreeing and singular-agreeing disjunction also pattern differently from each other in questions. Specifically, both agreement forms are possible in polar questions, but in alternative questions with disjoined SG-SG subjects, singular agreement is required.

In Chapter 3, I discuss other properties of disjunctive agreement, including its behavior with conjoined verbs and anaphora. I also show that even when disjunctive subjects control plural agreement, they do not pattern with pluralities semantically. Finally, I show that disjoined PL-PL subjects do not show the same semantic restrictions that disjoined SG-SG subjects do, and instead

³For a similar result with *either... or* vs *or*, where a preferential but not categorical preference for interpreting *either... or* exclusively and *or* inclusively emerges, see Nicolae et al. (2024).

pattern with singular-agreeing SG-SG disjunctions and non-agreeing disjunctions — indicating that the restricted distribution of plural-agreeing SG-SG disjunction described in Chapter 2 is due to a combination of the verbal agreement morphology, the subject being disjunctive, and the number of the individual disjuncts.

In Chapter 4, I compare the empirical profile of disjunctive agreement — particularly disjunction that controls plural agreement — with other natural-language phenomena. First, I show a connection between environments where plural-agreeing disjunction can take existential scope and environments where indefinites cannot be antecedents for cross-sentential anaphora. Next, I compare plural-agreeing disjunction’s restricted semantic distribution to that of three other classes of semantically marked indefinites: negative polarity items (NPIs), free choice items, and dependent indefinites. I show that plural-agreeing disjunction is similar in many respects to each of these existing classes, but also does not fit neatly into any one of these classes.

In Chapter 5, I present an analysis of the empirical patterns discussed in the preceding chapters. My analysis is inspired by Giannakidou (1998, 2011)’s analysis of NPIs and situated within Kamp and Reyle (1993)’s Discourse Representation Theory (DRT) treatment of discourse anaphora. In short, I propose that plural agreement with disjointed SG-SG subjects results from a grammatical head (which I call *X*) that bears a syntactic plural number feature, and also imposes the semantic restriction that the variable introduced by the disjunction cannot take widest existential scope within the logical representation of a sentence.

In Chapter 5, I also discuss and argue against alternative analyses to the data discussed in Chapters 2–4, including the approach defended by Ivlieva (2012, 2013) based on grammatical exhaustivity. Considered alongside each other, my DRT approach and Ivlieva’s exhaustivity approach represent generalizations of two competing theories of NPI-licensing to the less-studied empirical domain of disjunctive agreement.

In Chapter 6, I aim to reconcile Ivlieva’s Generalization with the behavior of plural disjunctive agreement in matrix clauses. Whereas Ivlieva (2012, 2013) states — and seeks to derive — that plural

disjunctive agreement is unacceptable in unquantified upward-entailing matrix clauses, myriad such examples have been discussed in other studies of disjunctive agreement. That plural-agreeing disjunction is acceptable in these kinds of sentences — e.g., (6) and (7) above — seemingly violates the generalization defended in Chapter 2 that plural-agreeing disjunction must take existential scope beneath some other sentential operator. I show that we can alleviate this tension by assuming that assertions can be covertly modalized — an idea argued for independently by Hintikka (1962), Gazdar (1979), Kratzer and Shimoyama (2002), Alonso-Ovalle and Menéndez-Benito (2010), and Meyer (2013), among others. I argue that covert modalization is not possible in all circumstances; it depends on contextual and evidential factors. A consequence is that much of the observed variation in agreement forms with disjunctive subjects in unquantified matrix clauses can be accounted for by controlling for context.

Chapter 7 concludes the dissertation by discussing extensions and related issues, including agreement with conjunctive subjects. In the final section, I situate this dissertation’s findings on disjunctive agreement within the broader landscape of semantics-sensitive agreement.

Chapter 2

Disjunctive agreement and other semantic operators

2.1 Introducing Ivlieva's Generalization

In this chapter, I show how disjunctive agreement patterns in the presence of sentential operators such as negation and quantification. Past work on English and other languages has examined disjunctive agreement in sentences without such operators — leading to the characterization of disjunctive agreement as reflecting free variation. I argue that once we consider interactions with other operators, it becomes clear that singular disjunctive agreement and plural disjunctive agreement are not in free variation at all; rather, in certain semantic environments, plural disjunctive agreement is simply ungrammatical.

I take as a starting point work by Ivlieva (2012, 2013), which, as far as I am aware, is the only prior work arguing for a principled and predictable difference in disjunctive agreement morphology according to semantic environment. In Chapter 3 of her dissertation, Ivlieva (2013) argues for the following generalization on the distribution of plural disjunctive agreement in Russian:

(19) *Ivlieva's Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

In terms of downward-entailing environments, Ivlieva shows that plural-agreeing disjunction is possible in conditional antecedents (20a), in restrictors of universal quantifiers, and embedded under negation (20b). For quantificational environments, she presents data with nominal quantifiers ('all tournaments'), frequency adverbials ('every Tuesday', (20c)), and the modals 'want' and 'must' (20d).

(20) a. *Conditional antecedent*

Esli Petja ili Vasja **prid-ët/-ut**, ja budu očen' schastliva.

if Petja or Vasja come.FUT-SG/PL I will.be very glad

'If Petja or Vasja come/comes, I will be very glad.' (Ivlieva 2013:102)

b. *Embedded under matrix negation*

Ja ne dumaju, čto Petja ili Vasja **prišël-∅/?prišl-i**.

I not think that Petja or Vasja came-SG/came-PL

'I don't think that Petja or Vasja came.' (Ivlieva 2013:102)

c. *Frequency adverbial*

Každyj vtornik Petja ili Vasja **prihodil-∅/-i** ko mne na rabotu.

every Tuesday Petja or Vasja came-SG/PL to me on work

'Every Tuesday Petja or Vasja came to my office.' (Ivlieva 2013:103)

d. *Modal*

Doma **dolžen-∅/dolžn-y** byt' Petja ili Vasja.
at.home must-SG/must-PL be Petja or Vasja

‘Petja or Vasja must be at home.’ (Ivlieva 2013:103)

As for where plural-agreeing disjunction is not possible, Ivlieva discusses two kinds of environments: upward-entailing matrix-clauses without any quantification, such as (21); and wide-scope-existential readings where disjunction scopes over a universal quantifier or out of a conditional. For example: Whereas (20c) is grammatical both with singular agreement and with plural agreement, the version of the sentence with plural agreement is false in a situation where the same person came every week, but the speaker is unsure of that person’s identity, as shown in (22). The counterpart sentence with singular agreement is true in the same context.

- (21) Petja ili Vasja **prišēl-∅/*prišl-i**.
Petja or Vasja came-SG/came-PL

‘Petja or Vasja came.’ (Ivlieva 2013:101)

- (22) Každj vtornik Petja ili Vasja **prixodil-∅/*i** ko mne na rabotu — ja ne
every Tuesday Petja or Vasja came-SG/-PL to me on work I not
pomnju, kto imenno.
remember who exactly

‘Every Tuesday Petja or Vasja came to my office, but I don’t remember who exactly.’
(Ivlieva 2013:104)

Sentences like (21) — though they may appear simpler in that they have fewer moving pieces to consider — actually turn out to be more difficult to analyze than sentences like in (20) with operators such as negation or quantification. Indeed, it is sentences like (21) which have led past researchers in the direction of free variation between agreement forms. I therefore defer

discussion of sentences like (21) until Chapter 6, as what we learn from examining how disjunctive agreement interacts with other semantic operators will inform our analysis of the seemingly ‘simpler’ sentences.

This chapter is organized as follows: I begin by showing that Ivlieva’s observation regarding (22) generalizes to a variety of environments in English as well: For a number of operators, plural-agreeing disjunction can take narrow existential scope beneath the operator in question, but cannot take existential scope above it (Section 2.2). These operators include universal quantifiers, attitude predicates, and conditionals. Next, I show that under certain conditions, plural-agreeing disjunction can scope above these operators. In particular, a plural-agreeing disjunction can take higher scope when a second, higher licensing operator is present, such that the disjunction’s existential quantification is interpreted in the scope of the higher licensor (Section 2.3). I then discuss the behavior of disjunctive agreement in questions (Section 2.4), in downward-entailing environments (Section 2.5), and with adverbial quantifiers (Section 2.6). Based on these observations, I argue that the distribution of plural disjunctive agreement is best described in terms of a licensing condition that states that plural-agreeing disjunction can only take existential scope in certain semantic environments. I discuss cross-linguistic parallels throughout the chapter.

I also compare how plural disjunctive agreement is similar to and differs from singular disjunctive agreement, in terms of distribution. I show that unlike plural-agreeing disjunction, singular-agreeing disjunction has the same flexibility in terms of scope and possible readings as has been previously noted for disjunction that does not control agreement.

2.1.1 Preliminaries

For the most part, I limit the discussion to number agreement with 3SG-3SG disjunctions. Agreement with other kinds of ϕ -features (person, gender) have been studied in the context of closest/highest conjunct agreement (Aoun et al. 1994, Bhatt and Walkow 2013, Nevins and Weisser 2019, a.o.); however, as speakers already report significant uncertainty and variation in judgments involving

disjunction (Clifton and Frazier 2016, 2018) — and even more so when verbal agreement is involved (Foppolo and Staub 2020) — I will limit my focus to number agreement involving disjoined singular third-person subjects. I discuss disjunctions involving non-singulars in Section 3.3 and non-DP disjunction in Section 5.1.7; extensions to other kinds of ϕ -features are discussed in Chapter 7. Thus, when I use the terms ‘singular/plural-agreeing disjunction’ and ‘singular/plural disjunctive agreement’, the reader can assume that this refers to 3SG-3SG disjunctions, unless otherwise noted.

2.2 Scope asymmetries in disjunctive agreement

This chapter is devoted to elucidating the differing distributions of singular disjunctive agreement and plural disjunctive agreement according to syntactic and semantic environment. What we find is that singular-agreeing disjunction behaves much like any ordinary disjunction, while plural-agreeing disjunction has a more restricted distribution.

2.2.1 Disjunction and scope

To begin the discussion, let us first consider how disjunctive scope behaves when verbal agreement is not involved. Sentences involving disjunction are known to be scopally ambiguous when the disjunction does not control agreement (Rooth and Partee 1982). For example, (23) has two possible readings. In one reading, shown in (24a), the existential quantification associated with *or* is interpreted relative to Alf’s belief-worlds. That is, Alf believes that the following is true: There is some place x , either Sweden or Norway, such that Bev is in x . Alf is not committed to x being one place or the other. In the second reading, shown in (24b), the existential quantification is interpreted relative to the speaker. That is, there is a particular x such that Alf believes that Bev is in x , and as far as the speaker is concerned, x is either Sweden or Norway. The reading in (24a) is a narrow-scope reading of disjunction, while the reading in (24b) is a wide-scope reading of disjunction with respect to the attitude predicate *believe*.

(23) Alf believes that Bev is in Sweden or Norway.

(24) a. Narrow-scope disjunction (believe $>$ $\exists$): ✓(23)

Context: ‘*Alf uncertainty*’. Alf told the speaker that Bev is in some Scandinavian country. Alf said that he isn’t sure where exactly Bev is, but that it’s either Sweden or Norway.

b. Wide-scope disjunction ($\exists >$ believe): ✓(23)

Context: ‘*Speaker uncertainty*’. Alf told the speaker that Bev is in Norway. But the speaker always mixes up the Scandinavian countries, so he can’t remember whether Alf said Norway or Sweden.

As has been well-studied, disjunction interacts scopally with many operators beyond just attitude predicates (Larson 1985, Schlenker 2006, Charlow 2014, a.o.). For example, each sentence in (25) allows both a narrow-scope disjunction reading and a wide-scope disjunction reading, where the relevant operators are universal quantification, negation, and modality, respectively. The wide-scope disjunction reading can often be brought out with a sluice, as we discuss below (see also Section 6.4.3).

(25) a. Every activist met the President or the vice-President.

b. Suzy did not qualify for the Olympics or the World Championships.

c. You can eat the cake or the cookies.

Disjunction can also take existential scope out of antecedents of conditionals, relative clauses, and comparatives, as will be discussed later in this section. Before we look at any of these other operators, let us focus in on attitude predicates, and how scope ambiguities behave once verbal agreement is considered.

2.2.2 Attitude predicates

As a baseline — before considering any particular readings of the sentences — we note that both singular agreement and plural agreement are grammatical with disjunctive subjects that are embedded under attitude predicates (Foppolo and Staub 2020). This fact holds for both ‘positive’ attitude predicates like *believe* and ‘negative’ attitude predicates (in the sense of licensing NPIs, discussed further in Section 4.2.1) like *doubt*. That is, speakers judge sentences such as (26) and (27) as well-formed, under some reading of the sentence.

- (26) a. ✓ Ann believes that the table or the shelf **is** arriving tomorrow.
b. ✓ Ann believes that the table or the shelf **are** arriving tomorrow.
- (27) a. ✓ Ann doubts that the table or the shelf **is** arriving tomorrow.
b. ✓ Ann doubts that the table or the shelf **are** arriving tomorrow.

When the disjunctive subject controls singular agreement, as in (26a) or (27a), we find a similar ambiguity to when no agreement is involved: Narrow-scope and wide-scope disjunction readings are both possible. To draw out the narrow-scope reading of (26a), we can consider a context where Ann has just told the speaker, ‘I ordered a table and a shelf. At least one of them will arrive tomorrow, though I don’t know which’. For the wide-scope reading of (26a), we can consider a context where Ann told the speaker, ‘I expect that the table will arrive tomorrow’, but the speaker has subsequently forgotten whether Ann’s statement was about the table or the chair.

- (28) a. Narrow-scope disjunction (believe/doubt $> \exists$): ✓(26a), ✓(27a)
b. Wide-scope disjunction ($\exists >$ believe/doubt): ✓(26a), ✓(27a)

On the other hand, when the disjunctive subject controls plural agreement, as in (26b) or (27b), the scope ambiguity disappears. With plural disjunctive agreement, only the narrow-scope reading is true: (26b) is felicitous in the context where Ann just said, ‘I ordered a table and a shelf, and I think one of them will arrive tomorrow’, but not in the context where Ann said that she

expects the table to arrive, and the speaker subsequently forgot which furniture piece Ann named.

- (29) a. Narrow-scope disjunction (believe/doubt > $\exists$): ✓(26b), ✓(27b)
b. Wide-scope disjunction ($\exists$ > believe/doubt): *(26b), *(27b)

Thus, the sentences where disjunction controls plural agreement are more restricted in distribution than sentences where disjunction controls singular agreement or where disjunction controls no agreement at all. We will see this pattern repeat itself throughout the chapter.

Further support for the scope asymmetry shown in (29) comes from sluicing, i.e., TP ellipsis that leaves behind a *wh*-phrase (Ross 1969), as in (30).

- (30) a. Jack bought something, but I don't know what ~~Jack bought~~.
b. Jack called, but I don't know {when/how/why/where from} ~~Jack called~~.
(Merchant 2001:3)

Independent of agreement, sluicing requires a preadjacent where an existential quantifier takes widest scope (Rooth and Partee 1982:357; Chung et al. 1995:255). For example — although (25a) is ambiguous between a reading that for every activist, that activist met either the President or the vice-President; and a reading that either the President or the vice-President is such that every activist met them. The first clause of (31) only has the latter reading.

- (31) Every activist met the President or the vice-President, I forget which/who.

Using a sluice to enforce wide-scope disjunction, then, we see that singular-agreeing disjunction tolerates a sluice, but plural-agreeing disjunction does not:

- (32) a. ✓Ann doubts/believes that the table or the shelf **is** arriving tomorrow, I forget which.
b. *Ann doubts/believes that the table or the shelf **are** arriving tomorrow, I forget which.

Note that when a sentence has a disjunctive embedded subject, but the embedded subject

does not (visibly) control number agreement, sluicing again is acceptable, as shown in (33). The grammaticality of (33) is unsurprising given (31) and (32), but reinforces that the restriction arises only when the disjunctive subject controls plural agreement that is morphologically realized.

(33) ✓ Ann doubts/believes that the table or the shelf **will** arrive tomorrow, I forget which.

As a final piece of evidence supporting the scope asymmetry in (29), we look to *either... or* constructions.¹ The placement of *either* in a sentence interacts with scope, as originally observed by Larson (1985). In particular, disjunction cannot take existential scope lower than the clause where *either* appears.² That is, (34a) is ambiguous between a reading where what Sherlock pretended was that he was either looking for a burglar or looking for a thief; and a reading where what Sherlock did was either pretend to be looking for a burglar, or pretend to be looking for a thief. Only the second reading is true for (34b).

(34) a. Sherlock pretended [to either be looking for a burglar or a thief].

b. Sherlock either pretended [to be looking or a burglar or a thief].

(Larson 1985:221)

The prediction for disjunctive agreement with attitude predicates, then — given my argument that plural-agreeing disjunction must take narrow scope beneath the attitude predicate — is that it should not be possible for *either* to appear in the matrix clause in a sentence where the embedded disjunctive subject controls plural agreement. This is exactly what we find: *Either* can appear in the embedded clause with plural-agreeing disjunction as in (35a), but no matter where in the matrix clause *either* appears, (35b) is ungrammatical.

(35) a. ✓ Ann doubts/believes either that the table or the shelf **are** arriving tomorrow.

b. *⟨Either⟩ Ann ⟨either⟩ doubts/believes ⟨either⟩ that the table or the shelf **are**

¹Contrary to what a naive speaker might think, *either... or* does not enforce an exclusive disjunction reading (Szabolcsi 2015:196; Nicolae et al. 2024).

²Larson (1985)'s original claim pertains only to nonfinite TPs, as he says that *either* cannot occur outside the minimal tensed clause containing *or* (see also den Dikken 2006). However, Hofmeister (2010) shows both an acceptability survey and naturally occurring examples showing that *either* can indeed occur outside the minimal tensed clause of *or*.

arriving tomorrow.

As expected, *either* is not restricted in the same way in sentences where the embedded disjunctive subject controls singular agreement (36), or controls no agreement at all (37).

- (36) a. ✓ Ann doubts/believes either that the table or the shelf **is** arriving tomorrow.
b. ✓ ⟨Either⟩ Ann ⟨either⟩ doubts/believes ⟨either⟩ that the table or the shelf **is** arriving tomorrow.
- (37) a. ✓ Ann doubts/believes either that the table or the shelf **will** arrive tomorrow.
b. ✓ ⟨Either⟩ Ann ⟨either⟩ doubts/believes ⟨either⟩ that the table or the shelf **is** arriving tomorrow.

We have seen in this section that plural-agreeing disjunction obligatorily takes narrow scope beneath an attitude predicate, while singular-agreeing disjunction — just like disjunction that does not control agreement — has no such restrictions. Ivlieva’s Generalization, stated in (19), successfully captures this pattern: Under the standard assumption that attitude predicates quantify over epistemic worlds (Hintikka 1969), what we’ve seen is that plural-agreeing disjunction can take scope under the quantification introduced by the attitude predicate, but not above it, in which case the plural-agreeing disjunction would be unlicensed.

Similar patterns regarding disjunctive agreement under attitude-embedding predicates are found in Spanish, German, and Romanian.³ In Spanish, the pattern is the same as in English: Singular-agreeing disjunction, embedded under both ‘doubt’ and ‘think’, is ambiguous between wide-scope and narrow-scope readings, while plural-agreeing disjunction allows only a narrow-scope reading.

³Thank you to Isa Cabrera, Stefan Keine, and Rodica Ivan for discussing their languages and sharing judgments with me. Unless otherwise attributed, the Spanish, German, and Romanian data I discuss in this dissertation are thanks to Isa, Stefan, and Rodica, respectively.

- (38) a. Maria duda/cree que Juan o Miguel **está** durmiendo.
 Maria doubt.3SG/think.3SG that Juan or Miguel be.3SG sleeping

‘Maria doubts/thinks that Juan or Miguel is sleeping.’

✓think/doubt > $\exists$, ✓ $\exists$ > think/doubt

- b. Maria duda/cree que Juan o Miguel **están** durmiendo.
 Maria doubt.3SG/think.3SG that Juan or Miguel be.3PL sleeping

‘Maria doubts/thinks that Juan or Miguel are sleeping.’

✓think/doubt > $\exists$, * $\exists$ > think/doubt

In German, the pattern is the same as in English for ‘think’ — see (39a)–(39b) — and slightly different for ‘doubt’: As shown in (39c), the singular-agreeing disjunction sentence does not have a reading where disjunction takes narrow scope beneath ‘doubt’.

- (39) a. Maria denkt, dass das Regal oder der Tisch morgen geliefert **wird**.
 Maria thinks that the shelf or the table tomorrow delivered will.be.SG

‘Maria thinks that the shelf or the table will be delivered tomorrow.’

✓think > $\exists$, ✓ $\exists$ > think

- b. Maria denkt, dass das Regal oder der Tisch morgen geliefert **werden**.
 Maria thinks that the shelf or the table tomorrow delivered will.be.PL

‘Maria thinks that the shelf or the table will be delivered tomorrow.’

✓think > $\exists$, * $\exists$ > think

- c. Maria bezweifelt, dass das Regal oder der Tisch morgen geliefert
 Maria doubts that the shelf or the table tomorrow delivered
wird.
 will.be.SG

‘Maria doubts that the shelf or the table will be delivered tomorrow.’

*doubt > $\exists$, ✓ $\exists$ > doubt

- d. Maria bezweifelt, dass das Regal oder der Tisch morgen geliefert
 Maria doubts that the shelf or the table tomorrow delivered
werden.
 will.be.PL/will.be.SG

‘Maria doubts that the shelf or the table will be delivered tomorrow.’

✓doubt > $\exists$, * $\exists$ > doubt

In Romanian, the disjunctive agreement pattern with ‘doubt’ resembles what we see in German: Singular-agreeing disjunction has only a high-scope reading, while plural-agreeing disjunction forces a low-scope reading relative to the embedding verb:

- (40) a. Maria se îndoiește că **vine** Ion sau Simion.
 Maria refl doubt that come.SG John or Simion

‘Maria doubts that John or Simion is coming.’

*doubt > $\exists$, ? $\exists$ > doubt

- b. Maria se îndoiește că **vin** Ion sau Simion.
 Maria refl doubt that come.PL John or Simion

‘Maria doubts that John or Simion are coming.’

✓/?doubt > $\exists$, * $\exists$ > doubt

I suspect the German and Romanian patterns with ‘doubt’ may be due to competition between singular-agreeing disjunction and plural-agreeing disjunction to express the narrow-scope reading — a combination of the fact that singular-agreeing disjunction can take wide scope and the fact that plural-agreeing disjunction improves in downward-entailing environments (see Section 2.5, also Foppolo and Staub 2020). In any case, Spanish, German, and Romanian all show the same restriction as English in that plural-agreeing disjunction takes obligatory narrow scope beneath an attitude predicate.

In the rest of Section 2.2, I show that this same pattern repeats with a number of other quantificational operators in English.

2.2.3 Conditionals and relative clauses

Disjunction can take scope out of other kinds of finite clauses as well, beyond just those embedded under attitude predicates (Schlenker 2006; Brasoveanu and Farkas 2011; Charlow 2014). These environments include conditionals and relative clauses. For example, (41a) is acceptable in a context where Melissa has a severe allergy but the speaker is unsure whether the allergy is to shellfish or to dairy. Likewise, (41b) is compatible with a situation where a particularly grumpy professor who teaches both syntax and semantics decides to flip a coin and act as follows: If the coin lands heads, flunk every semantics student; if the coin lands tails, flunk every syntax student. Readings such as these where an indefinite or a disjunction takes scope higher than its own finite clause are often called ‘exceptional scope’ readings, since quantifiers typically cannot scope out of finite clauses (Chomsky 1975; May 1977; Rooth and Partee 1982, though see Barker 2022). For example, (42a) has no reading that means every student is such that Melissa will be upset if we serve her; and (42b) cannot mean that for every class x that Professor K. teaches, six students taking x will flunk.

- (41) a. If we serve shellfish or dairy, Melissa will be upset.
- b. Every student who takes semantics or syntax will flunk.
- (42) a. If we serve every student, Melissa will be upset.
- b. Six students who take every class that Professor K. teaches will flunk.

Previous studies on the exceptional-scope properties of disjunction have not investigated the effect of verbal agreement. Once we consider agreement, a contrast emerges: Singular-agreeing disjunctive subjects can take exceptional scope out of conditionals and relative clauses, while plural-agreeing disjunctive subjects cannot. Consider the following context, designed to force an

exceptional-scope reading of disjunction out of the conditional antecedent:

- (43) **Context:** *Every day, Mr. Brown secretly chooses one student-of-the-day. At lunch time, he reveals the identity of the student-of-the-day. If the student-of-the-day scored 100 on that day's morning quiz, the whole class gets extra recess. We know that Mr. Brown chose Emma or Sandy today, since these are the only students who haven't been student-of-the-day yet. Mr. Brown is preparing to hand out the quiz.*

For the context (43), the sentence with singular agreement (44a) has a reading where it is true. On the other hand, the sentence with plural agreement (44b) is false in (43).

- (44) a. If Emma or Sandy **scores** 100 on the quiz, the class will get extra recess.
✓ in (43)
- b. If Emma or Sandy **score** 100 on the quiz, the class will get extra recess.
* in (43)

The sentence with plural disjunctive agreement, (44b), is true, however, in the context given in (45), where disjunction scopes below the conditional. The singular-agreeing disjunction sentence, (44a), also has a true reading in (45).

- (45) **Context:** *Every day, Mr. Brown publicly names several students-of-the-day. If any of the students-of-the-day score 100 on that day's morning quiz, the whole class gets extra recess. Today, Mr. Brown named Emma and Sandy the students-of-the-day. He is preparing to hand out the quiz.*

A second context that forces an exceptional-scope reading of disjunction is given in (46). Again, the sentence with singular agreement, (46a), is true (on one reading), while the sentence with plural agreement, (46b), is false.

(46) **Context:** *When reading her relatives' wills, Alex learned that (exactly) one of her relatives willed her a large sum of money. She told this to the speaker, but didn't specify which relative. The speaker knows that Alex has (exactly) two rich relatives who could possibly have willed Alex so much money: Uncle Jim, and Grandpa Jack. The speaker reports:*

- a. ✓If Uncle Jim or Grandpa Jack **dies**, Alex will be rich.
- b. *If Uncle Jim or Grandpa Jack **die**, Alex will be rich.

As with (44), both the sentence with plural disjunctive agreement and the sentence with singular disjunctive agreement are true in the alternative context (47) which has disjunction scoping below the conditional.

(47) **Context:** *When reading her relatives' wills, Alex learned that two relatives — Uncle Jim and Grandpa Jack — have independently willed her large sums of money upon their respective deaths. She told this to the speaker, who reports:*

- a. ✓If Uncle Jim or Grandpa Jack **dies**, Alex will be rich.
- b. ✓If Uncle Jim or Grandpa Jack **die**, Alex will be rich.

As mentioned in Section 2.1, Ivlieva (2013) shows that plural-agreeing disjunctions are grammatical within conditional antecedents in Russian, but cannot take scope out of them. Another cross-linguistic parallel is found in Romanian, where both singular and plural-agreeing disjunction are acceptable in the antecedent of a conditional:

(48) Dacă **vine/vin** Ion sau Maria, voi fi fericită
 if come.SG/come.PL John or Maria I.will.be happy
 'If John or Mary come, I will be happy.'

We find the same pattern for disjunction taking exceptional scope out of relative-clause restrictors of universal quantifiers. Singular-agreeing disjunction admits an exceptional-scope

reading, while plural-agreeing disjunction does not. Take, for example, the sentence pair in (49).

- (49) a. I've enjoyed every movie that Maria or Fran **has** recommended.
 b. I've enjoyed every movie that Maria or Fran **have** recommended.

We consider two contexts: one which brings out the narrow-scope reading of disjunction, and one which brings out the exceptional-scope reading. In the narrow-scope context, (50a), both singular-agreeing and plural-agreeing disjunction have true readings. In the exceptional-scope context, (50b), however, only the sentence where disjunction controls singular agreement, (49a), is true.

- (50) a. Narrow-scope disjunction ($\forall > \exists$): ✓(49a), ✓(49b)

Context: *Maria and Fran both run movie recommendation blogs. The speaker follows both blogs and has enjoyed every movie they've watched from either of the blogs. The blogs' names transparently identify who runs them: Movies from Maria, Films from Fran.*

- b. Exceptional-scope disjunction ($\exists > \forall$): ✓(49a), *(49b)

Context: *Maria and Fran both run movie recommendation blogs. The speaker follows both blogs, but has forgotten who runs which blog. They've enjoyed every movie from Blog A, but have disliked several movies from Blog B.*

To summarize, the pattern seen with embedding predicates — where singular-agreeing disjunction is ambiguous between a high-scope and a low-scope reading, whereas plural-agreeing disjunction forces a narrow-scope reading — is repeated with conditionals and relative-clause restrictors of universal quantifiers.

These data, I argue, further support Ivlieva's Generalization as the correct characterization of the distribution of plural disjunctive agreement for English. Dating back to Kratzer (1986, 1991), conditionals have been analyzed as restrictors over (possibly covert) modal quantifiers. Thus when the disjunction is interpreted within the conditional antecedent, it falls within the scope of the

modal for which the conditional acts as a restrictor, and therefore takes scope in a quantificational environment suitable under Ivlieva’s Generalization. On the other hand, if the disjunction takes exceptional scope out of the conditional, then it will be outside the scope of the modal, and thus unlicensed. Ivlieva’s Generalization predicts ungrammaticality with plural disjunctive agreement in this case, and that is what we observe. The same argument applies straightforwardly to scoping under versus above the universal quantification in sentences like (49).

Above, I have presented an argument attributing the grammaticality of plural-agreeing disjunction in conditional antecedents and restrictors of universal quantifiers to the quantificational nature of these environments. Alternatively, we could make the same argument in terms of downward-entailment, which is another class of licenser according to Ivlieva’s Generalization. Both conditional antecedents and restrictors of universal quantifiers are downward-entailing, and as is well known, both these environments also license negative polarity items (NPIs) (Ladusaw 1979, 1980). We return to similarities between plural-agreeing disjunction and NPIs in Section 4.2.1, as these similarities will inform the analytical direction we ultimately pursue. Further parallels to NPI licensing will emerge throughout this chapter.

2.2.4 Comparatives

We next turn our attention to comparatives. When disjunction occurs in the standard of a comparative construction, two readings are possible: One where the existential scopes below the comparison; and one where the existential scopes above it (Cresswell 1976:fn. 10, Hoeksema 1983:416, Lassiter 2010). For example, (51) has two available readings: One reading where what the speaker is asserting is both that Mary speaks more languages than Sue and that Mary speaks more languages than Ellen, (52a); and a second reading where the speaker asserts that one of Sue and Ellen is such that Mary speaks more languages than her (52b). The second reading can be brought out with the continuation *but I’m not sure which one*. The high-scope disjunction readings might also be described as exceptional-scope readings, as in general, quantifiers cannot scope higher

than degree-phrases that contain them (Kennedy 1999; Heim 2000; Bhatt and Pancheva 2004).

(51) Mary speaks more languages than Sue or Ellen.

(52) a. Narrow scope ($\text{Comp} > \exists$): ✓(51)

‘Mary speaks more languages than Sue and more languages than Ellen.’

b. Wide scope ($\exists > \text{Comp}$): ✓(51)

‘Mary speaks more languages than Sue or she speaks more languages than Ellen.’

The scopal ambiguity in (51) is replicated for clausal comparatives in which a disjunctive subject controls singular agreement on the verb, as in (53).

(53) Mary speaks more languages than Sue or Ellen **does**.

(54) a. Narrow scope ($\text{Comp} > \exists$): ✓(53)

‘Mary speaks more languages than Sue and more languages than Ellen.’

b. Wide scope ($\exists > \text{Comp}$): ✓(53)

‘Mary speaks more languages than Sue or she speaks more languages than Ellen.’

However, for clausal comparatives where the disjunctive subject controls plural agreement, only the narrow-scope reading – according to which Mary speaks more languages than both Sue and Ellen – is true. That is, (55) cannot mean that Mary speaks more languages than just one of Sue and Ellen (but perhaps the speaker is not sure who).

(55) Mary speaks more languages than Sue or Ellen **do**.

(56) a. Narrow scope ($\text{Comp} > \exists$): ✓(55)

‘Mary speaks more languages than Sue and more languages than Ellen.’

b. Wide scope ($\exists > \text{Comp}$): *(55)

‘Mary speaks more languages than Sue or she speaks more languages than Ellen.’

Once again, we see that plural-agreeing disjunction is restricted in distribution as compared with singular-agreeing disjunction and disjunction that does not control agreement. To explain this asymmetry in terms of Ivlieva’s Generalization, we again have two possible routes: that of downward entailment, and that of quantification. Though clausal comparatives are licensors for NPIs (Linebarger 1980; Hoeksema 1983), whether they are downward-entailing is debated (Schwarzschild and Wilkinson 2002; Heim 2006; Giannakidou and Yoon 2024). Therefore, I opt for the route of quantification. Following von Stechow (1984); Heim (2000); Beck (2011), let us assume that comparatives involve comparing maximal degrees. Computing maximal degrees requires universal quantification over degrees. For example, (57a) has the meaning in (57b):

- (57) a. Mary speaks more languages than Sue.
- b. $\max\{d : \text{speaks-n-many-langs}(m, d)\} > \max\{d : \text{speaks-n-many-langs}(s, d)\}$
 where $\max(P) = \iota d. P(d) \wedge \forall d' [P(d') \rightarrow d' \leq d]$

Since the max function has as part of its definition universal quantification, the two possible readings that arise when disjunction is in the comparison standard differ in whether the existential comes within the scope of the universal quantifier. Consider again (53), which is ambiguous between the two readings. The denotation of the narrow-scope reading is given in (58a). In denotation for the narrow-scope disjunction reading, existential quantification applies within the scope of the max function, and accordingly, within the scope of universal quantification. In the wide-scope disjunction denotation, (58b), the existential quantification takes wide scope and therefore falls outside the scope of max’s universal quantification.

- (58) a. $\max\{d : \text{speaks-n-many-langs}(m, d)\} >$
 $\max\{d : \exists x \in \{s, e\} [\text{speaks-n-many-langs}(x, d)]\}$
- b. $\exists x \in \{s, e\} [\max\{d : \text{speaks-n-many-langs}(m, d)\} >$
 $\max\{d : \text{speaks-n-many-langs}(x, d)\}]$

Ivlieva’s Generalization predicts, therefore, that plural disjunctive agreement will permit only

the narrow-scope disjunction reading. This prediction is borne out by (56).

At this point, it is worth noting that even despite the similarities between NPI-licensing contexts and plural-agreeing disjunction across conditional antecedents, we have not required the ‘downward-entailing’ part of Ivlieva’s Generalization to account for any of these similarities in licensing environments; I have argued that all of the NPI-licensing environments where we find plural-agreeing disjunction to be grammatical, we can characterize as quantificational environments. Nonetheless, I will argue later in this chapter that we do, in fact, still need the ‘downward-entailing’ part of the condition. The relevant data comes from negation, discussed in Section 2.5.

2.2.5 Universal quantifiers

We saw in Section 2.2.3 that plural-agreeing disjunction cannot scope out of the restrictor of a universal quantifier. In this section, I demonstrate that the same pattern holds with the nuclear scope of a universal quantifier. As we saw in (25a) (repeated below), disjunction — when it does not control agreement, at least — can take existential scope alternatively above or below the universal quantifier. That is, (25a) can mean that every activist met one of the two officials (not necessarily the same official across different activists), or it can mean that one of the officials is such that every activist met that official.

(25a) Every activist met the President or the vice-President.

As we have done throughout this chapter, let us again consider an analogous sentence to (25a) in which the disjunctive nominal controls verbal agreement. This is most easily done by using a prepositional phrase that involves universal quantification as in (59):

- (59) a. Every Tuesday, Ann or Bea **was** here.
b. Every Tuesday, Ann or Bea **were** here.

Narrow-scope and wide-scope contexts are given in (60a) and (60b), respectively. As with

disjunction in the restrictor of the universal quantifier, we find that when disjunction is in the nuclear scope, the plural-agreeing disjunction sentence, (59b), has only a narrow-scope disjunction reading, (60a). The sentence with singular-agreeing disjunction, (59a), is ambiguous between the narrow-scope and wide-scope reading.

- (60) a. Narrow-scope disjunction ($\forall > \exists$): ✓(59a), ✓(59b)

Context: *Cal says that he stopped by the office last month, but no one was in. He says that he came on a Tuesday. Speaker — knowing Ann and Bea’s schedules sufficiently well that he is confident that on every Tuesday, at least one of them was in — contests Cal’s story, saying (59).*

- b. Wide-scope disjunction ($\exists > \forall$): ✓(59a), *(59b)

Context: *Speaker visited the office every Tuesday last month, and saw the same person each time. He doesn’t know who that person is, but the nameplate indicates that Ann and Bea share that particular office. Recounting his experience, he says (59).*

The behavior in English of disjunctive agreement in the nuclear scope of a universal quantifier therefore mirrors what Ivlieva reports for Russian in (20c). To further draw out the parallel between English and Russian, we note that, of the two sentences in (59), only the sentence where the disjunctive subject controls singular agreement can be followed by a sluice, replicating the Russian data in (22):

- (61) a. Every Tuesday, Ann or Bea **was** here, but I couldn’t tell which.
b. *Every Tuesday, Ann or Bea **were** here, but I couldn’t tell which.

That (59b) has a narrow-scope reading but not a wide-scope reading with respect to the universal quantifier is exactly what is predicted by Ivlieva’s Generalization (19).

The data I report in this section diverges somewhat from what Ivlieva reports regarding English. Regarding plural disjunctive agreement in the nuclear scope of a universal quantifier, Ivlieva

(2013:124) reports that the majority of English speakers she consulted find sentences such as (62a) unacceptable. On the other hand, the counterpart sentence with singular agreement, (62b), is judged as acceptable.

- (62) a. ^{*/?} Every Tuesday John or Bill **visit** Mary at the hospital. (Ivlieva 2013:124)
- b. Every Tuesday John or Bill **visits** Mary at the hospital.

However, Ivlieva also notes that speakers prefer plural-agreeing disjunction in (62a) to a similar sentence without the universal quantifier, (63). Further, she reports that some speakers accept (64) under a reading where *every girl* scopes over the disjunction, and she documents several naturally occurring sentences — shown in (65) — where plural disjunctive agreement occurs within the nuclear scope of a universal quantifier.

- (63) Today Tuesday John or Bill **has/*have** visited Mary at the hospital. (Ivlieva 2013:124)
- (64) John or Bill **have** kissed every girl at the party. (Ivlieva 2013:125)
- (65) a. Every rung on the political ladder Obama climbed, Ayers or his father Tom **were** there to help him along and work the Chicago machine. (newsmax.com)
- b. Either Nadal or Federer **have** featured in every Grand Slam final since the 2005 Australian Open, except the 2008 Australian tournament. (perfect-tennis.co.uk)
- (Ivlieva 2013:125)

The data I report in this section are consistent with what we see in (64) and (65) but differ from the reported ^{*/?} judgment in (62a). That reported judgments regarding disjunctive agreement are inconsistent has been noted by many past studies on the topic, (Peterson 1986; Eggert 2002; Foppolo and Staub 2020; a.o.); I discuss this issue further in Chapter 6. Specific to (62a), I hypothesize that the differences may be due to pragmatic context. Throughout this chapter, I have been presenting data and judgments of the various disjunctive agreement forms in enriched pragmatic contexts — and as we have seen, context affects which agreement forms are available by disambiguating scope. It is not clear whether sentences such as (62) were presented out-of-the-blue in Ivlieva’s study, or

alongside contexts which would bring out various target readings. With disjunctive agreement being sensitive to context, though, it is possible that speakers — being presented with a sentence or sentence pair such as in (62) — envisioned a context in which only singular disjunctive agreement would be acceptable (such as (60b)), and accordingly, rejected the sentence with plural-agreeing disjunction. I have found that the precise string of words used can greatly affect the reading that consultants tend to gravitate toward. I will discuss the role of context further in Chapter 6.

We conclude this section by discussing one further semantic operator, which I will show interacts with disjunctive agreement in a now-familiar way: modals.

2.2.6 Modals and free choice

Disjunction's interaction with modality has been well-studied independent of verbal agreement, but interactions between modality and disjunctive agreement have yet to be explored. In the modal-disjunction literature, a topic of particular interest has been free choice inferences, which refer to conjunctive inferences that arise when disjunction occurs within the scope of a modal (Kamp 1973). To illustrate, (66a), which would be expected to have the semantics of (66b), is typically understood to convey (66c). That is, a person being told (66a) would be justified in thinking that both coffee and tea are acceptable options for Bob. The addressee can freely choose between the two disjuncts, thus the term 'free choice'.

- (66) a. Bob can have coffee or tea.
 b. $\Diamond$ (Bob has coffee or Bob has tea)
 c. $\Diamond$ (Bob has coffee) $\wedge$ $\Diamond$ (Bob has tea)

Free choice inferences arise both with possibility modals, as in (66a), and with necessity modals. In the case of necessity modals, the free choice inference is that each individual disjunct is a permitted option, as shown in the underlined portion of (67) (Zimmermann 2000; Alonso-Ovalle 2005; Simons 2005). Without the free-choice inference, (67a) would be true in a context where the

addressee is required to clean their room and disallowed from doing dishes; but someone hearing (67a) would find it misleading if it were used to express such a set of rules.

- (67) a. You must clean your room or do the dishes.
 b. $\Box$ (you clean your room or you do the dishes)
 $\wedge \Diamond$ (you clean your room) $\wedge \Diamond$ (you do the dishes)

Free choice inferences are cancellable, both contextually and via linguistic means. (68) shows a context wherein no free choice inference is observed, while (69) shows the cancellability of the free choice inference via a sluice. In both (68) and (69), the free choice inference in (66c) no longer holds; it is not the case that Bob has two permitted drink options. That (69) lacks a free choice reading is expected given that sluicing forces the disjunction to take wide scope in the prejacent (see Section 2.2.2) — over the modal *can*, in this case (Aloni 2007; Fusco 2019).

(68) **Context:** *Bob is participating in a scientific study. Participants in the study have rules regarding what they are allowed to drink. Participants in Group A may drink only tea. Participants in Group B may drink only coffee. Alice knows that Bob is a participant in the study, but does not know what group he is in. She reports:*

Bob can have coffee or tea.

(69) Bob can have coffee or tea, but I'm not sure which.

Free choice readings arise when disjunction (or an indefinite) occurs beneath a modal; if the disjunction takes wide scope, then the conditions for free choice are not met. Thus, the possibility of a free choice inference for a given sentence indicates that disjunction (or indefinite) scopes beneath the modal.

When disjunction controls agreement in the presence of a modal, both singular and plural agreement permit free choice inferences. This is shown for a necessity modal in (70) and for a possibility modal in (71). Of particular interest for our purposes, that free choice inferences are available in (70b) and (71b) indicates that there are grammatical interpretations of the plural-

agreeing disjunction sentences in which disjunction scopes beneath the modal — corroborating Ivlieva (2013)’s finding that plural-agreeing disjunction is grammatical under modality.

(70) **Context:** *The trash can is overflowing, so we need someone to take out the trash. Mary and John are the people on trash duty today.*

- a. John or Mary **needs** to take out the trash.
- b. John or Mary **need** to take out the trash.
- c. ✓FC inference: $\Diamond (\text{John takes out the trash}) \wedge \Diamond (\text{Mary takes out the trash})$

(71) **Context:** *John wants to study abroad. According to university rules, there are certain places that John can and cannot go. John’s friend, Mary, is familiar with the rules, and says:*

- a. Paris or London **is** allowed.
- b. Paris or London **are** allowed.
- c. ✓FC inference: $\Diamond (\text{John goes to Paris}) \wedge \Diamond (\text{John goes to London})$

As modals are quantifiers over possible worlds (Hintikka 1962), the grammaticality of plural disjunctive agreement demonstrated in (70b) and (71b) supports Ivlieva’s Generalization. Ivlieva’s Generalization further predicts that if disjunction scopes over the modal, then plural agreement will not be possible. I show now that this prediction holds.

Contexts where disjunction outscopes modality are given in (72) and (73). As expected, in these contexts where disjunction scopes over the modal, plural agreement is unacceptable. Further, even in the acceptable sentences with singular agreement, (72a) and (73a), free choice inferences are not observed. In (72), the free choice inference — that Bob is an acceptable person to power down the machine and Cheryl is an acceptable person to power down the machine — is incorrect, given department protocols over who should turn off the machine. For (73), the free choice inference would be that both rosin and pine tar are permitted substances.

(72) **Context:** *The department has a machine that is very finnick. If it is powered down wrong, all the data are lost; and the steps needed to power it down differ depending on how it was last used. Therefore the protocol is that whoever used the machine last must be the one to turn it off. Alice notices that the equipment was left on. She knows that either Bob or Cheryl used the machine last, but doesn't know who exactly. Alice says:*

- a. Bob or Cheryl **needs** to power down the machine.
- b. #Bob or Cheryl **need** to power down the machine.

(73) **Context:** *In baseball, hitters can use whatever sticky substances they please to improve their grip on their bats. Popular substances include pine tar and rosin. Pitchers, however, are prohibited from using pine tar to grip the ball; rosin is the only substance they may use. Rory is telling his cousin about baseball. He knows that one of the sticky substances is permitted for pitchers, but doesn't remember which one. Rory says:*

- a. Batters can use anything they want to improve their grip. But for pitchers, (just/only) rosin or pine tar **is** allowed.
- b. Batters can use anything they want to improve their grip. #But for pitchers, (just/only) rosin or pine tar **are** allowed.

From this discussion, we conclude that singular-agreeing disjunction, like non-agreeing disjunction is ambiguous with respect to modal scope, while plural-agreeing disjunction necessarily scopes under modals.

2.3 Sentences with multiple possible licensors

In Section 2.2, I have shown that the same pattern repeats itself across a wide variety of constructions in English: Plural-agreeing disjunction must take narrow scope relative to various semantic operators, whereas singular-agreeing disjunction can take alternatively narrow or wide

scope relative to these same operators — just as disjunction that does not control agreement and indefinites is known to do. The data in Section 2.2, I have argued, support the generalization originally put forward by Ivlieva (2013) for disjunctive agreement in Russian, which I have been calling Ivlieva’s Generalization:

(19) *Ivlieva’s Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

On the basis of the data in Section 2.2, we might entertain an alternative hypothesis to (19), however. Perhaps plural-agreeing disjunction — rather than needing to be within a polar question, downward-entailing environment, or within the scope of quantifier — is restricted in a different way: It takes obligatory narrow scope with respect to any other scopal operator in the sentence. Said another way, perhaps plural-agreeing disjunction — unlike singular-agreeing disjunction and unlike disjunctions more generally — is simply not a scope-taking element.

In this section, I present evidence that (19) is indeed the correct empirical generalization for the distribution of plural disjunctive agreement in English, rather than the alternative hypothesis that plural-agreeing disjunction takes obligatory narrow scope. The relevant data comes from sentences that have multiple possible licensors, by which I mean sentences with multiple semantic operators that provide the kind of environment in which plural-agreeing disjunction can grammatically take existential scope. I will show that the presence of a second, higher licensor allows plural-agreeing disjunction to outscope an operator which — absent the higher licensor — it would obligatorily scope below.

As a first example, let us consider the sentence pair in (74). (74a), in which disjunction controls plural agreement within the clause embedded under *deny*, has only a narrow-scope reading of disjunction. That is, (74a) can mean only that for both Suzy and Faye, Marv denied that they were

cheating.⁴ The unavailable high-scope reading for (74a) would be that there is some person — either Suzy or Faye — who Marv denied was cheating.⁵

Yet if (74a) is embedded within a conditional, as in (74b), then the existential force of disjunction can be interpreted above *deny*. That is, (74b) can mean that Marv is delusional if there's anyone among Suzy and Faye who Marv denied was cheating (i.e., a context where Suzy and Faye were both obviously cheating). As we saw in Section 2.2.3, antecedents of conditionals are themselves licensing environments for plural-agreeing disjunction. Thus (74b) shows that the presence of this higher licensing environment allows plural-agreeing disjunction to take scope higher than it otherwise could. The possibility of an intermediate scope reading for (74b) is compatible with Ivlieva's Generalization (19) but not with the alternative hypothesis that plural-agreeing disjunction has obligatory narrow scope.

- (74) a. Marv denied that Suzy or Faye **were** cheating. * $\exists > \text{deny}$
 b. If Marv denied that Suzy or Faye **were** cheating, he's delusional. $\checkmark \text{if} > \exists > \text{deny}$

As for other readings of (74), we note that (74b) does also have a narrow-scope disjunction reading — that is, a reading under which the following eventuality would indicate Marv's delusion: Someone claimed 'Suzy or Faye were cheating', and Marv said 'That's not true!'. The singular-agreeing disjunction counterpart of (74b) has both the narrow-scope reading and the intermediate-scope reading, but also allows a third reading in which disjunction takes widest scope, out of the conditional. The widest-scope reading means that there is a certain person — either Suzy or Faye — such that if Marv denied that this person was cheating, then he is delusional.

We observe a similar alleviating effect of the conditional in that it allows plural-agreeing disjunction to scope out of comparatives. Recall from Section 2.2.4 that plural-agreeing disjunction obligatorily scopes inside the standard of comparison. For example, (75) can only mean that Ann grades more papers than whoever grades more papers out of Bob and Cal. (75) cannot mean that

⁴By DeMorgan's law, $\neg(a \vee b) = \neg a \wedge \neg b$.

⁵Note that as expected, the high-scope reading is available in the analogous sentence for (74a) where the disjunctive subject instead controls singular agreement.

one of Bob and Cal is such that Ann grades more papers than that person.

(75) Ann grades more papers than Bob or Cal **do**. * $\exists > \text{Comp}$

Repeating what we did in (74), we now embed (75) within a conditional antecedent; the resulting sentence is shown in (76). Unlike (75), (76) does have a reading where the existential outscopes the comparative clause. For instance, (76) could felicitously be used in a situation where Ann is being paid less than Bob and less than Cal — making it an issue if Ann is doing more work than just one of them, regardless of who that happens to be. (76) also allows a narrow-scope reading of disjunction relative to the comparative.

(76) If Ann grades more papers than Bob or Cal **do**, then she's doing too much. ✓if $> \exists > \text{Comp}$

We have seen, thus, that in configurations where a conditional antecedent embeds plural-agreeing disjunction beneath some other putative licenser, plural-agreeing disjunction can take higher scope than it otherwise could if it were not embedded within a conditional. The pattern generalizes: Other environments besides conditional antecedents also enable plural-agreeing disjunction to take non-narrow scope. These environments include sentences with deontic modality in the matrix clause and imperatives.

The alleviating effect of deontic modality on disjunctive scope is demonstrated in (77). As a baseline, note that *or* cannot scope over *demonstrate* in (77a); a wide-scope reading of (77a) would be paraphrased as ‘one of the items is such that the professor demonstrated that said item is composed entirely of hydrogen, oxygen, and carbon’. On the other hand, *or* can take scope over *demonstrate* when embedded under *must* in (77b); the relevant reading can be paraphrased as ‘Sam must demonstrate that the bottle is entirely hydrogen, oxygen, and carbon or that the shirt is entirely hydrogen, oxygen and carbon (his choice)’. Note that a narrow-scope disjunction reading for (77b) has weaker truth conditions than the wide-scope reading we are targeting — on the narrow-scope reading, simply demonstrating that some item among the two is composed entirely of hydrogen, oxygen, and carbon would be sufficient to pass the exam, even if Sam

fails to distinguish which item(s) of the two satisfy(s) the condition. A third reading for (77b), in which disjunction outscopes both *must* and *demonstrate* — brought out, for instance, by a context in which the professor has concealed the precise exam requirements (i.e., which item the demonstration must be performed upon) from the speaker — is not available.

- (77) a. The professor demonstrated that this bottle or this shirt **are** composed entirely of hydrogen, oxygen, and carbon. $*\exists > \text{demonstrate}$
- b. To pass the exam, Sam must demonstrate that this bottle or this shirt **are** composed entirely of hydrogen, oxygen, and carbon. $\checkmark \text{must} > \exists > \text{demonstrate}$

Imperative statements have been analyzed to contain a covert necessity modal (Han 1999, 2000; Kaufmann 2012). We cannot independently test whether imperatives license plural disjunctive agreement in English since the second-person subject occupies the same position that a disjunctive subject would need to occupy in order to control agreement. However, given Ivlieva’s Generalization, we expect that covert modality supplied by an imperative ought to license plural-agreeing disjunction.⁶

We find that indeed, imperative force allows disjunction to take existential scope out of environments it otherwise could not scope out of. In (79a), disjunction cannot scope above *tell*; such a reading would mean that there’s a particular grandparent (whose identity is perhaps unknown to the speaker) who Mom told Junior was coming. When embedded in the imperative, however, the reading where disjunction scopes over *tell* (beneath the modality) is in fact preferred; under such a reading, the addressee must select a grandparent — either Grandma or Grandpa — and tell Junior that the selected grandparent is coming.

⁶In another connection to NPIs: Imperatives are known to license certain NPIs (Giannakidou 1998), and analyses seeking to derive the distribution of free choice items have turned to modality to explain the acceptability of free choice items in imperatives (Aloni 2007):

- (78) a. *Yesterday Mary pressed any key.
 b. Press any key.

For further comparison of plural-agreeing disjunction versus NPIs and free choice items, see Section 4.2.

- (79) a. Mom told Little Junior that Grandma or Grandpa **are** coming. $*\exists > \text{tell}$
- b. *Advice to calm down a crying toddler:* Tell Little Junior that Grandma or Grandpa **are** coming. $\checkmark \square > \exists > \text{tell}$

A third reading for (79b), where *or* outscopes the imperative, is inaccessible; such a reading would tell the addressee that there is some particular grandparent (unspecified between Grandma or Grandpa), who the addressee should tell Junior is coming. This reading is unavailable with singular-agreeing disjunction and non-agreeing disjunction as well, showing that there are independent limits to where disjunction can take scope.

Further examples of plural-agreeing disjunction taking higher scope in the presence of imperative force than it otherwise could are shown in (80).

- (80) a. Close your eyes. Picture yourself in a dark forest. Imagine that Frankenstein or the boogeyman **are** chasing you. $\checkmark \square > \exists > \text{imagine}$
- b. Ann, grade more papers than Bob or Cal **do**. (It doesn't have to be both of them — just out-grade one, at least!) $\checkmark \square > \exists > \text{Comp}$

As a final example, we consider universal quantification as a licenser of intermediate scope. For a baseline, take the sentence (81a). (81a) has a narrow-scope disjunction reading. For example, if a delivery is expected very late at night and the business requires that one person (it doesn't matter who) is present to receive it, (81a) could express that there must be one person who works late. (81a) cannot mean that one of Mary and John (unspecified who) has a requirement that they work late — i.e., (81a) does not have a reading where disjunction scopes over *need*. On the other hand, when universal quantification is present in the form of *every Tuesday* in (81b), an intermediate scope reading is possible, where disjunction scopes over the modal *need*. For instance, (81b) is felicitous in the context (81c).

- (81) a. John or Mary **need** to work late (tonight). * $\exists > \square$
- b. Every Tuesday, John or Mary **need** to work late.
- c. Intermediate-scope disjunction ($\forall > \exists > \square$): ✓(81b)

Context: *A group of friends is planning a dinner meetup. The dinner is to include John and Mary, though they are not present for the conversation. One person suggests that the group find a Tuesday that works for everyone. Sal knows that John’s work requires him to stay late every 1st, 2nd, and 3rd Tuesday of every month and that Mary has to work late every 3rd, 4th, and 5th Tuesday of every month. So Sal says, ‘No, Tuesday won’t work... (81b)’*

It should be pointed out that it is not always the case, when plural disjunctive agreement occurs in sentences with multiple potential licensors, that an intermediate-scope reading with plural-agreeing disjunction is possible. For example — even though we have seen both that clausal embedding verbs license plural-agreeing disjunction (Section 2.2.2) and that plural-agreeing disjunction can scope out of the embedded clause provided a higher licensor is present (e.g., (74b)) — a sentence where plural-agreeing disjunction is doubly embedded beneath two attitude predicates does not seem to have an intermediate scope reading. That is, (82a) is unacceptable in the context (82b), which is an intermediate-scope context. Singular-agreeing disjunction and non-agreeing disjunction are acceptable in (82b); the latter fact was originally noted by Rooth and Partee (1982).

- (82) a. Sally thinks that Jan believes that the table or the shelf **are** arriving tomorrow.
 $^{??}$ think $> \exists >$ believe.
- b. Intermediate-scope disjunction (think $> \exists >$ believe): $^{??}$ (82a)

Context: *Jan told Sally that the table is coming tomorrow. But Sally couldn’t hear Jan clearly, so isn’t sure exactly what Jan said. Sally relates what she knows to the speaker, saying ‘Either Jan believes that the table is coming tomorrow or he believes*

that the shelf is coming tomorrow.’ The speaker then reports: (82a)

A second example where an intermediate scope reading is unavailable can be found in Ivlieva (2013). In (83), a similar issue as with (82) arises: Universal quantification independently is known to license plural-agreeing disjunction in its scope (see (20c)), yet plural-agreeing disjunction cannot take existential scope into this environment.

- (83) Každaja iz devoček budet rada, esli k nej prid-ut Petja ili Vasja.
 each of girls will.be glad if to her will.come-PL Petja or Vasja

✓‘Each of the girls will be glad, if Petja or Vasja come to her.’ ($\forall > \text{if} > \exists$)

✗‘Each girl has a particular boy who is either Petja or Vasja, such that she will be glad if that boy comes to her’ ($\forall > \exists > \text{if}$) (Ivlieva 2013:122)

It is not clear under what circumstances intermediate scope readings are available or are not available with plural disjunctive agreement, and I leave this as an open question for future research. I discuss this issue further in Section 4.2.1 as it relates to NPIs and in Section 6.4.4 as it relates to covert modality as a licenser. For the purposes of this section, though, it suffices to have shown that under certain conditions, at least, plural-agreeing disjunction can take intermediate existential scope beneath a higher licensing operator. That plural-agreeing disjunction at least sometimes is observed scoping above another scope-taking operator disproves the possibility that plural-agreeing disjunction has obligatorily narrow scope.

Until this point in the chapter, we have been able to account for the restricted distribution of plural disjunctive agreement entirely in terms of quantificational environments. Even the NPI-licensing environments we have looked at so far that allow plural disjunctive agreement — conditional antecedents, restrictors of universal quantifiers, and comparatives — I have argued can be accounted for strictly in terms of quantification. That is, the data thus far would support the following simplified version of Ivlieva’s Generalization, which removes reference to downward-entailing environments and questions (c.f., (19)):

(84) *Ivlieva's Generalization* (simplified)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within the scope of a quantifier.

Do we even need polar questions and downward-entailment to describe the distribution of plural disjunctive agreement? In the next two sections, I argue that we do.

2.4 Questions

When used in questions, *or* is ambiguous between two different kinds of requests for information: alternative questions, and polar questions (Larson 1985, Biezma and Rawlins 2012, Pruitt and Roelofsen 2013, a.o.). An alternative question raises two propositions and invites the listener to choose one of the two propositions, with the expectation that exactly one of the offered propositions is true. A polar question raises one proposition and invites the listener to indicate whether that proposition is true. Alternative and polar questions are distinguished by both the answers that they allow and the intonation that they are pronounced with (Pruitt and Roelofsen 2013).

Though questions with *or* are usually string-ambiguous between polar and alternative question interpretations, verbal agreement can disambiguate between the interpretations when the disjunction occurs in the sentential subject. Singular agreement admits both polar and alternative question interpretations, whereas plural agreement is compatible only with a polar question interpretation (Peterson 1986; Winans 2019).

- (85) a. **Does** Lindsay or Angela sing? ✓PolQ, ✓AltQ
b. **Do** Lindsay or Angela sing? ✓PolQ, *AltQ
(Winans 2019)

Ivlieva (2013) does not discuss alternative questions in Russian, but similar patterns — where

alternative questions require that disjoined SG-SG subjects control singular agreement and polar questions allow either agreement form — are found in German and Egyptian Arabic (Winans 2019).

Thus, an accurate description of licensing environments for plural-agreeing disjunction must include polar questions. Moreover, due to the split seen in (85) between polar questions and alternative questions, a precise statement cannot name just ‘questions’ as the licensing environment; it must be ‘polar questions’. This divergence between polar and alternative questions represents another parallel between plural-agreeing disjunction and NPIs (see Section 4.2.1).

2.5 Negation and other downward-entailing environments

Negation is the canonical downward-entailing environment, and — consistent with Ivlieva’s Generalization — plural disjunctive agreement is grammatical beneath negation, as is singular disjunctive agreement. Examples with matrix-clause negation and an embedded subject are given in (86) (see also Foppolo and Staub 2020). Note that whether the embedding verb is a Neg-raising verb, as in (86a), or a non-Neg-raising verb, as in (86b), does not change the behavior.

- (86) a. ✓Nick doesn’t think/believe that the table or the shelf **is/are** coming tomorrow.
 b. ✓Sally is not certain/sure that the bus or the train **is/are** going to arrive on time.

Ivlieva (2013:102) provides an example in Russian similar to (86a), also showing the acceptability of plural disjunctive agreement embedded under matrix negation. Alone, though, examples such as (86) do not demonstrate that downward-entailing environments are licensors for plural-agreeing disjunction. In an argument that recalls the discussion at the ends of Sections 2.2.3 and 2.2.4, we could simply attribute the acceptability of (86) to the presence of the embedding attitude predicate which itself encodes quantification — thereby ignoring the negation altogether. To test negation more directly, we must remove the embedding environment.

Ivlieva notes that such a test is not possible in Russian: When negation is in the same clause as

disjunction, *ili* ('or') cannot be used; the bisyndetic disjunction *ni ... ni* ('not ... not') must be used instead. A similar phenomenon is observed in English, where *neither ... nor* is preferred over *or* in the presence of clausemate negation. Besides noting that naturally occurring usages of plural disjunctive agreement do occur with clausemate negation — see the examples in (87) — we note that with *neither... nor*, both singular and plural agreement are grammatical, as shown in (88).

- (87) a. Daisy or John **aren't** millionaires yet, hard to believe considering that's her first real big gig, while John has had a couple decent gigs before this.
(boards.theforce.net)

- b. I'm actually on a mission where Hal or John **aren't** here to correct me or save me.
(wattpad.com)

- (88) a. ✓Neither the letter nor the package **has/have** arrived.
b. ✓Neither the professor nor the TA **was/were** present at the start of class.
c. ✓Neither Mary nor Sue **speaks/speaks** Italian.

Similarly in German, both singular agreement and plural agreement are possible with *weder... noch* ('neither ... nor') (Durrell 2021). In Romanian as well, both singular and plural disjunctive agreement are possible with clausemate negation:

- (89) Ion sau Maria nu ✓/?**a** /✓**au** adus o umbrelă.
John or Mary not have.SG /have.PL brought an umbrella
'Neither John nor Mary has/have not brought an umbrella.'

Unlike *either... or*, *neither... nor* roofs the scope of disjunction, even independent of disjunction. We therefore do not see any asymmetries between singular-/non-agreeing disjunction and plural-agreeing disjunction with respect to scope for *neither... nor*.

Other downward-entailing environments in which plural disjunctive agreement is grammatical are shown in (90).

(90) a. *Before-clause*

✓Mr. Netanyahu [...] recalls that the conflict began before the West Bank or Gaza **were** occupied. (nytimes.com) (Ivlieva 2013:123)

b. *Unless-clause*

✓You're all going to be in trouble unless John or Mary **tell** me what happened.

c. *Superlative*

John is too smart to believe that Mary or Sue **are** seriously interested.

✓too > $\exists$ > believe

We conclude from this section that downward entailment – independent of quantification – is a suitable environment in which plural-agreeing disjunction can take existential scope. Thus, Ivlieva's Generalization as stated in (19) is the correct empirical generalization to account for the distribution of plural disjunctive agreement in English. Further, since we have not seen any differentiation in distribution between singular-agreeing disjunction and disjunction that does not control agreement, in terms of possible readings, no statement beyond (19) is needed to further specify where singular-agreeing disjunction may or may not be acceptable. Given the potential for competition between sentences with different agreement, I do not rule out the possibility that the restricted meanings available for a sentence where a disjunctive subject controls plural agreement may exert pressure against the use of singular agreement for a meaning that could also be expressed with plural agreement.⁷ I explore one such domain in Section 6.5, and we might also employ a similar line of reasoning to understand the unavailability of narrow-scope disjunction readings for singular-agreeing disjunction in German and Romanian embedded under the verb 'doubt' ((39c) and (40a)).

⁷See also Barker (2018) for a discussion of the scope-disambiguating properties of NPIs.

2.6 Adverbial quantifiers

Other quantifiers that can license plural-agreeing disjunction include epistemic adverbials such as *perhaps*, *maybe*, likelihood adverbials such as *probably* and *likely*, and frequency adverbials such as *sometimes* and *occasionally*. Examples are shown in (91).

- (91) a. *Epistemic adverbial*

Perhaps/Maybe John or Mary **is/are** coming.

- b. *Likelihood adverbial*

John or Mary **is/are** probably/likely coming.

- c. *Frequency adverbial*

Sometimes/Occasionally, John or Mary **brings/bring** donuts.

Unlike the licensors we have considered, singular-agreeing disjunction cannot take wide scope over *perhaps* or *maybe* in (92). In this case, though, the prohibition on disjunction outscoping epistemic modals accords with a more general restriction that also applies to disjunction that does not control agreement, (92) — perhaps owing to the high structural position of epistemic modals (Cinque 1999; Hacquard 2000).

- (92) a. Perhaps/Maybe John or Mary will come. * $\exists$ > *perhaps/maybe*

- b. Perhaps/Maybe John is in New York or Boston. * $\exists$ > *perhaps/maybe*

With likelihood adverbials, (91b), and frequency adverbials, (91c), both singular-agreeing disjunction and non-agreeing disjunction — but not plural-agreeing disjunction — can take wide scope over the adverbial. Adverbial quantifiers, therefore, behave like other licensors we have seen in this chapter.

2.7 Cross-linguistic parallels

While the data discussed in this chapter are based primarily on English, we have discussed when pertinent some parallels that arise with other languages. These include Ivlieva's pioneering work on Russian as well as similarities with disjunctive agreement in Spanish, German, Romanian, and Egyptian Arabic. Based on the data we have examined, the cross-linguistic picture seems to be surprisingly uniform: Plural-agreeing disjunction is limited in its distribution, in that it can only take existential scope in certain semantic environments.

The sensitivity of verbal morphology to semantic environment with disjunction fits into an emerging typology of disjunction words cross-linguistically. Tiwa has two disjunction words, one which takes wide scope with respect to other clausemate operators, and another that takes obligatory narrow scope with respect to these same operators (Dawson 2019, 2020). In Sinhala, two disjunction words behave differently in questions, with quantifiers, and relative to modals, among other properties (Weerasooriya 2017, 2019). And in Ket, two disjunction words differ in their scopal interaction with intensional predicates, habituals, and imperatives, and in whether they lead to ignorance or indifference inferences (O'Rollins et al. 2024). None of these three languages have subject-verb agreement, so there is no observable interaction between the choice of disjunction word and the available verbal morphology. However, the kinds of semantic properties that the different disjunction words are sensitive to in these languages appear similar to those which affect verbal agreement in the languages I discuss in this dissertation. One language with both multiple disjunction words and subject-verb agreement is Cinyungwe; ongoing work by Lippard (2025) suggests a confluence between choice of disjunction words, verbal agreement, and similar kinds of semantic environments.

2.8 Chapter summary

In this chapter, we have examined how singular-agreeing and plural-agreeing disjunction pattern with respect to other semantic operators in the same sentence. Considering potential interactions between the existential scope of disjunction and the scope of other operators in the sentence, we see that — far from being in free variation with singular-agreeing disjunction — plural-agreeing disjunction has a restricted distribution: Its existential scope must be interpreted within either a polar question, in the scope of a downward-entailing operator, or under some quantificational operator. We have also seen that singular-agreeing disjunction – modulo a particular restriction with German and Romanian attitude verbs which can plausibly be explained via competition with plural-agreeing disjunction — shows none of the same restrictions on its distribution. That is, singular-agreeing disjunction can take scope in all the same places that disjunction that does not control agreement can. Cross-linguistic data converge to support the same picture.

I discuss in more detail the connections with other semantically marked indefinites in Chapter 4, but it is worth pointing out the kinds of semantic properties that we have shown disjunctive agreement to be sensitive to are the same ones that are discussed in relation to negative polarity items (NPIs), free choice items (FCIs), and dependent indefinites. However, unlike the NPIs/FCIs/dependent indefinites that are known to exist cross-linguistically, we see in the present study the semantic sensitivities to environment expressed as a reflex of agreement, rather than a lexical alternation (e.g., *a* vs. *some* vs. *any*).

We should note that at this point in our discussion, Ivlieva’s Generalization remains simply a descriptive statement: We have not said *why* these particular environments are the ones that license plural-agreeing disjunction. To this end, the licensing environments for plural-agreeing disjunction are expressed as the union of three different environments: polar questions, downward-entailing operators, and quantifiers. In Section 4.1, I offer a hypothesis for what unites these three kinds of environments, which will guide the analysis that I ultimately defend in Chapter 5.

Chapter 3

More on disjunctive number

In this chapter, I discuss further issues regarding disjunctive number as it pertains to verbal agreement. The discussion is divided into three parts. In Section 3.1, I argue that disjunction that controls singular agreement is distinct, syntactically and semantically, from disjunction that controls plural agreement. In Section 3.2, I show that even in sentences where disjunctions of singulars control plural agreement, these disjunctions do not behave like typical semantic pluralities. Finally, in Section 3.3, I discuss how the patterns of disjunctive agreement we have been looking at generalize to disjunctions involving plural DPs.

3.1 Correlates of singular-agreeing and plural-agreeing disjunction

In this section, I argue that, despite the fact that disjunctions of singular nominals can control alternatively singular and plural agreement, the underlying structure of a disjunction that controls singular agreement differs from that of a disjunction that controls plural agreement. I use as a comparison point group-denoting nominals (also called ‘collective’ nominals) in British English which, like disjunctions, can control both singular and plural agreement (Pollard and Sag 1994;

Elbourne 1999; Sauerland and Elbourne 2002; Smith 2021). The takeaway is that disjunction that controls singular agreement and disjunction that controls plural agreement are distinct at a featural level.

3.1.1 Conjoined verbs

We first examine the sentences where one disjunctive subject controls agreement on multiple coordinated verbal expressions. As noted by Peterson (1986), when verb phrases are coordinated and both display number agreement, the number agreement must be consistent across the two verbs: Either both verbs are inflected as singular (93a), or both verbs are plural (93b).¹

(93) a. Either Fred or Bill **likes** pork and **hates**/***hate** beef.

b. Either Fred or Bill **like** pork and **hate**/***hates** beef. (Peterson 1986:233)

In isolation, the paradigm in (93) is perhaps not particularly surprising or noteworthy. The locus of verbal agreement in English is around Tense. We might explain (93), therefore, by saying that each sentence in (93) has a single T node; in (93a), T is valued as singular whereas in (93b), T is valued as plural; and whatever number is present on T is reflected on the verb. More abstractly, we could attribute the uniformity in number across conjuncts in (93) to more general parallelism constraints on conjunction.

Agreement with group-denoting nominals in British English provides counter-evidence to such explanations of the unacceptability of non-uniform number across conjoined verbs in (93). Unlike sentences with disjointed nominal subjects, sentences where a group-denoting nominal controls agreement on conjoined verbs do not require that the verbs match in number. Instead, a 3/4 pattern is observed, where singular agreement in the first conjunct can be followed by either

¹The reader may notice that (93b) (along with several other sentences throughout this section) appears to violate Ivlieva's Generalization, in that plural-agreeing disjunction is felicitous, yet disjunction does not take existential scope within a quantifying or downward-entailing environment. We return to the licensing of plural-agreeing disjunction in Chapter 6. For the purposes of the present chapter, what matters is just that sentences with singular and plural agreement with disjunctive subjects have observable correlates beyond the initial verb that displays agreement.

singular or plural agreement in the second conjunct (Charnavel and Sportiche 2025).

- (94) a. The group **is** German and **is/are** famous.
b. The group **are** German and **are/*is** famous. (Charnavel and Sportiche 2025:6)

Sigurðsson et al. (2023) document a similar 3/4 pattern in Icelandic with sports teams:

- (95) a. Stjarnan **er** með boltann og **sækir/sækja** fram.
star.SG be.SG with the.ball and attack.SG/attack.PL forward
‘The Star has the ball and is/are advancing.’
b. Stjarnan **eru** með boltann og **sækja/*sækir** fram.
star.SG be.PL with the.ball and attack.PL/attack.SG forward
‘The Star have the ball and are/is advancing.’ (Sigurðsson et al. 2023:1)

Group-denoting nominals show us that it is in principle possible for a syntactic subject to control different number agreement forms on different verbs within the same sentence. Beyond just showing that disjunction and group-denoting nominals have distinct empirical profiles, I take the contrast between (93) and (94)–(95) to indicate that the subjects of (93a) and (93b) are syntactically distinct, such that each controls a different syntactic number on verbs that agree with it.

3.1.2 Anaphora

We find a similar phenomenon with anaphora as we did with conjoined verbs, in that singular- and plural-agreeing disjunctions behave differently with respect to anaphora and pronoun resolution. Singular-agreeing disjunction is compatible only with singular reflexives. Plural-agreeing disjunction, on the other hand, is compatible only with plural reflexives (Peterson 1986):

- (96) a. Fred or Bill **is** shaving himself/*themselves.
 b. Fred or Bill **are** shaving themselves/*himself. (Peterson 1986:233)

Echoing what we saw with conjoined verbs in the previous section, the pattern in (96) diverges from how group-denoting nominals behave with respect to reflexives. Group-denoting nominals display a 3/4 pattern in terms of anaphora, where a group-denoting nominal that controls singular agreement can co-refer with a plural reflexive, as seen in (97a) and (98a).

- (97) a. The government **has** embarrassed itself/themselves with this nonsense.
 b. The government **have** embarrassed themselves/*itself with this nonsense. (Smith 2021:82)
- (98) a. The committee **has** decided to reward itself/themselves.
 b. The committee **have** decided to reward themselves/*itself. (Charnavel and Sportiche 2025:6)

Likewise, in donkey contexts, singular-agreeing disjunction requires singular donkey pronouns, while plural-agreeing disjunction requires plural donkey pronouns. The intended reading for the sentences in (99) is that whoever scores, that person appears on the jumbotron. For (99a), some speakers accept *they* under a donkey reading, likely due to the availability of singular *they*. *They* is also possible in the consequent clause of (99a) under a non-donkey reading, i.e., one where both players appear on the jumbotron whenever either scores.

- (99) a. Whenever [LeBron or Steph]₁ **scores**, he_i appears/%they_i appear on the jumbotron.
 b. Whenever [LeBron or Steph]₁ **score**, they_i appear/*he_i appears on the jumbotron.

The fact that singular-agreeing disjunction requires (reflexive) pronouns with singular features, and that plural-agreeing disjunction requires (reflexive) pronouns with plural features, indicates that singular-agreeing and plural-agreeing disjunction differ in the semantic number of the object

that they introduce: Singular-agreeing disjunction introduces a semantic singular, and plural-agreeing disjunction introduces a semantic plural.

Once we turn to inanimate DPs, a slightly more complicated picture emerges. Whereas the third-person plural pronoun *they* is syncretic with singular *they*, the inanimate series does not have this same syncretism. We find that in the inanimate case, a singular donkey pronoun is acceptable with singular-agreeing disjunction — as in (100a) — but neither a singular donkey pronoun nor a plural donkey pronoun is acceptable with plural-agreeing disjunction. That is, (100b) with *them* can only have the non-donkey reading, where the instructions are to repair both the AC and the water heater, regardless of which one broke.

(100) **Context:** *Instructions to a building manager.*

- a. If [the AC or the water heater]_i **breaks**, repair it_i/*them_i.
(=repair the machine that broke)
- b. If [the AC or the water heater]_i **break**, repair *them_i/*it_i.
(=repair the machine that broke)

The unavailability of plural donkey pronouns with inanimates suggests that the semantic object introduced by plural-agreeing disjunction is not a semantic plural, despite controlling plural verbal agreement. We see further evidence of this in the next section.

3.2 Disjunction and semantic plurality

In this section, I show that plural-agreeing disjunction — despite introducing objects that in some ways pattern like semantic plurals in terms of pronoun resolution — do not have semantic properties that are typical of plurals. I build here on discussion in Himmelreich and Hartmann (2023).

The agreement morphology of disjoined SG-SG nominals suggests that these disjunctions occupy

some space between singulars and plurals. According to the agreement data, disjointed SG-SG nominals cannot be classified as strictly singular, as syntactically singular nominals obligatorily control singular agreement (103).² But disjointed SG-SG nominals also differ from plural nominals and conjunctions, which, aside from a few exceptional cases, obligatorily control plural agreement (104).³

- (103) a. The cat **is**/***are** black.
 b. Susan **goes**/***go** shopping every Monday.
- (104) a. The cats **are**/***is** black.
 b. Susan and Leila **go**/***goes** shopping every Monday.

Based on the observation that SG-SG disjunctions allow both agreement forms, we might hypothesize that disjointed SG-SG nominals are simply ambiguous between atomic and plural structures/meanings. Under this hypothesis, the disjunctions that display singular agreement are syntactic/semantic singulars, while the disjunctions that display plural agreement are syntactic/semantic plurals.

However, disjunction — even setting aside agreement — fails semantic tests for plurality, including compatibility with the adverb *respectively* (Eggert 2000; Gawron and Kehler 2004), the licensing of collective predicates, and the availability of cumulative readings (Himmelreich and Hartmann 2023). The unacceptability of disjunction with *respectively* and with collective predicates — as compared to the acceptability of plural nominals and conjunctions — is shown in (105) and (106).

²It is important to distinguish between syntactically vs. semantically singular nominals for the purposes of agreement. In English, singular *they* as well as singular *you* both pick out atomic individuals, but obligatorily control plural verbal agreement.

³Exceptions to this generalization include when both conjuncts refer to the same individual (101) or when the conjunction represents a single entity comprised of the sub-parts named in each conjunct (102).

(101) Her longtime companion and the future editor of her papers **was** happy to give his approval to her request. (McCawley 1998:372)
 (102) Pickles and strawberries **tastes** good. (Morgan 1972:280)

(105) *Respectively*

- a. Jenny and Penny are sisters. The two girls will be eight and ten years old this January, respectively. ✓plural
- b. Jenny and Penny will be eight and ten years old this January, respectively. ✓conjunction
- c. *Jenny or Penny will be eight and/or ten years old this January, respectively. *disjunction

(106) *Collective predicates*

- a. The two friends met yesterday. ✓plural
- b. Jim and Tim met yesterday. ✓conjunction
- c. *Jim or Tim met yesterday. *disjunction

To see that disjunction does not permit a cumulative reading, we must consider a scenario where a distributive reading is false but a cumulative reading is true. One such scenario is a context where Chef Mary scrambled (exactly) two eggs and Chef Tee scrambled (exactly) three eggs, where the predicate in question is *scrambled five eggs*. In this context, the chefs have scrambled five eggs in total, even though neither of the chefs, considered independently, scrambled five eggs. In this scenario, the plural definite (107a) and conjunction (107b) are both felicitous, but disjunction is not (107c).

(107) *Cumulative reading*

Context: *Mary scrambled exactly two eggs. Tee scrambled exactly three eggs.*

- a. The two chefs scrambled five eggs. ✓plural
- b. Mary and Tee scrambled five eggs. ✓conjunction
- c. # Mary or Tee scrambled five eggs. *disjunction

SG-SG disjunctions also cannot serve as antecedents to reciprocals, whereas prototypical pluralities and conjunctions can:

(108) *Reciprocals*

- a. The two girls watched {each other, one another}. ✓plural
- b. Lex and Fran watched {each other, one another}. ✓conjunction
- c. *Lex or Fran watched {each other, one another}. *disjunction

Returning now to cases where the SG-SG disjunction controls overt agreement morphology, we see that the incompatibility of disjunction with each of these diagnostics is independent of the agreement form. With both singular and plural agreement, we find that collective predicates, cumulative readings, *respectively*, and reciprocals are all unacceptable with disjunctive subjects.

(109) a. *Collective predicate*

*Jim or Tim **is/are** meeting this afternoon.

b. *Cumulative reading*

Context: Mary is cooking two eggs and Tee is cooking three eggs.

#Mary or Tee **is/are** cooking five eggs for tonight's dinner.

c. *Respectively*

*Jenny or Penny **is/are** turning eight and/or ten years old, respectively, this January.

d. *Reciprocal*

*Lex or Fran **is/are** watching each other carefully.

Thus, despite their ability to control plural verbal agreement, disjunctions of singular nominals do not behave as semantic pluralities.⁴ In this respect, disjunctive agreement resembles summative

⁴Some complexities within these data are discussed in Section 7.1.

agreement constructions (Postal 1998; Yatabe 2003; Grosz 2015), which also involve plural verbal morphology (110a) but are incompatible with collective predicates (110b) and reciprocals (110c):

- (110) a. [Sue's proud that Bill₁ ____] and [Mary's glad that John₂ ____] **have** $t_{1/2}$ traveled to Australia.
- b. *[Sue's proud that Bill₁ ____] and [Mary's glad that John₂ ____] have finally $t_{1/2}$ met.
- c. *[Bill is proud that Hilary₁ ____] and [Michelle is glad that Barack₂ ____] $t_{1/2}$ **support** each other. (Grosz 2015:11)

Contextualizing the discussion of this section alongside the facts shown in Section 3.1, we have argued that singular-agreeing and plural-agreeing disjunction are syntactically and semantically distinct from one other; however, plural-agreeing disjunction — like disjunction more generally — does not bear the hallmarks of semantic plurality.

3.3 Non-singular disjunction

Throughout the dissertation, we have focused on the availability of singular and plural agreement with disjointed SG-SG subjects. Importantly, the restrictions to certain semantic environments which we have seen hold of plural agreement with SG-SG subjects do not extend to plural agreement with disjointed PL-PL subjects. Disjointed plural subjects obligatorily control plural agreement and display all the same scopal flexibility that singular-agreeing SG-SG disjunctions and non-agreeing disjunctions do. To illustrate, (111) shows that wide-scope existential readings are possible with plural-agreeing disjointed PL-PL subjects with respect to attitude predicates, conditionals, comparatives, universal quantifiers, and adverbial quantifiers.

(111) a. *Attitude predicate*

Context: Ann told Bob, ‘My shelves will arrive tomorrow’. Bob, knowing that Ann ordered both shelves and dressers but forgetting what kind of furniture Ann just named, reports:

Ann believes that the shelves or the dressers **are** arriving tomorrow.

✓ $\exists >$ believe

b. *Conditional*

Context: Alex has two uncles who are married to each other and two aunts who are married to each other. Both pairs — the uncles and the aunts — have written joint wills. Alex’s lawyer is reviewing the two wills, but Alex omitted the signature pages that would identify each will as either the uncles’ or the aunts’. The lawyer sees that on one of the wills, Alex is bequeathed a large sum of money, but she cannot tell whose will it is. She reports:

If Alex’s uncles or his aunts **die**, Alex will be rich.

✓ $\exists >$ if

c. *Nuclear scope of universal quantifier*

Context: Sam always got let out to recess late. By the time he got there, the same group of students would always be using the swing set already. Sam didn’t know who the other students are, but they seemed to all be from the same third-grade class — either Mrs. Barth’s or Mr. Whitney’s. Sam complained:

Every day at recess, Mrs. Barth’s students or Mr. Whitney’s students **were** taking up the whole swing set.

✓ $\exists > \forall$

d. *Comparative*

Context: Three families live nearby and have kids. The Green family has two children. Speaker doesn’t know how many children the Smiths or the Greens have. However, based on seeing the Smith children and the Brown children altogether,

speaker knows that there are six children total across the two families. Nonetheless, speaker can confidently conclude:

The Greens have fewer children than the Smiths or the Browns **do**. ✓ $\exists >$ Comp

e. *Adverbial quantifier*

Context: *Nate is a renowned college basketball analyst. Each year, he predicts which team will win the March Madness tournament, and he is usually right: Over 70% of Nate's picks over the years have gone on to win. That is, if Nate says a team will win, they probably will. To build suspense when he announces his pick, Nate does the following: Starting from a whiteboard that has all the teams in the tournament, he removes teams one by one. Whichever is the last team left, that is who Nate thinks will win. At this point, Nate has removed all teams except the UCLA Bruins and the Princeton Tigers.*

The Bruins or the Tigers **are** probably going to win. ✓ $\exists >$ probably

Further, (112) demonstrates that, unlike with disjointed SG-SG subjects, disjointed PL-PL subjects can (in fact, must!) control plural agreement in alternative questions.

(112) *Alternative question*

Context: *Two Boston Celtics fans are discussing basketball.*

Are the Knicks or the Sixers the sorriest franchise in the NBA? ✓AltQ

(111) and (112) show that the restriction on where plural-agreeing SG-SG disjunctions may take scope cannot be attributed solely to the fact that these disjunctions control plural agreement. Rather, it is the combination of plural agreement and disjointed singular subjects which leads to the observed semantic effects.

I conclude this section with a brief discussion of mixed number disjunction — that is, disjunctions where one disjunct is third-person singular and the other is third-person plural. With

mixed-number disjunctions, we must attend to the ordering of disjuncts: If closest disjunct agreement is possible, then *John or the kids* might pattern differently than *The kids or John* (see Section 7.5 for further discussion of closest disjunct agreement). Himmelreich and Hartmann (2023) find that in German disjunctions of mixed number, plural agreement is acceptable, while singular agreement is unacceptable. This preference for plural agreement holds regardless of ordering between the disjuncts and regardless of SV vs. VS word order; two such examples are shown in (113).

- (113) a. Das Regal oder die Tische **werden/*wird** morgen geliefert.
 the shelf.SG or the table.PL will.be.PL/SG tomorrow delivered
 ‘The shelf or the tables will be delivered tomorrow.’
- b. Morgen **werden/*wird** die Regale oder der Tisch geliefert.
 tomorrow will.be.PL/SG the shelf.PL or the table.SG delivered
 ‘The shelf or the tables will be delivered tomorrow.’

(Himmelreich and Hartmann 2023:9)

Preliminary data suggest that English patterns in the same way as German, though judgments in this domain are somewhat less clear than in the sentences with two disjoined singulars and two disjoined plurals (see also Morgan 1972; Peterson 1986; Haskell and MacDonald 2005).

- (114) a. If the table or the chairs **come/*comes** tomorrow, let’s party.
- b. If the chairs or the table **come/??comes** tomorrow, let’s party.
- c. Maria doubts that the table or the chairs **are/*is** coming tomorrow.
- d. Maria doubts that the chairs or the table **are/??is** coming tomorrow.

Interestingly, whereas disjoined singulars and disjoined plurals both allow wide-scope readings of disjunction (with singular and plural verbal agreement, respectively,) above conditionals and embedding verbs — as previously discussed — wide-scope disjunction readings are not possible

for disjunctions of mixed number, no matter the verbal agreement. This is shown in (115) and (116): (115a)–(115b) and (116a)–(116b) admit wide-scope disjunction readings, but (115c)–(115d) and (116c)–(116d) do not.

- (115) a. **Context:** *There is a particular sibling that John is very fond of (speaker is unsure which sibling). The other sibling, he doesn't much care for.*

✓If John's sister or his brother **comes** tomorrow, John will be ecstatic.

✓ $\exists$ > if

- b. **Context:** *John only likes his siblings who are a certain gender (i.e., his sisters or his brothers, speaker is unsure which). The other siblings, he doesn't much care for.*

✓If John's sisters or his brothers **come** tomorrow, John will be ecstatic.

✓ $\exists$ > if

- c. **Context:** *John has one brother and two sisters. He is fond of either the brother or the two sisters (speaker is unsure which). The other sibling(s), he doesn't much care for.*

*If John's brother or his sisters **come/comes** tomorrow, John will be ecstatic.

* $\exists$ > if

- d. **Context:** *Same as (115c).*

*If John's sisters or his brother **come/comes** tomorrow, John will be ecstatic.

* $\exists$ > if

- (116) a. **Context:** *One of John's siblings has a conflict for the party tomorrow. John told the speaker who, but the speaker has forgotten which sibling John said.*

✓John doubts that his sister or his brother **is** coming tomorrow.

✓ $\exists$ > doubt

- b. **Context:** *Two of John's siblings — either both his sisters, or both his brothers —*

have a conflict for the party tomorrow. John told the speaker who, but the speaker has forgotten which siblings John said.

✓ John doubts that his sisters or his brothers **are** coming tomorrow.

✓ $\exists$ > doubt

- c. **Context:** *John has one brother and two sisters. Either the brother or both the sisters have a conflict for the party tomorrow. John told the speaker who, but the speaker has forgotten which sibling(s) John said.*

*John doubts that his brother or his sisters **is/are** coming tomorrow.

* $\exists$ > doubt

- d. **Context:** *Same as (116c).*

*John doubts that his sister or his brothers **is/are** coming tomorrow.

* $\exists$ > doubt

The pattern for mixed-number disjunctions can thus be summarized as follows: Mixed number disjunctions obligatorily control plural verbal agreement, and further, they appear to follow Ivlieva's Generalization, in that they must appear beneath some licensing operator. Disjoined subjects of mixed gender are discussed in Section 7.5; judgments are even more unstable and variable in this domain (Winans 2019:7).

Chapter 4

Related phenomena

In Chapters 2–3, I have described the conditions under which disjoined nominals control singular agreement versus plural agreement. I have argued that evidence from English and several other languages supports the empirical characterization stated in (117), originally proposed by Ivlieva (2013) for Russian — what I have been calling Ivlieva’s Generalization.

(117) *Ivlieva’s Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

In this chapter, I contextualize the distribution of plural disjunctive agreement alongside other natural-language phenomena that are sensitive to semantic environment. The discussion proceeds in two parts. In Section 4.1, I show that the environments in which plural-agreeing disjunction may take scope are the same as the environments that block cross-sentential anaphora. This finding unites the three environments listed in (117) — polar questions, downward-entailing environments, and quantificational environments — under a single condition. In Section 4.2, I compare the restrictions on plural-agreeing disjunction’s distribution to three kinds of semantically marked indefinites: negative polarity items (NPIs), free choice items (FCIs), and dependent indefinites. I

show that although plural-agreeing disjunction bears similarities to each of these classes of words, it does not fit cleanly into any one of these classes.

4.1 Discourse anaphora

In this section, I argue that the kinds of environments where plural disjunctive agreement is licensed closely mirror those where discourse anaphora is blocked. We begin the discussion with an observation dating back to Karttunen (1976): The semantic environment where an indefinite is introduced affects whether it can be referenced later in the discourse by a pronoun or definite description.

Consider, for example, the sentences in (118), both of which include the indefinite *a car*. In (118a), *it* and *the car* can be used in the second sentence to refer to the car introduced in the first sentence. With negation, as in (118b), the situation is different. In the presence of negation, *it* and *the car* cannot be used in the second sentence to refer back to the car mentioned in the first sentence. As Karttunen observes, the unacceptability of *it/the car* in (118b) is a consequence of the first sentence's failure to introduce any car into the discourse. That is, the indefinite in the first sentence of (118b) fails to introduce a discourse referent into the main context.

- (118) a. Alf owns a car_i. It_i/The car_i is red.
 b. Alf doesn't own a car_i. #It_i/The car_i is red.

Negation does not always block indefinites from introducing a discourse referent, though (Kamp and Reyle 1993:104). Let us consider the same negated sentence, in the enriched context shown in (119). Given sufficient context, a reading emerges where the indefinite once again introduces a discourse referent, which can then be picked out by a pronoun or definite description. Adding *certain* draws out this second meaning (Hornstein 1984a,b).

- (119) **Context:** *We're in a company town, and Alf is the mega-rich CEO who runs it. Almost everything you see here is owned by Alf — the houses, the roads, the stores... But there*

are a handful of things here that aren't Alfs. For instance...

Alf doesn't own a (certain) car_i. It_i/The car_i is red.

We can characterize the difference between the two readings of *Alf doesn't own a car* as a matter of indefinite scope: The out-of-the-blue context, (118), heavily favors the narrow-scope indefinite reading, in which no discourse referent is introduced. The context in (119), on the other hand, yields a wide-scope indefinite reading, which does introduce a discourse referent.

The correlation between indefinite scope and the possibility of discourse anaphora repeats with other sentential operators, as well; the connection between semantic environment and the possibility of discourse anaphora has been discussed extensively in the dynamic semantics literature (e.g., Heim 1982; Groenendijk and Stokhof 1991; Kamp and Reyle 1993).

Revisiting the sentential operators which we saw in Chapter 2 to be licensors of plural disjunctive agreement, we find when an indefinite takes narrow scope relative to these same operators, a discourse referent is not available for cross-sentential anaphora. That is, when an indefinite takes scope in the positions where plural disjunctive agreement is licensed, subsequent reference to an individual introduced by the indefinite is not possible. We have just seen that negation has this property (c.f. Section 2.5); the examples in (120) demonstrate the same thing for the quantificational environments discussed in Section 2.2.

In order for the parallel between the unavailability of cross-sentential anaphora and the availability of plural disjunctive agreement to be clear, we must hold fixed in (120) narrow-scope readings of the indefinites. Narrow-scope indefinite readings can be brought out by using *any*-series indefinites, when these are grammatical (Ladusaw 1979). Under the narrow-scope indefinite readings of (120), cross-sentential anaphora to an individual picked out by the indefinite is not possible. Note that many of the sentences in (120) do also admit wide-scope readings of the indefinite; we discuss wide-scope readings below.

(120) a. *Attitude predicate*

Alf believes that a storm_i is coming. #It_i/#The storm_i has 100 mph winds.

Alf doubts that a/any storm_i is coming. #It_i/#The storm_i has 100 mph winds.

b. *Conditional antecedent*

If a/any stranger_i approaches you, run away. #She_i/#He_i/#The stranger_i is tall.

c. *Universal quantifier (restrictor)*

Every chef who cracked an/any egg_i was commended. #It_i/#The egg_i was yellow.

d. *Universal quantifier (nuclear scope)*

Every chef cracked an egg_i. #It_i/#The egg_i was yellow.

e. *Comparative*

Alf moves slower than a/any snail_i. #It_i/#The snail_i is slimy.

f. *Modal*

Context: *A bank robbery hits a snag: The robber directs the teller to unlock the safe, but the teller is unable to do so; she doesn't have the PIN. At this bank, managers have access to the safe, but no one else does. Therefore, in order for the robbery to continue...*

A manager needs to open the safe. #He_i/#She_i/#The manager_i has brown hair.

g. *Frequency adverbial*

Sometimes a letter_i arrives in the mail. #It_i/#The letter_i has four pages.

Now let us consider these same sentential operators with wide-scope readings of the indefinite, using *a certain* so that the indefinite takes wide scope. (121) shows that under wide-scope readings of the indefinite, cross-sentential anaphora is possible.

(121) a. *Attitude predicate*

Alf believes/doubts that a certain player_i is going to score. She_i/That player_i plays striker for the home team.

b. *Conditional antecedent*

If a certain professor is the instructor, the tests are extremely difficult. She_i/The professor_i loves watching students struggle.

c. *Universal quantifier (nuclear scope)*

Every chef cut a certain squash_i. It_i/The poor squash_i was barely recognizable by the time the last chef got to it_i.

d. *Universal quantifier (restrictor)*

Every chef who cut a certain squash_i was commended. It_i/The squash_i had extraordinarily tough skin, so even making a dent in it_i was tough.

e. *Comparative*

Alf moves faster than a certain cheetah_i. To be fair, it_i/the cheetah_i has a broken leg at the moment.

f. *Modal*

A certain manager_i needs to open the safe. He_i is the only one with a key.

g. *Frequency adverbial*

Sometimes a certain customer_i comes with her dog right when the restaurant opens. She_i has brown hair and likes to sit at the corner table.

Comparing (120) with (121), we observe a clear parallel between the environments in which an indefinite fails to introduce a discourse referent into the global context, on the one hand, and the environments in which plural-agreeing disjunction can take existential scope, as seen in Chapter 2. In particular, it is for narrow-scope readings of indefinites and disjunctions that — in the case

of indefinites — no global discourse referent is introduced and that — in the case of disjunction — the subject can control plural agreement.

To clarify my use of the word ‘global’: I take a discourse referent to be present in the global context if it can be referenced via anaphora in a sentence that follows it.¹ The distinction is needed because I do not wish to claim — for narrow-scope indefinites, nor for plural-agreeing disjunction — that they introduce no discourse referent. Indeed, we saw in Section 3.1.2 that plural-agreeing disjunction does introduce a (plural) discourse referent that is accessible for donkey anaphora. The same holds for indefinites; this is the very reason why donkey sentences have attracted attention.

Imperatives, too, both fail to introduce discourse referents into the global context — as demonstrated in (122) — and also license plural-agreeing disjunction (Section 2.3). Note that imperatives with *a certain NP* are pragmatically very odd because in contexts where an imperative would be used, it would typically be uncooperative to use an indefinite, if the speaker were to have in mind a particular witness for the indefinite.

(122) *Imperative*

Read a book_i! #It_i/#The book_i is long.

In Section 2.3, we saw that plural-agreeing disjunction can have non-narrow-scope readings, provided a higher licenser is present beneath which the disjunction takes existential scope. The crucial data were pairs of sentences such as (123), repeated from (74).

- (123) a. Marv denied that Suzy or Faye **were** cheating. * $\exists >$ deny
 b. If Marv denied that Suzy or Faye **were** cheating, he’s delusional. $\checkmark$ if $> \exists >$ deny

Analogous sentences to (123), with indefinites in place of disjunction, are shown in (124). We see in (124a) that when the indefinite takes scope above the embedding verb, discourse anaphora is possible. On the other hand, if the indefinite takes scope above the embedding verb but within

¹This is a rough definition which could be refined. For example, given sentences S_1 and S_2 : Discourse anaphora in S_2 to a discourse referent introduced in S_1 will be possible in the discourse consisting of S_1 followed immediately by S_2 (i.e., “ $S_1. S_2$ ”) if and only if the same holds in the discourse where S_1 and S_2 are joined by *and* (i.e., “ S_1 and S_2 ”). My definition also discounts the possibility of modal subordination or telescoping effects (Roberts 1987).

some other anaphora-blocking environment such as a conditional, then discourse anaphora is once again blocked (124b). Notice that replacing *a* in (124b) with *a certain* yields a high-scope indefinite reading which does permit discourse anaphora.

- (124) a. Marv denied that a (certain) student of his_i was cheating. He was watching her_i the entire exam, he said. ✓ $\exists > \text{deny}$
- b. If Marv denied that a/any student of his_i was cheating, he's delusional. #She_i/#He_i was wearing smart glasses the entire exam. (intended: if $> \exists > \text{deny}$)

Turning lastly to questions, we note a difference between polar questions and alternative questions in their behavior with respect to discourse anaphora. In polar questions, discourse anaphora is not possible with either indefinites (125a) or with disjunctions (125b).

- (125) a. *Polar question (indefinite)*
- Has a/any blizzard_i ever hit Los Angeles? #It_i/#The blizzard_i was/is extremely destructive.
- b. *Polar question (disjunction)*
- Context:** *Alf missed the first day of the conference. Mary and Sue are former students of Alf's and he wants to know whether he missed presentations by either of them.*
- Was [Mary or Sue]_i presenting yesterday? _{PolQ} #She_i is brilliant.

On the other hand, discourse anaphora is possible with alternative questions: *She* in (126) can refer to the person picked out by *Mary or Sue*, who is presupposed to (uniquely) exist by the alternative question. Again, we note a connection to the distribution of plural disjunctive agreement: Plural disjunctive agreement is grammatical in polar questions but not in alternative questions (see Section 2.4). Since alternative questions require disjunction, we cannot construct an alternative question analogous to (126) where an indefinite replaces the disjunction.

(126) *Alternative question*

Context: *Mary and Sue are co-authors on a paper that was presented yesterday at the conference. An audience member at the talk, not knowing Mary or Sue, wants clarification on which co-author gave the talk.*

Was [Mary or Sue]_i presenting yesterday?_{ALTQ} She_i was brilliant.

Summarizing what we have seen in this section: The semantic environments where plural-agreeing disjunction can take existential scope closely match the semantic environments where an indefinite does not introduce a discourse referent into the global context. In Chapter 5, I will argue that it is precisely the inability of plural-agreeing disjunctions to introduce a discourse referent into the global context that underlies their restricted distribution. This kind of approach has been previously proposed to derive the distribution of NPIs, as I discuss in Section 4.2.1. Therefore, before seeing how to formally account for the distribution of plural disjunctive agreement, let us take the opportunity to compare how plural-agreeing disjunction relates in its distribution to other, better-studied indefinites that are also sensitive to the semantic environments in which they appear.

4.2 Other semantically marked indefinites

In this section, we compare the semantic licensing requirements of plural-agreeing disjunction with those of other indefinites that require certain licensing conditions to be met. These include negative polarity items (NPIs), free choice items (FCIs), and dependent indefinites. A fourth kind of semantically marked indefinite also deserves mention here: Epistemic indefinites, i.e., indefinites that convey some partial information state on the part of the speaker relative to the witness of the indefinite (Strawson 1974; Alonso-Ovalle and Menéndez-Benito 2003; Aloni and Port 2015; Weerasooriya 2019). I defer discussion of epistemic indefinites until Chapter 6, after I have discussed epistemic conditions on plural disjunctive agreement.

The exercise of segmenting indefinites into these neat classes — NPIs, FCIs, etc. — is somewhat artificial, given how much variation is observed across indefinites cross-linguistically (Haspelmath 1997; Dawson and Jenks 2023). Many of these classes of words show variation within themselves as to the precise licensing conditions that they require (e.g., Aloni and Port 2015 on FCIs and epistemic indefinites; van der Wouden 1997; Zwarts 1996, 1998; Giannakidou 1998 on NPIs). Moreover, languages often use the same word to fulfill multiple of these properties. For instance, *any* has both FCI and NPI properties in English; and in German, *irgendein* functions as both an FCI and an epistemic indefinite (Kratzer and Shimoyama 2002). Though I certainly cannot do justice to over 40 years of research into indefinites, in this section I aim to highlight generalizations that can be made across languages for each class of words, and I compare these properties to those of disjunctions that control singular and plural agreement.

4.2.1 Negative polarity items

The prototypical elements whose distributions follow certain licensing conditions are negative polarity items (NPIs). NPIs are lexical items that can appear in ‘negative’ environments but not positive environments. The canonical negative environment is under sentential negation, as shown in (127) for the English NPIs *any* and *ever*:

- (127) a. *John bought **any** eggs yesterday.
 b. John didn’t buy **any** eggs yesterday.
 c. *John **ever** buys eggs.
 d. John doesn’t **ever** buy eggs.

NPIs vary in their licensing requirements, both within and across languages. For many so-called NPIs, true negation is not actually a requirement for them to be licensed; weaker semantic requirements, such as (Strawson) downward-entailment, anti-additivity, antimorphicity, or non-veridicality, are sufficient (Ladusaw 1979; van der Wouden 1997; Zwarts 1996, 1998; Giannakidou

1998; von Stechow 1999). The precise characterization of the semantic environment varies across lexical items. NPIs that require explicit negation are called strong NPIs.

Plural disjunctive agreement shares many similarities with NPIs in terms of its distribution and licensing conditions, in that many of the environments where plural-agreeing disjunction can appear are also licensing environments for (weak) NPIs. In fact, drawing on parallels between disjunction and NPIs in comparative constructions, Schwarzschild and Wilkinson (2002:4) suggest that there may be an NPI version of *or*. Other environments that permit both plural disjunctive agreement and NPIs include polar questions, antecedents of conditionals, restrictors of universal quantifiers, and superlatives, as shown in (128)–(131).

(128) *Polar question*

- a. Have you **ever** eaten rattlesnake?
- b. **Have** Mary or John eaten rattlesnake?

(129) *Antecedent of conditional*

- a. If you **ever** eat rattlesnake, let me know.
- b. If Mary or John **eat** rattlesnake, let me know.

(130) *Restrictor of universal quantifier*

- a. Every student who has **ever** taken that class has passed it.
- b. Every student who John or Mary (ever) **advise** writes a great dissertation.

(131) *Superlative*

- a. John is too smart to **ever** fall for that trick.
- b. John is too smart to believe that Mary or Sue actually **like** him.

A further similarity is that NPIs, like plural disjunctive agreement, are not acceptable in

alternative questions (Guerzoni and Sharvit 2014; Schwarz 2017):

(132) *Did John **ever** play chess or checkers?_{AltQ} (Guerzoni and Sharvit 2014:200)

(133) ***Do** John or Mary play chess?_{AltQ}

Despite these similarities, NPIs cannot appear in certain other environments where, in both English and Russian, plural-agreeing disjunction can take existential scope. These are quantificational environments, which include under attitude predicates, within the nuclear scope of universal quantifiers, and beneath modals, imperatives, and frequency adverbials. Compare the grammaticality of plural-agreeing disjunction in (134) with the ungrammaticality of *ever* in (135).

(134) a. *Attitude predicate*

✓Mary believes that Sue or Harry **are** coming.

b. *Nuclear scope of universal quantifier*

✓Every Tuesday, Ann or Bea **were** here.

c. *Modal*

Context: *The trash can is overflowing, so we need someone to take out the trash. John and Mary are the people on trash duty today, so it should be one of them who does it.*

✓John or Mary **need** to take out the trash.

d. *Imperative*

✓Tell Junior that Grandma or Grandpa **are** coming.

e. *Frequency adverbial*

✓Sometimes John or Mary **bring** donuts.

- (135) a. *Attitude predicate*
- *Mary believes that Sue is **ever** coming.
- b. *Nuclear scope of universal quantifier*
- *Every Tuesday, Ann was **ever** here.
- c. *Modal*
- *John needs to **ever** turn off the faucet.
- d. *Imperative*
- *Tell Junior that Grandma is **ever** coming.
- e. *Frequency adverbial*
- *Sometimes Mary **ever** brings donuts.

As a counterpoint to (135c)–(135d), Giannakidou (1998) shows that in Greek, modals and imperatives are licensors for NPIs. Still, differences persist in the distributions: To my knowledge, no NPI is licensed by an attitude predicate, the nuclear scope of a universal quantifier, or a frequency adverbial. Thus, the environments that license plural disjunctive agreement constitute a proper superset of the environments where NPIs are licensed.

An interesting similarity between NPIs and plural disjunctive agreement concerns their behavior in the presence of multiple licensors. Recall from Section 2.3 that certain environments, such as conditional antecedents, allow plural-agreeing disjunction to scope into positions where it would otherwise not be able to. For example, in (136a), where plural-agreeing disjunction is embedded under *hear* but not under *if*, disjunction cannot outscope the embedding verb. However, in (136b), where the embedding verb is itself embedded inside a conditional antecedent, plural-agreeing disjunction can outscope the embedding verb *hear*.

- (136) a. Marv heard that Suzy or Faye **were** expelled. * $\exists$ > hear
 b. If Marv hears that Suzy or Faye **were** expelled, he'll be livid. $\checkmark$ if > $\exists$ > hear

Barker (2018) suggests that NPIs function as scope disambiguators (see also Chierchia 2013:171). For example, whereas the plain indefinite *a friend of mine* in (137a) can take existential scope alternatively below and above the embedder *doubt*, the NPI *any friend of mine* in (137b) obligatorily takes narrow existential scope below *doubt*.

- (137) a. I doubt that John talked to **a friend** of mine. $\checkmark$ doubt > $\exists$, $\checkmark\exists$ > doubt
 b. I doubt that John talked to **any friend** of mine. $\checkmark$ doubt > $\exists$, * $\exists$ > doubt
(Chierchia 2013:171)

According to the idea that NPIs are scope disambiguators, the impossibility of a wide-scope indefinite reading in (137b) can be understood in terms of the requirement that *any*, as an NPI, must appear in a negative environment.² When *any friend of mine* takes narrow scope, the NPI is in the scope of the negative verb *doubt*, fulfilling the licensing condition. With a wide-scope reading, *any friend of mine* would take scope in a semantic position that is not negative, above *doubt*.

With NPIs, we observe a similar pattern to the one seen in (136): While the NPI indefinite cannot take scope above *doubt* in (137b), it can in (138) — where the presence of *if* provides an environment above *doubt* where *any* is independently licensed.

- (138) **Context:** *I'm hosting a party for John, so I want to make sure he is very comfortable. Therefore, I want to make sure he knows everyone who is there.*

If I doubt that/whether John knows **any guest** at the party, I'll fix that straight away. $\checkmark$ if > $\exists$ > doubt

²Or more precisely, an environment that is (Strawson) downward-entailing/nonveridical/anti-additive/etc. Whatever the correct semantic characterization, what is relevant for the present discussion is simply that embedded under *doubt* is one such suitable environment.

To bring out the intermediate scope reading that we are interested in, we can modify the consequent clause to contain a donkey pronoun, *them* in (139). Doing so forces the NPI indefinite to outscope *doubt*.

- (139) If I doubt that/whether John_i knows **any guest**_j at the party, I'll introduce him_i to them_j straight away.

A second example demonstrating the same idea is shown in (140). The first sentence in the pair, (140a), shows that without being embedded in a conditional, the NPI cannot outscope the comparative, which serves as its licenser. The second sentence, (140b), does have a reading where the NPI outscores the comparative. According to this intermediate scope reading, the condition specified by the antecedent clause is the following: There is some TA *x* such that the professor graded more papers than *x*.

- (140) a. The professor graded more papers than **any TA**. * $\exists > \text{Comp}$
 b. If the professor graded more papers than **any TA**, then the TAs would never hear the end of it.
 $\checkmark \text{if} > \exists > \text{Comp}$

(138) and (140b) also have readings where the NPI indefinite takes narrowest scope. Therefore, in (138) and (140), the NPI fails to disambiguate scope, contra Barker (2018).

Barker (2018:501–502) also discusses sentences involving multiple possible NPI licensors, but says that in these configurations, the NPI must take narrowest scope. He considers sentences such as (141).

- (141) a. No one claimed that Ann didn't do **anything** to help.
 b. It is not the case that Ann didn't see **anyone**.
 c. Ann doubts that no one said **anything**. (Barker 2018:501)

I do not have an explanation why narrowest scope is forced in (141) but not in (138), (139),

or (140b); the underlying reason may be the same as the cases discussed in Section 2.3 where intermediate scope readings are not available with plural-agreeing disjunction. However, (138), (139), and (140b) demonstrate that in at least some cases, a higher licenser allows an NPI to take scope higher than it otherwise could.

In terms of analytical approaches to NPIs, both syntactic (Klima 1964; Linebarger 1980, 1987; Progovac 1988, 1994; den Dikken 2002) and semantic analyses have been pursued. As has been pointed out by a number of authors (e.g., Giannakidou 2018), syntactic licensing approaches struggle in terms of explanatory adequacy. The issue is as follows: NPIs are licensed in a variety of different environments, which seem to share certain semantic characteristics. To account for these semantic similarities within a syntactic analysis, we must posit a $[+\alpha]$ feature on every licenser (or specify some other mechanism that achieves the same effect, see Progovac 1994), where α is the semantic property that unites the NPI-licensing environments, e.g., Strawson downward-entailment (von Stechow 1999). In effect, then, syntactic licensing analyses reduce to restating the semantic generalization via syntactic features.

In the remainder of this section, I discuss two prominent semantic analyses for the distribution of NPIs. This discussion will allow us to contextualize the two proposals for the distribution of plural disjunctive agreement that I consider most seriously in the next chapter — my novel proposal, as well as the proposal offered by Ivlieva (2013) — within the broader literature on indefinites and licensing. The two approaches to NPI licensing that I will discuss below are nonveridicality-based approaches and alternatives-based approaches.

Giannakidou (1998, 2011), following Zwarts (1995), argues that NPI licensing is based on nonveridicality, defined as in (142). With nonveridicality as the licensing condition, the distribution of NPIs is stated as in (143).

- (142) **Definition:** Let Op be a monadic propositional operator. Op is veridical just in case $Op\ p \rightarrow p$. Otherwise, Op is nonveridical. (Giannakidou 1998:106)

(143) *NPI licensing condition* (based on Giannakidou 1998:117)

An NPI α will be licensed in a sentence S iff S provides an expression γ which is nonveridical, and α is in the scope of γ .

The idea behind nonveridicality-based approaches to NPI licensing is that NPIs' restricted distribution owes to a semantic deficiency: Unlike other indefinites, NPIs cannot refer, and therefore, they cannot be used in contexts that would entail existence. Giannakidou situates her discussion in a dynamic framework where formally, an existential quantifier does two things: First, it introduces a variable, and second, it introduces a discourse referent and associates this discourse referent with the newly introduced variable (Giannakidou 1998:69–70). Giannakidou proposes that NPIs cannot perform this second function; thus NPIs cannot be used in veridical environments, where they would be required to introduce discourse referents. Accordingly, Giannakidou (2011) states the restriction on the distribution of NPIs as in (144):

(144) *NPIs as dependent existential quantifiers* (based on Giannakidou 1998:139–140, Giannakidou 2011:1695)

- a. An NPI α is a dependent existential quantifier.
- b. An existential quantifier $\exists x_d$ is dependent iff the variable x_d it contributes does not introduce a discourse referent in the main context.

Other formulations of the idea that NPIs are referentially deficient found in Giannakidou's work include that NPI disallow existential closure at the text-level (Giannakidou 1998:36); and that NPIs introduce variables that cannot be interpreted as free (Giannakidou 2011:1696–1697).

The statement in (144b) will look familiar after our discussion in Section 4.1. In fact, given the similarities that we have highlighted between environments that block discourse anaphora environments that license plural disjunctive agreement, (144) seems like exactly the behavior we wish to capture for plural disjunctive agreement.

I showed above that plural-agreeing disjunction and NPIs do not have the same distribution.

Therefore, (144) could not possibly be the correct explanation for both NPIs and plural-agreeing disjunction. I argue that based on the differences in distribution between NPIs and plural-agreeing disjunction, the condition in (144) is in fact better suited for plural-agreeing disjunctions than for NPIs.

Recall the environments where plural-agreeing disjunction and NPIs differ in whether they are licensed. These are the quantificational environments, shown in (134) and (135). Plural-agreeing disjunction is licensed by attitude predicates, the nuclear scope of universal quantifiers, modals, imperatives, and frequency adverbials. NPIs are not.³

The crucial test, then, is whether discourse anaphora is possible from such environments. As I showed in Section 4.1, it is not. The relevant examples are repeated in (145).

(145) a. *Attitude predicate*

Alf believes that a storm_i is coming. #It_i/#The storm_i has 100 mph winds.

b. *Universal quantifier (nuclear scope)*

Every chef cracked an egg_i. #It_i/#The egg_i was yellow.

c. *Modal*

Context: *A bank robbery hits a snag: The robber directs the first teller he sees to unlock the safe and hand over its. But the teller is unable to do so; she doesn't have the PIN. At this bank, managers have access to the safe, but no one else does. Therefore, in order for the robbery to continue...*

A manager needs to open the safe. #He_i/#She_i/#The manager_i has brown hair.

d. *Imperative*

Read a book_i! #It_i/#The book_i is long.

e. *Frequency adverbial*

³As we noted for (135), some NPIs are licensed in modals and imperatives.

Sometimes a letter_i arrives in the mail. #It_i/#The letter_i has four pages.

Cross-sentential anaphora is blocked in each of the (145)-sentences, so according to (144), we would expect these sentences to license NPIs. However, NPIs cannot be used in place of the indefinite in these same sentences.⁴ Thus, the unavailability of cross-sentential anaphora more closely matches the licensing environments for plural-agreeing disjunction than those for NPIs. I conclude that the statement in (144), though it succeeds to a great extent in explaining the distribution of NPIs, is even better suited for plural-agreeing disjunction. In Chapter 5, I show how this idea can be used to derive the distribution of plural-agreeing disjunction.

An alternative approach to NPI licensing, found in Kadmon and Landman (1993), Krifka (1995), Lahiri (1998), and Chierchia (2013)'s work, attributes the restricted distribution of NPIs to competition between alternatives. I discuss here the analysis argued for by Chierchia (2013), as this is most similar to the analysis that Ivlieva (2013) pursues for plural disjunctive agreement. According to Chierchia (2013), the reason that NPIs are restricted in where they can appear is that in certain environments, NPIs lead to contradictory meanings for a sentence, causing the sentence to be ungrammatical. NPIs are licensed just in the environments where they do not lead to contradictory meanings. The critical assumptions for Chierchia (2013) are 1) that NPIs activate obligatory subdomain alternatives; and 2) that these subdomain alternatives must be targeted by a grammatical exhaustivity operator akin to *only* which strengthens utterances by denying stronger alternatives (Groenendijk and Stokhof 1984; Krifka 1995; Fox 2007; Chierchia et al. 2012).

To illustrate the approach, let us work through two sentences with *any* – one grammatical, and one ungrammatical. We start with an ungrammatical example, (146a). The computation proceeds as follows. Before alternatives and exhaustification are considered, (146a) has a plain existential meaning, shown in (146b). Since *any* activates subdomain alternatives, all domains smaller than *D* are considered; so the alternative set is as shown in (146c). Each of the alternatives (aside from the sentence itself) in (146c) is stronger than (i.e., symmetrically entails) the un-strengthened meaning

⁴*Any* can be used in (145c) and (145d), but this is under a free choice reading.

(146b); thus exhaustification gives (146a) the strengthened meaning (146d). (146d) is contradictory, so (146a) is ungrammatical.

- (146) a. *I saw any professors at the conference.
- b. $\exists x \in D[\text{prof}(x) \wedge \text{saw}(\text{spkr}, x)]$ where $D = \text{all conference attendees}$
- c. $\{\exists x \in D'[\text{prof}(x) \wedge \text{saw}(\text{spkr}, x)] : D' \subseteq D\}$
 $= \{\text{I saw profs at the conference,}$
 $\text{I saw syntax profs at the conference, I saw semantics profs at the conference,}$
 $\text{I saw tall profs at the conference, I saw short profs at the conference, ...}\}$
- d. $\llbracket \text{I saw any professors at the conference} \rrbracket$
 $= \text{I saw a professor at the conference,}$
 $\text{and it's not the case that I saw a syntax prof the conference,}$
 $\text{and it's not the case that I saw a semantics prof at the conference,}$
 $\text{and it's not the case that I saw a tall prof at the conference,}$
 $\text{and it's not the case that I saw a short prof at the conference, and ...}$
 $= \perp$

On the other hand, in a sentence with negation, entailment relations are flipped. Thus, proceeding through the same steps as in (146) to compute a meaning for (147a), we arrive at the alternative set (147c). In this case, each proper subdomain alternative in (147c) is weaker than the pre-exhaustification meaning, (147b). Since exhaustification only denies stronger alternatives, exhaustification applied to (147b) with respect to the alternatives in (147c) is vacuous. Thus the strengthened meaning of (147a) is (147b), which is not contradictory; so (147a) is grammatical.

- (147) a. ✓I didn't see any professors at the conference.
- b. $\neg\exists x \in D[\text{prof}(x) \wedge \text{saw}(\text{spkr}, x)]$ where $D = \text{all conference attendees}$
- c. $\{\neg\exists x \in D'[\text{prof}(x) \wedge \text{saw}(\text{spkr}, x)] : D' \subseteq D\}$
 $= \{\text{I didn't see profs at the conference,}$
 $\text{I didn't see syntax profs at the conf., I didn't see semantics profs at the conf.,}$
 $\text{I didn't see tall profs at the conf., I didn't see short profs at the conf, ...}\}$
- d. $\llbracket \text{I didn't see any professors at the conference} \rrbracket$
 $= \neg\exists x \in D[\text{prof}(x) \wedge \text{saw}(\text{spkr}, x)]$ where $D = \text{all conference attendees}$
 $\neq \perp$

Ivlieva (2013) proposes an approach in this alternatives-and-exhaustification framework to derive the distribution of plural disjunctive agreement. I return to Ivlieva's proposal in Section 5.2.

We continue our discussion of semantically marked indefinites with free choice items.

4.2.2 Free choice items

We discussed in Section 2.2.6 the free choice effects that arise when disjunction occurs within the scope of a modal. Similar effects arise when certain indefinites, such as *any*-indefinites, appear under a modal (Kamp 1973). For example, (148) is understood to indicate that all beverages in the fridge are permitted options for Bob. Despite the fact that all beverages are permitted options, *any* is not quite universal; if Bob were to drink every beverage in the fridge, that would be seen as going beyond the permissions stated in (148) (see also Giannakidou 2001).

- (148) Bob may take **any beverage** from the fridge.

Indefinites such as *any* that, when embedded under a permission modal, lead to meanings that all individuals in the domain are allowable options are called free choice items. Other free choice

items include German *irgendein* (Kratzer and Shimoyama 2002), Spanish *cualquiera* (Menéndez-Benito 2005), and Italian *qualsiasi* (Zamparelli 2007).

Compare (148) with (149), which has a plain indefinite. Whereas (148) conveys that every drink in the fridge is a permitted option, (149) is not as extreme. That is, (150a), which specifies an item within the domain of beverages that is not a permitted option, is contradictory in a way that (150b) is not.

(149) Bob may take **a beverage** from the fridge.

(150) a. #Bob may take **any beverage** from the fridge, but he may not take my Pepsi.

b. Bob may take **a beverage** from the fridge, but he may not take my Pepsi.

Moreover, the plain indefinite permits a wide-scope reading in which the existential scopes over the universal, which can be brought out with the continuation *but I'm not sure which* (151b). Wide-scope existential readings are not available with *any* (151a).

(151) a. #Bob can drink any beverage from the fridge, but I'm not sure which.

b. Bob can drink a beverage from the fridge, but I'm not sure which.

The impossibility of a wide-scope reading with *any* demonstrates a more general fact about the distribution of free choice items: Free choice items must occur within the scope of a modal. The modal need not be overt; free choice items are possible in imperatives, which can be analyzed in terms of imperatives containing modal force (Giannakidou 2001; Aloni 2007). Since modal contexts are one of several licensing environments for plural disjunctive agreement, the licensing contexts for free choice items constitute a proper subset of the licensing contexts for plural disjunctive agreement.

4.2.3 Dependent indefinites

Dependent indefinites are indefinites whose value must covary with some other element in the sentence. An example is shown in (152), with the Romanian dependent indefinite *câte*. In order for (152) to be true, it must be the case that for every boy x , there is some poem y such that x recited y – and further, at least some of the boys must have read different poems.

(152) Fiecare băiat a recitat **câte** un poem.

every boy has recited CÂTE a poem

‘Every boy recited a poem.’

(Brasoveanu and Farkas 2011:9)

Dependent indefinites have also been reported in Kaqchikel, Hungarian, Telugu, Korean, and Russian (Choe 1987; Farkas 1997, 2002; Yanovich 2005; Balusu 2006; Henderson 2014).

Since the value of the dependent indefinite must covary with some other element in the sentence, sentences with dependent indefinites require that there be some other variable available for covariation. Thus, if no such licenser is present, a dependent indefinite is ungrammatical:

(153) ***Câte** un student a plecat.

CÂTE a student has left

‘A student has left.’

(Brasoveanu and Farkas 2011:10)

What counts as an acceptable licenser for a dependent indefinite differs across languages and lexical items. For example, *câte* is not licensed by modals in Romanian (154a), but the Russian dependent indefinite *nibud*’ is acceptable in such environments (154b).

(154) a. *Trebuie să plece **câte** un student.

must subj leave CÂTE a student

‘A student must leave.’

(Brasoveanu and Farkas 2011:10)

- b. A ej nado bylo poexat' **kuda-nibud'**, gde est' pečka.
and she need was to-go to-where-NIBUD' where there-is stove

'She needed to go somewhere where there was heating.'

(Pereltsvaig 2008:375)

Other possible licensors, depending on the language, include quantifiers over events (155) and predicative distributivity (156):

- (155) Olykor-olykor **egy-egy** ember felkiátott.

occasionally a-RED man cried.out

'Occasionally a man cried out.' (Hungarian, Brasoveanu and Farkas 2011:9)

- (156) A gyerekek hoztak **egy-egy** könyvet.

the children brought a-RED book.ACC

'The children brought a book each.' (Hungarian, Farkas 1997)

The patterns in (152), (154), (155) — where the dependent indefinites are licensed by universal quantification, modality, and adverbial quantification, respectively — recall the licensing environments for plural-agreeing disjunction (see Sections 2.2.5, 2.2.6, and 2.6).

The licensing environments for dependent indefinites and plural-agreeing disjunction do differ, though. Although predicative distributivity, as in (156), cannot be tested with plural-agreeing disjunctions since the disjunction that controls agreement and the plurality over which distributivity applies cannot simultaneously occupy the subject position, we observe that negation and downward-entailing environments differ in their status as potential licensors across the constructions. Whereas negation and downward-entailing environments are suitable licensors for plural disjunctive agreement, these environments do not license dependent indefinites. The ungrammaticality of dependent indefinites under negation is shown in (157a) for Romanian *câte* and (157b) for Russian *nibud'*. A further example from Russian with the downward-entailing

operator ‘without’ is shown in (157c).

(157) a. *Ana nu a adus **câte** o umbrelă.

Ana not have.3SG brought CÂTE an umbrella

‘Ana didn’t bring an umbrella.’ (Brasoveanu and Farkas 2011:10)

b. *Ona ne videla **kogo-nibud’** utrom.

she not saw who-NIBUD’ morning.INSTR

‘She didn’t see anyone in the morning.’ (Pereltsvaig 2000:334)

c. *Maša spravilas’ s zadačej bez **kakix-nibud’** trudnostej.

Masha coped with problem without which-NIBUD’ difficulties

‘Masha solved the problem without any difficulties.’ (Astafiev 2025:25)

The empirical picture for *nibud’* in Russian is more complex than I’ve shown in (157) (Astafiev 2025), but the point remains that dependent indefinites and plural-agreeing disjunction are subject to different licensing conditions.

4.2.4 Section summary

As discussed throughout Section 4.2, significant variation is found among the numerous words cross-linguistically that may be considered NPIs/FCIs/dependent indefinites. Typological work is ongoing in this direction (e.g., Haspelmath 1997; Alonso-Ovalle and Menéndez-Benito 2015; Dawson and Jenks 2023). I have argued in this section that despite being subject to a familiar sort of licensing conditions, plural-agreeing disjunction does not pattern neatly with any of these other kinds of indefinites.

Chapter 5

Formal account and alternative analyses

Let us take stock of what we have seen thus far in the dissertation. In Chapter 2, I argued that the overarching pattern to be captured by a successful analysis of disjunctive agreement is that plural-agreeing disjunction is restricted in the semantic environments where it can take existential scope. The restrictions on the distribution of plural disjunctive agreement can be stated as in (158):

(158) *Ivlieva's Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

In Chapter 3, I argued that the source of the different agreement forms seen with SG-SG disjunctive subjects can be localized to the disjunction itself; it is not the case, for example, that the different agreement forms result from different agreement operations targeting the same nominal in different ways. Rather, disjunction that controls singular agreement is structurally distinct from disjunction that controls plural agreement. Finally, in Chapter 4, we saw that the semantic characterization stated in (158) as a disjunction of three environments — i.e., plural disjunctive agreement is acceptable in polar questions, downward-entailing environments, or within the scope of quantifiers — comprise a natural class, in that all three licensing environments can be

observed to independently block indefinites from introducing discourse referents into the global context.

This chapter is structured as follows: In Section 5.1, I present an analysis of disjunctive agreement in terms of discourse referents, styled after Giannakidou (1998, 2011)’s analysis of NPI licensing. In Section 5.2, I discuss an alternative analysis — proposed by Ivlieva (2013) — for the pattern in (158). Ivlieva’s proposal follows the framework of alternatives-based analyses of NPI licensing (e.g., Chierchia 2013). My analysis alongside hers, therefore, can be contextualized within the existing literature as analogizing two competing analyses for NPIs to the less-studied — but evidently related — empirical domain of disjunctive agreement. I argue that the discourse referent-based proposal better captures the patterns that we see. In Sections 5.3 and 5.4, I discuss two other analyses — one syntactic, and one semantic — which ultimately fail to derive the observed empirical patterns for disjunctive agreement.

5.1 Proposal in terms of discourse referents

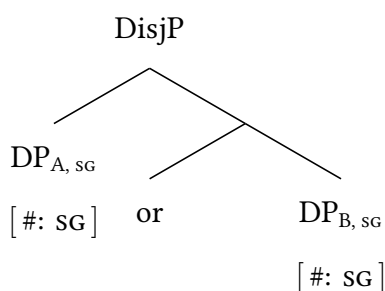
I argued in Section 4.1 that whether or not a given disjunction can control plural agreement correlates with whether or not that disjunction takes scope in an environment where an indefinite would introduce a discourse referent into the global context. Disjunction that controls singular agreement, on the other hand, is not restricted to these environments — matching the behavior of disjunctions that do not control agreement. Further, I argued that disjunction that controls plural agreement differs structurally from disjunction that controls singular agreement.

I propose uniting these observations as follows: A disjunction that controls plural agreement has additional structure beyond what is present in a disjunction that controls singular agreement. This additional structure is the source both of the plural verbal agreement morphology and of the distributional restrictions that correlate with semantic environment.

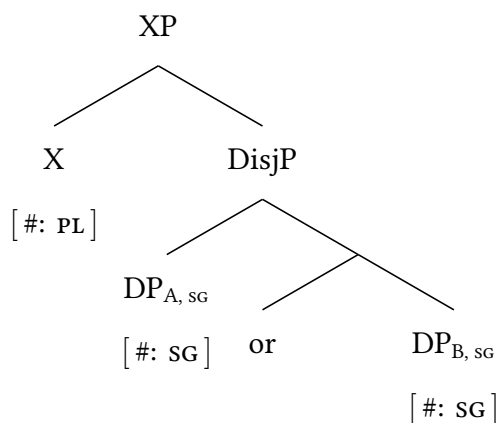
Concretely, let us represent this additional structure present within a plural-agreeing disjunc-

tion via an optional head X, which, in disjunctive subjects that control plural agreement, combines with the disjunction phrase. That is, a disjunction DP_A or DP_B that controls singular agreement has the structure in (159), and a disjunction DP_A or DP_B that controls plural agreement has the structure in (160). Non-agreeing disjunction, which distributes like singular-agreeing disjunction, also has the structure in (159). The head X has a plural number feature, along with semantic effects which I will discuss in Sections 5.1.2–5.1.4.

(159) Singular-agreeing and non-agreeing disjunction:



(160) Plural-agreeing disjunction:



5.1.1 Verbal agreement

I will discuss the semantic contribution of X beginning in Section 5.1.2. First, though, I argue that the structures in (159) and (160) yield the observed agreement facts. Let us assume that verbal number agreement spells out the number feature copied from a DP to T via Agree-Copy (Arregi

and Nevins 2012; Marušič et al. 2015; Smith 2021), where agreement targets the structurally highest number feature in the probe’s c-command domain. Following Himmelreich and Hartmann (2023), let us assume that within a disjunction, the two disjuncts DP_A and DP_B are equidistant for the purposes of Agree (see also Lyskawa 2021). Therefore, for the structure in (159), where X is not present, the number probe on T copies features from both disjuncts via Multiple Agree (Hiraiwa 2001). Since the number features are singular for both disjuncts of (159), the verbal agreement can be spelled out as singular.

Let us consider now the structure (160), where X merges with the DisjP. In (160), the structurally highest number feature is the plural feature on X. When T probes and finds the structure in (160), therefore, a plural number feature is copied to T. Thus, a sentence where the subject has the structure in (160) will display plural verbal agreement. We return to disjunctions of non-singular nominals in Section 5.1.8; for now, though, the important takeaway is that (159) controls singular verbal agreement and (160) controls plural verbal agreement, as a consequence of locality.

5.1.2 Discourse anaphora and semantic restrictions on distribution

In terms of anaphoric accessibility, our goal is to state for plural-agreeing disjunction a condition like that which Giannakidou (1998, 2011) proposes for NPIs. Giannakidou’s condition is repeated in (161):

(161) *NPIs as dependent existential quantifiers* (based on Giannakidou 1998:139–140, Giannakidou 2011:1695)

- a. An NPI α is a dependent existential quantifier.
- b. An existential quantifier $\exists x_d$ is dependent iff the variable x_d it contributes does not introduce a discourse referent in the main context.

The condition that certain variables be anaphorically inaccessible can be formalized in a number of ways. For concreteness, I present an analysis in the framework of Discourse Representation

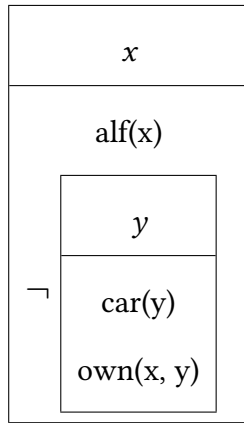
Theory (DRT) (Kamp 1981; Kamp and Reyle 1993). Other recent accounts of anaphoric inaccessibility include Hofmann (2025)’s flat-update proposal using intensional discourse referents and Chatain (2025)’s static theory in which accessibility depends on existence presuppositions being satisfied. Astafiev (2025) derives an anaphoric inaccessibility condition for Russian *nibud*’ indefinites using postsupposition (Brasoveanu 2012).

According to DRT, the meanings of natural-language expressions are represented as structured abstract forms called Discourse Representation Structures (DRSs). DRSs each have associated variables which represent discourse referents; discourse referents are introduced by all nominal expressions, and track individuals across utterances. Since DRSs can be embedded within one another, anaphoric (in)accessibility is derived as follows: A variable introduced into a subordinating DRS is accessible in each subordinate DRS, but not vice versa; a variable introduced into a subordinate DRS cannot be accessed from any DRS that subordinates it. Whereas proper names always introduce their associated discourse referent into the highest DRS, where an indefinite introduces its discourse referent may vary. In particular, an indefinite can introduce its associated variable into the DRS K corresponding with its immediate syntactic context, or into any DRS K' to which K is subordinate. The level into which the indefinite introduces its variable determines the meaning of a given sentence, as well as what anaphoric links are possible to that variable.

To illustrate: As discussed in Section 4.1, negation blocks discourse anaphora to indefinites introduced within its logical scope. A DRS for (162a), under the narrow-scope reading for the indefinite, is shown in (162b). Notice that in (162b), the variable y introduced by *a car* is in the subordinate DRS corresponding with negation. Accordingly, y is inaccessible from the highest DRS in (163b), which is why anaphora — which requires relating y to the variable z introduced by the pronoun — is impossible in (163a).

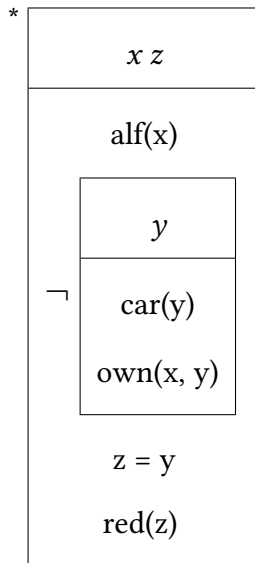
(162) a. Alf doesn’t own a car.

b.



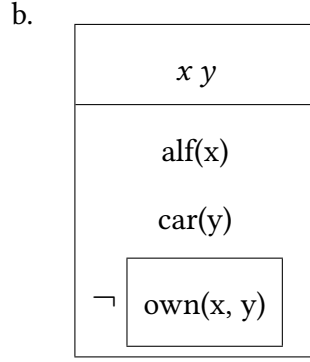
(163) a. Alf doesn't own [a car]. [#]It_i is red.

b.

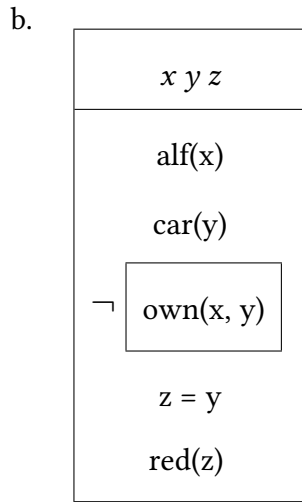


On the other hand, under a wide-scope indefinite reading, the indefinite introduces its variable into the main DRS, as shown in (164b). Since the variable y belongs to the main DRS in (165b), it is accessible as a discourse referent to serve as an anaphoric antecedent to the pronoun *it* in (165a).

(164) a. Alf doesn't own a certain car.



(165) a. Alf doesn't own [a certain car]_i. ✓It_i is red.



When translating a DRS to a logical form, existential quantification is applied at each sub-DRS to bind the variables that are introduced into that DRS. Therefore, (162a) translates to the formula $\exists x[\text{alf}(x) \wedge \neg \exists y[\text{car}(y) \wedge \text{own}(x, y)]]$, while (164a) is assigned the formula $\exists x \exists y[\text{alf}(x) \wedge \text{car}(y) \wedge \neg[\text{own}(x, y)]]$ – thus demonstrating the connection between the existential scope of an indefinite and the DRT representations of various readings. The fact that the DRS in (165b) is produced from two sentences instead of one is not significant for the purposes of DRT; the LF for (165b) combines all the conditions into a single formula $\exists x \exists y \exists z[\text{alf}(x) \wedge \text{car}(y) \wedge \neg[\text{own}(x, y)] \wedge z = y \wedge \text{red}(z)]$.¹

We now turn our attention to disjunction. Following Rooth and Partee (1982), let us assume

¹Some care must be taken to ensure that the conditions of a DRS are interpreted in the order specified. For instance, (166) does not have the same truth-conditions as (165a). See Kamp and Reyle (1993:127–129) for further discussion.

(166) *It_i is red. Alf doesn't own [a certain car]_i.

that disjunction introduces a variable, along with a condition restricting that variable so that it ranges over the disjuncts (see also Eggert 2002). For example, *John or Mary* – assuming the structure in (159) that does not have X – has the DRS in (167). Within the sentence (168a), the disjunction *John or Mary* leads to the DRS shown in (168b).

(167)

$x\ y\ z$
john(x)
mary(y)
$z \in \{x, y\}$

(168) a. Sal saw John or Mary.

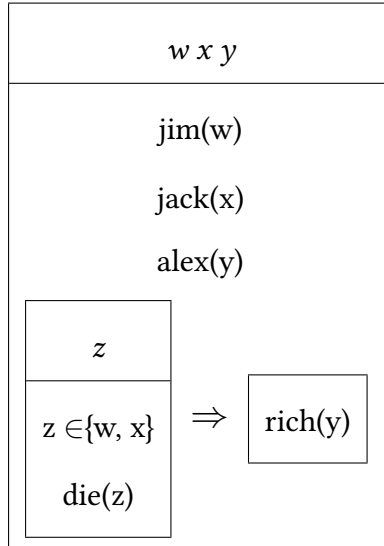
b.

$w\ x\ y\ z$
sal(w)
john(x)
mary(y)
$z \in \{x, y\}$
saw(w, z)

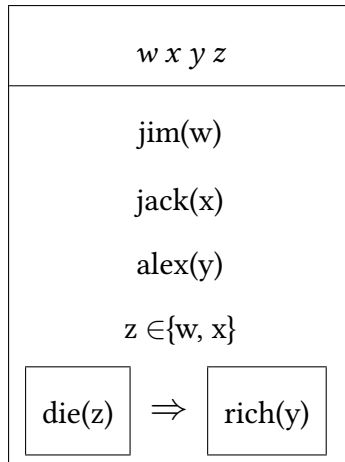
Rooth and Partee (1982) propose that, like with indefinites, the different possible scope readings of a disjunction correlate with which DRS the disjunction introduces its associated variable into. Consider, for example, the disjunctive sentence in (169a), where disjunction is in the object position (to avoid consideration of agreement, for now). This sentence is ambiguous between a narrow-scope disjunction reading – i.e., either person’s death would cause Alex to become rich – and a wide-scope disjunction reading – i.e., there is a particular relative whose death will cause Alex to become rich – relative to the conditional (see Section 2.2.3). The narrow- and wide-scope readings correspond with the DRSs in (169b) and (169c), respectively.

(169) a. If tragedy strikes Uncle Jim or Grandpa Jack, Alex will be rich.

b.



c.



In (169c), the variable z that ranges over the disjuncts is introduced into the main DRS. Accordingly, we expect that under a wide-scope reading of the indefinite, discourse anaphora to the disjunctive object will be possible. This prediction is validated by the fact that (170) is acceptable under a wide-scope reading of the disjunction in the first sentence.

(170) If tragedy strikes [Uncle Jim or Grandpa Jack]_i, Alex will be rich. ✓He_i told her so at yesterday's barbecue.

Under our proposed structure for singular-agreeing disjunction in (159), the disjunction in (171), which controls singular agreement, has exactly the same syntactic structure as the disjunction in

(169), which does not control agreement. Therefore, like in (169), the disjunction can introduce its associated variable either into the DRS specific to the conditional — giving a narrow-scope disjunction reading — or into the main DRS — giving a wide-scope disjunction reading. In fact, abstracting away from lexical-semantic differences between *tragedy befalls z* and *z dies*, the two possible DRSs for (171) are the same as those shown in (169b) and (169c).

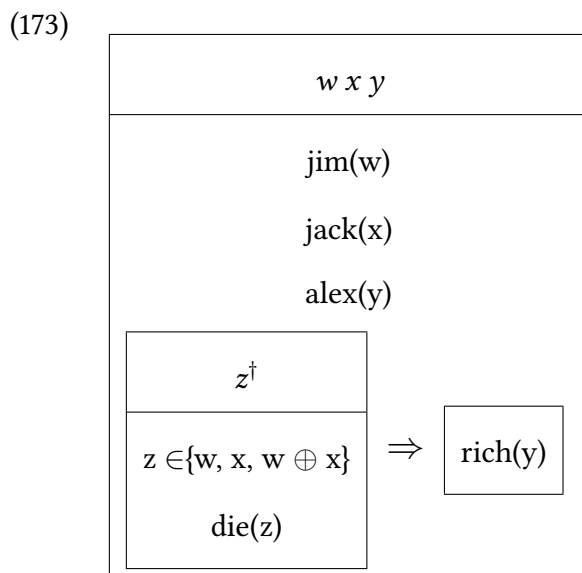
(171) If Uncle Jim or Grandpa Jack **dies**, Alex will be rich.

Let us now consider the plural-agreement analog to (171), namely (172). We wish to explain why, for (172), the DRS (169c) is not possible. That is, why (172) has no reading where disjunction scopes over negation.

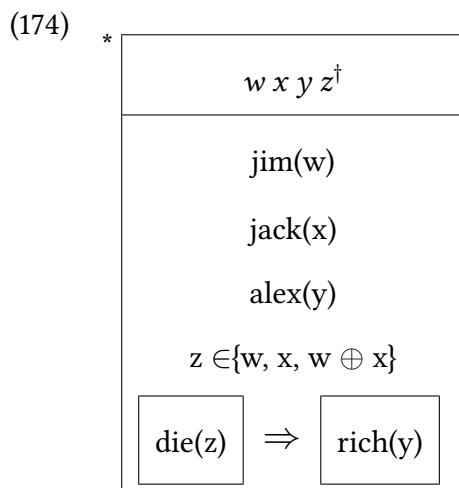
(172) If Uncle Jim or Grandpa Jack **die**, Alex will be rich.

To derive the behavior of plural-agreeing disjunction, I propose that we endow the head X shown in (160) with two semantic properties. First, taking inspiration from Giannakidou’s proposal (see (161b)), X imposes a requirement on the variable introduced by DisjP that this variable cannot be introduced into the main/highest DRS. Notationally, we denote this requirement via a superscript dagger symbol ($\dagger$) on the variable, e.g., $x^\dagger$. Second, X induces closure over sum formation (Link 1983), applied to the set that the disjunctive variable ranges over. This second assumption is needed for number resolution in anaphora, which we discuss in Section 5.1.4.

Let us see what these assumptions do for us. First, we consider the narrow-scope disjunction reading of (172). This reading is represented by a DRS where disjunction introduces its variable into the subordinate DRS associated with the conditional. Since the disjunctive subject in (172) controls plural agreement, X must be present; thus the variable introduced by disjunction receives the dagger annotation. Moreover, the condition associating the disjunctive variable with the individual disjuncts is closed over sum formation; $z \in \{w, x\}$ from (169b) becomes $z \in \{w, x, w \oplus x\}$. The resulting DRS for (172) is shown in (173). Since the dagger-marked variable $z^\dagger$ is in the subordinate DRS, (173) is well-formed. Thus, (172) is acceptable under a narrow-scope reading of the disjunction.



On the other hand, a wide-scope disjunction reading of (172) has the DRS in (174). In (174), $z^\dagger$ is introduced into the main DRS. By assumption, a dagger-marked variable cannot belong to the main DRS; thus, (174) is ill-formed, deriving the impossibility of a wide-scope disjunction reading for (172).

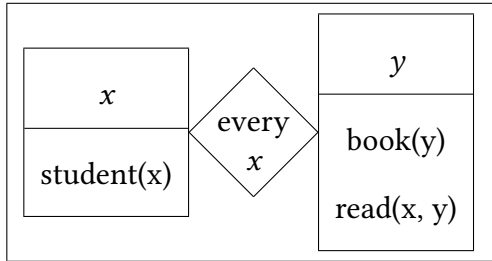


The demonstration we have given for disjunctive scope with respect to conditionals generalizes to the other semantic environments where singular disjunctive agreement and plural disjunctive agreement diverge with respect to distribution. Take, for example, the nuclear scope of universal quantifiers. According to Kamp and Reyle (1993:312)'s treatment of quantifiers, the sentence (175) has two possible DRSs. The DRS for the narrow-scope indefinite reading is shown in (175b), while

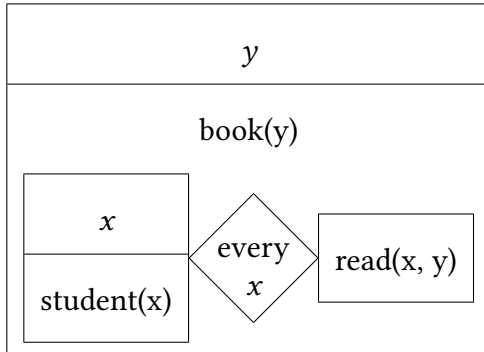
the DRS for the wide-scope indefinite reading is shown in (175c). Mirroring what we saw with conditionals, the narrow-scope and wide-scope readings are distinguished by whether the variable introduced by disjunction is introduced into the main DRS or a subordinate one.

(175) a. Every student read a book.

b.



c.



Translating the DRSs in (175) into logical formulas, (175b) yields $\forall x[\text{student}(x) \rightarrow \exists y[\text{book}(y) \wedge \text{read}(x, y)]]$, while (175c) yields $\exists y[\text{book}(y) \wedge \forall x[\text{student}(x) \rightarrow \text{read}(x, y)]]$. Again, we see how different readings with respect to operator scope are represented via differences in DRSs. Notice that the variable y in (175b) is introduced into the subordinate DRS and not accessible from the main DRS. As expected, then, discourse anaphora to the variable introduced by *a book* is not possible for the narrow-scope reading; this is shown in (176a). On the other hand, y is introduced into the main DRS in (175c), and is therefore expected to be accessible for discourse anaphora. The acceptability of (176b) validates this prediction.

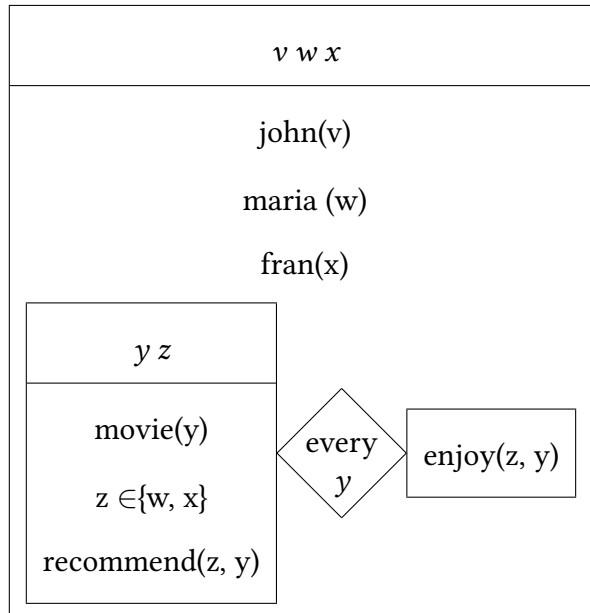
- (176) a. Every student read [a book]_i. [#]It_i was *The Name of the Wind*. (intended: $\forall > \exists$)
 b. Every student read [a book]_i. [✓]It_i was *The Name of the Wind*. ($\exists > \forall$)

Having established the DRT machinery for representing universal quantification, the desired results for disjunctive agreement follow immediately. We wish to derive the asymmetry that – as shown in (177) – plural-agreeing disjunction cannot take scope out of either the restrictor or the nuclear scope of a universal quantifier, whereas singular-agreeing disjunction can (see Sections 2.2.3 and 2.2.5).

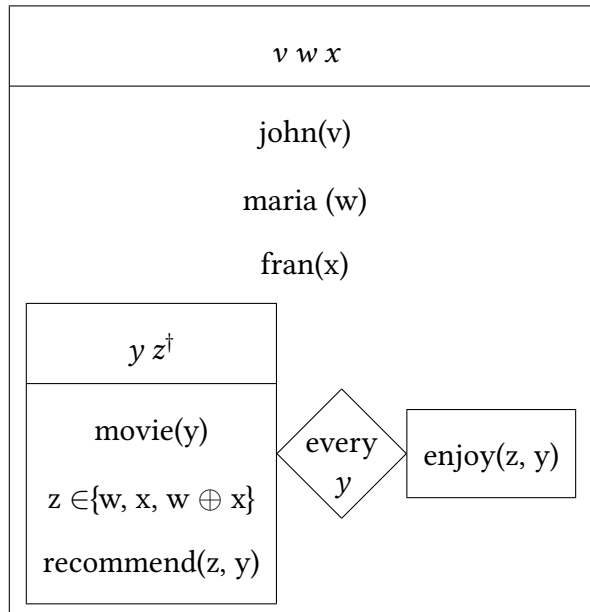
- (177) a. John has enjoyed every movie that Maria or Fran **has** recommended. $\checkmark \forall > \exists, \checkmark \exists > \forall$
 b. John has enjoyed every movie that Maria or Fran **have** recommended. $\checkmark \forall > \exists, * \exists > \forall$
 c. Every Tuesday, Ann or Bea **was** here. $\checkmark \forall > \exists, \checkmark \exists > \forall$
 d. Every Tuesday, Ann or Bea **were** here. $\checkmark \forall > \exists, * \exists > \forall$

DRSs for the narrow-scope disjunction readings for (177a) and (177b) are shown in (178a) and (178b), respectively. Importantly, the variable $z^\dagger$ in (178b) is not accessible in the main context, as it is introduced in the left-hand subordinate DRS that represents the restrictor of the quantifier. Thus, we correctly predict that the sentence with plural disjunctive agreement, (177b), is true under a narrow-scope reading.

(178) a.

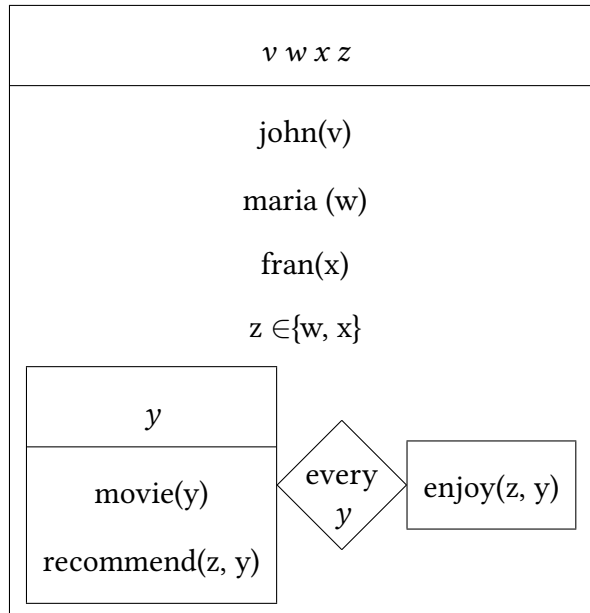


b.

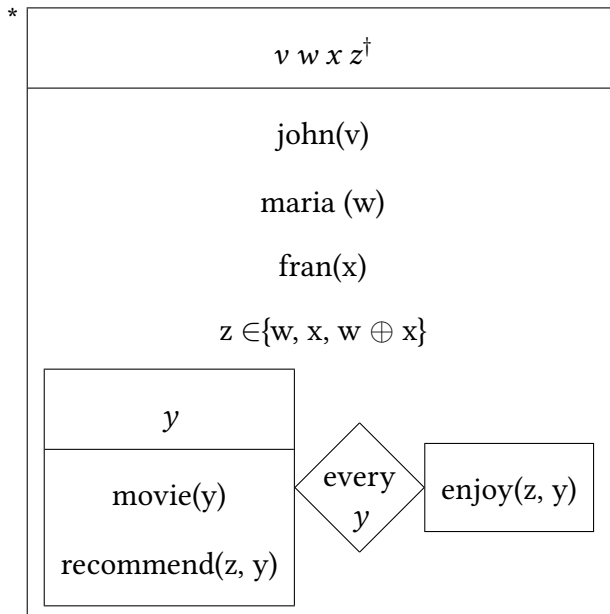


Consider now the readings for (177a) and (177b) where disjunction takes wide scope over the quantifier. The corresponding DRSs are shown in (179a) and (179b), respectively. (179a), in which the variable z introduced by disjunction belongs to the highest DRS, is unproblematic; for singular-agreeing disjunction, there are no restrictions on where the disjunctive variable can be introduced. On the other hand, (179b) has $z^\dagger$ introduced into the main DRS, which our approach correctly predicts to be ungrammatical.

(179) a.



b.



The contrast between possible readings when singular-agreeing vs. plural-agreeing disjunction appears in the nuclear scope of *every*, as in (177c) and (177d), is derived analogously. The only difference is that the variable introduced by disjunction is introduced into either the main DRS (under a wide-scope reading of disjunction), or the right-hand subordinate DRS of the quantifier (under a narrow-scope reading of disjunction).

The framework is quite flexible and generalizes quite easily across constructions. Anywhere

that a DRT analysis predicts anaphoric accessibility in the main DRS, our analysis predicts that the plural disjunctive agreement will be unavailable, by virtue of X imposing the condition that the variable introduced by disjunction not take highest scope. Concretely, any DRT analysis that derives the impossibility of discourse reference to the indefinites in sentences such as (120), also derives, under my proposal, the acceptability of plural-agreeing disjunction taking scope into that same position.

For example, we saw in Section 4.1 that discourse anaphora is blocked for an indefinite occurring in the *than*-clause of a comparative, as seen in (120e).

(120e) Alf moves slower than a/any snail_i. #It_i/#The snail_i is slimy.

I am not aware of any existing DRT analysis of comparatives. Presumably, though, a DRT analysis of the impossibility of discourse anaphora in (120e) would analyze the variable introduced by *a/any snail* in the first sentence as being introduced into a subordinate DRS that is not accessible within the second sentence. Such an analysis would immediately derive the acceptability of plural-agreeing disjunction in sentences such as (180).

(180) ✓ Alf moves slower than Sue or Ellen **do**.

More generally, the approach pursued here predicts that plural disjunctive agreement will be acceptable in any sentence where the disjunction takes existential scope in some subordinating environment.²

A full treatment of questions within DRT is beyond the scope of this work. However, for deriving the ungrammaticality of plural-agreeing disjunction in alternative questions, I appeal to presupposition, which has been developed within DRT by van der Sandt (1992) and Kamp (2001), among others (see Guerts et al. 2024 for further references). van der Sandt and Kamp's

²This prediction seems correct, for the most part. One domain where discourse anaphora and plural-agreeing disjunction diverge in behavior is under double negation. Discourse anaphora to an indefinite occurring beneath two negations is possible (Karttunen 1976; Krahmer and Muskens 1995), but — contrary to the generalization argued for in Section 4.1 — plural-agreeing disjunction can take existential scope in these positions. Despite this divergence, I believe that the formal statement given in the present section of X's semantic properties derives the correct empirical facts for plural-agreeing disjunction in doubly-negated environments. We return to this issue in Section 7.2.

treatment of presupposition divides context-updates into two steps: a ‘computation’ stage, and a ‘justification’ stage. Within the computation stage, a preliminary representation of the sentence to be processed is constructed, containing all presuppositions of the sentence to be processed. In the justification stage, the presuppositions are checked against the existing context; then the context is updated with the asserted content, along with any presuppositions that must be accommodated. To illustrate, consider the two-sentence utterance in (181).

(181) Walter has a rabbit. It is white. (Kamp 2001)

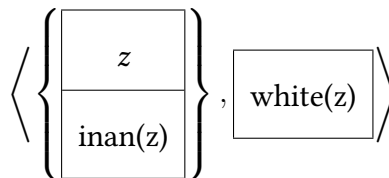
The first sentence in (181) has the DRS in (182a). The second sentence must be processed in two steps, due to the inanimacy presupposition of *it*. To process the second sentence, first the preliminary representation (182b) is constructed, where the presupposition for *it* is represented by the condition *inan(z)*. Note that the variable *z* introduced into the DRS representing the presupposition of (182b) is accessible from the DRS representing the asserted content of (182b).

In the justification stage of processing the second sentence of (181), the presupposition of (182b) is checked against the existing context (182a). The presupposition on *z* can be satisfied by identifying *z* with *y* from the original context since rabbits are inanimate; the representation (182b) is then merged into the DRS (182a), together with the ‘resolution link’ $z = y$, producing the final DRS shown in (182c).

(182) a.

$x \ y$
walter(x)
rabbit(y)
poss(x, y)

b.



c.

$x \ y \ z$
walter(x)
rabbit(y)
poss(x, y)
$z = y$
white(z)

If the first sentence provides no suitable antecedent for *it*, then no resolution link can be formed in the justification stage. In this case, the presupposition must be accommodated as part of the context update. This is shown in (183).

(183) a. Walter is sleeping. It is white.

b. DRS for *Walter is sleeping*:

x
walter(x)
sleeping(x)

c. Preliminary DRS for *It is white*:

$\left\langle \left\{ \begin{array}{ c } \hline z \\ \hline \text{inan}(z) \\ \hline \end{array} \right\}, \begin{array}{ c } \hline \text{white}(z) \\ \hline \end{array} \right\rangle$

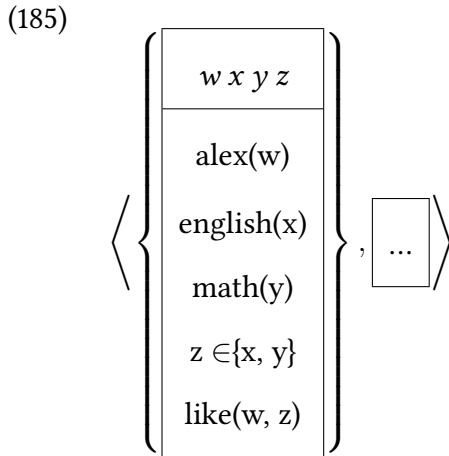
d. Final DRS:

$x \ z$
walter(x)
inan(z)
white(z)

The justification stage for alternative questions will require a fuller theory of questions within DRT; this is not a barrier for us, however, because it is at the computation stage where the issue with plural-agreeing disjunction arises. Alternative questions are commonly assumed to presuppose that (exactly) one of the disjuncts is true (Higginbotham 1991; Rawlins 2008; Biezma and Rawlins 2012). That is, the alternative question (184a) presupposes (184b).³

- (184) a. Does Alex like English or math?_{AltQ}
b. Alex likes English or math.

Therefore, the alternative question in (184a) has the preliminary representation in (185):



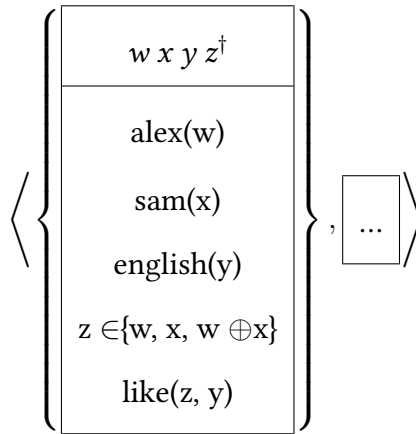
Suppose, now, that an alternative question has a disjunctive subject that controls plural agreement, as in (186a). Since the disjunction controls plural agreement, the subject of (186a)

³Beyond (184b), there is a further presupposition that the addressee does not want both. I assume that this exclusivity presupposition coexists with the existence presupposition, such that the problem caused by the existence presupposition is not resolved by exclusivity; we can think of the overall presuppositions of the sentence as the intersection of its two presuppositions.

must include the head X. Therefore, (186a) has the preliminary representation in (186b). The DRS representing the presupposition in (186b) is ill-formed because it includes $z^\dagger$ as a variable introduced at the highest level; this ill-formedness continues to hold after the justification stage completes, since the resulting context accommodates all presuppositions not already supported by the context.

(186) a. ***Do** Alex or Sam like English?_{AltQ}

b.



Thus, even setting aside the non-presuppositional content of questions, the approach I have laid out correctly predicts the ungrammaticality of (186).

An alternative approach for the impossibility of plural agreement in (sg-sg) alternative questions is to appeal to homophony. The idea here — motivated by the fact that many languages use different disjunction words to form polar vs. alternative questions (Alonso-Ovalle 2006; Biezma and Rawlins 2015; see also discussion in Section 5.4) — is that the *or* in an alternative questions is a distinct lexical item from the *or* in polar questions and declarative sentences. Suppose that X can only combine with the latter *or* due to either semantic or syntactic restrictions; then it is impossible for disjunctive subjects to control plural agreement in alternative questions. Support for this approach comes from Egyptian Arabic, which uses a different disjunction word (*walla*) in alternative questions than in polar questions (*aw*), and also allows only singular agreement in alternative questions but both singular and plural agreement in polar questions (Winans 2016).

My proposed analysis also derives the expected acceptability of intermediate scope readings for plural-agreeing disjunction, i.e., the pattern that disjunction can scope above one licenser provided it falls within the scope of another. We argued for this empirical pattern in Section 2.3 on the basis of sentences like (187).

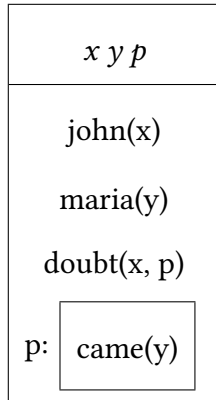
(187) a. John doubts that Maria or Suzy **are** coming. * $\exists >$ doubt

b. If John doubts that Maria or Suzy **are** coming, he will be anxious. ✓if $> \exists >$ doubt

Let us assume for the attitude predicate *doubt* the rudimentary DRS shown in (188) (see Kamp (1990) and Maier (2016) for a more comprehensive treatment of attitude predicates within DRT).

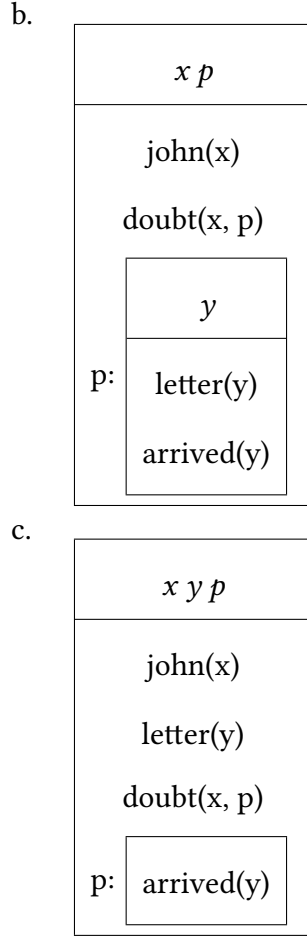
(188) a. John doubts that Maria came.

b.



For the present purposes, it suffices that a sentence where an indefinite is introduced within the complement of *doubt* has two possible readings: a narrow-scope reading where the indefinite introduces its associated variable into the subordinate DRS representing the proposition that is doubted, as in (189b); and a wide-scope reading where the indefinite introduces its variable into the main DRS, as in (189c).

(189) a. John doubts that a letter arrived.



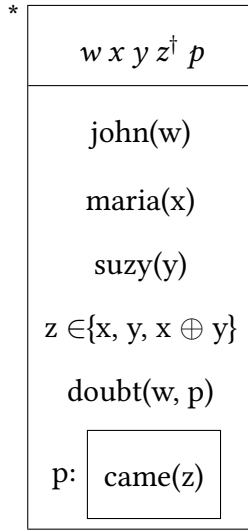
Consistent with the DRSs in (189), discourse anaphora to the variable introduced by the indefinite is acceptable only under the wide-scope indefinite reading, as shown in (190).

(190) John doubts that [a letter]_i arrived. Mary mailed it_i last week.

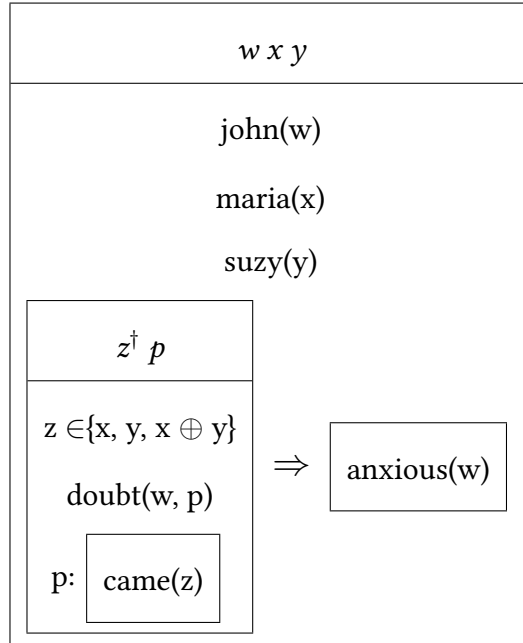
*doubt > $\exists$, $\checkmark \exists$ > doubt

Our semantics for *doubt* successfully derive the lack of wide-scope disjunction reading for (187a). Such a reading would be represented by the DRS in (191a), which is ruled out because it has $z^\dagger$ as a variable belonging to the main DRS. On the other hand, the DRS (191b) for the reading where disjunction scopes over *doubt* in (187b) is well-formed because the variable $z^\dagger$ introduced by disjunction is introduced into the subordinate DRS corresponding with the conditional.

(191) a.



b.



5.1.3 Semantic plurality

The semantics that our proposal assigns to plural-agreeing disjunction account for why plural-agreeing disjunction does not behave like conjunction or other plurals in terms of the semantic diagnostics of plurality discussed in Section 3.2. These diagnostics — collectivity, cumulativity, reciprocals, and *respectively* — all require that the nominal in question be the Linkian sum of its

atomic sub-parts. Conjunctions and plurals meet this criterion, while plural-agreeing disjunctions (like other disjunctions) do not. For example, the plurality *John and Mary* has the denotation $\llbracket \text{John and Mary} \rrbracket = j \oplus m$, while the plurality *the boys* – assuming that the relevant boys are a , b , and c – is represented as $\llbracket \text{the boys} \rrbracket = a \oplus b \oplus c$ (Link 1983; Nouwen 2016; Schmitt 2019). On the other hand, plural-agreeing disjunction does not have the same kind of part-whole structure. Rather than denoting an individual with internal structure, the variable introduced by a plural-agreeing disjunction denotes an individual with possible values that range over atomic and non-atomic entities. This is what is represented by the condition $z \in \{w, x, w \oplus x\}$ in (173). That is, plural-agreeing disjunction is syntactically plural, but not semantically plural in the way that collectivity, cumulativity, reciprocals, and *respectively* require.

For instance, the collective predicate *meet* selects a non-atomic subject (Link 1983; Winter 2001; Schmitt 2013, 2019). Thus, the DRS condition $\text{meet}(z)$ is well-formed under the condition $z = j \oplus m$ which results from the sentence with a conjunctive subject (192a). But the condition $\text{meet}(z)$ is ungrammatical with the condition $z \in \{j, m\}$ which is yielded by the disjunctive sentence (192b); similarly for $z \in \{j, m, j \oplus m\}$ from (192c).

- (192) a. John and Mary have met.
 b. *John or Mary has met.
 c. *John or Mary have met.

5.1.4 Pronouns and anaphora

We now discuss the number on pronouns that are anaphoric to disjunctions. Recall that although plural-agreeing disjunction is prohibited from introducing globally accessible discourse referents, it can introduce discourse referents into subordinate DRSs, and these subordinated discourse referents can antecede pronouns.

We argued in Section 3.1.2 that the number on donkey pronouns that are anaphoric to dis-

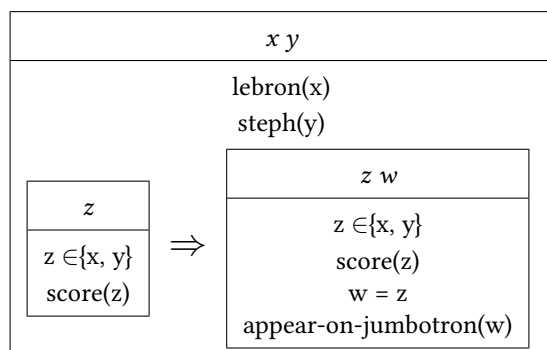
junctions depends both on the agreement that disjunction controls, and on the animacy of the disjuncts. The relevant paradigm is shown in (194). In terms of DRT, (194a) is assigned the DRS in (195a), and (194b) is assigned the DRS in (195b) (Kamp and Reyle 1993:168). Of particular interest here is the condition $w = z$ in both (195a) and (195b); this is the DRS condition that links the pronoun in the consequent clause to the variable introduced by disjunction in the antecedent clause.⁴

- (194) a. Whenever [LeBron or Steph]₁ **scores**, ✓he_i appears/*they_i appear on the jumbotron. (intended: the person who scores appears)
- b. Whenever [LeBron or Steph]₁ **score**, ✓they_i appear/*he_i appears on the jumbotron. (intended: the person who scores appears)
- c. If [the AC or the water heater]_i **breaks**, repair ✓it_i/*them_i. (intended: repair the machine that broke)
- d. If [the AC or the water heater]_i **break**, repair *them_i/*it_i. (intended: repair the machine that broke)

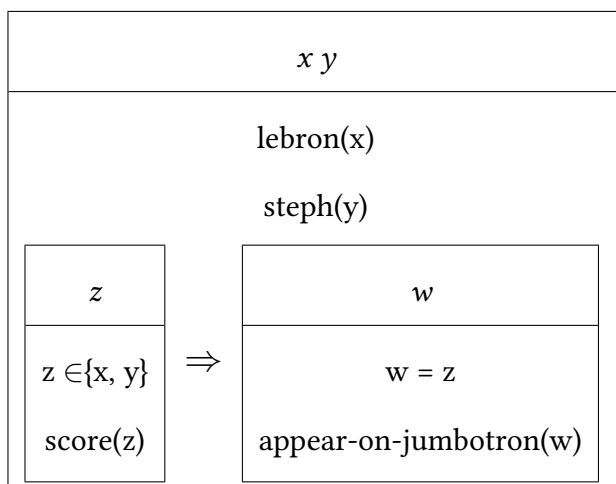
⁴In (195), I abstract away the contribution of the definite, as this is not important for the present discussion.

Note that variables introduced in the antecedent of a conditional are accessible in the consequent of the conditional, since a conditional consequent represents an extension of the hypothetical situation described by its antecedent. Kamp and Reyle (1993) also consider DRSs such as (193) as an alternative to (195a), though they ultimately adopt the notation in (195a) because it better conveys that the antecedent is interpreted only once. On the other hand, (193) makes transparent that the consequent is interpreted relative to the hypothetical situation described by the antecedent.

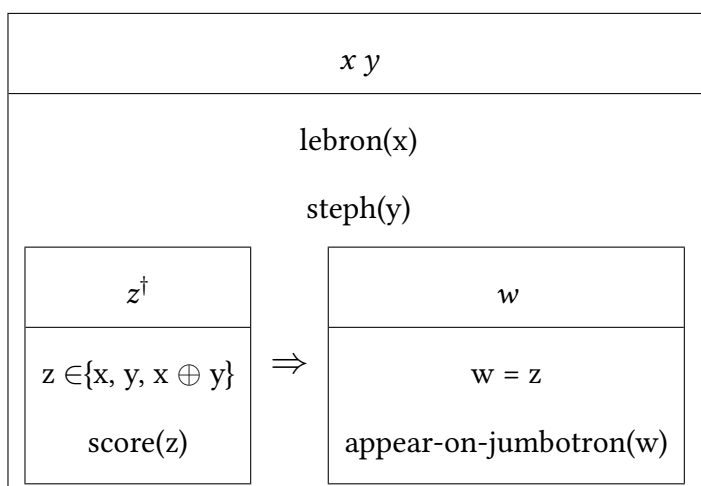
(193)



(195) a.



b.



I highlight three parts of the paradigm here. First, with singular-agreeing disjunction, singular donkey pronouns are possible — required, in fact, for disjunctions of inanimates such as (194c). Second, with plural-agreeing disjunctions of animate subjects, only plural pronouns have donkey readings. Finally, with plural-agreeing disjunctions of inanimate subjects, both singular and plural donkey pronouns are ungrammatical.

I argue that the observed behavior is consistent with the denotations we have given for singular-agreeing and plural-agreeing disjunctions. In particular, singular-agreeing disjunctions introduce a variable that ranges over two atomic individuals, e.g., $z \in \{x, y\}$ in (195a). Both atomic individuals in this set can antecede singular pronouns, as shown in (196).

- (196) a. Whenever LeBron_i scores, he_i appears on the jumbotron.
 b. Whenever Steph_i scores, he_i appears on the jumbotron.

Thus, a singular pronoun can be anaphoric to the variable z that ranges over these two individuals. The condition $w = z$ in (195a) — where w is the variable introduced by the pronoun — requires that the pronoun’s exponent match in number and animacy with each possible value of z . In the case where x and y are animate, *they* is acceptable because of the possibility of singular *they*. In fact, when the animate disjuncts are of mixed gender, only *they* has a true donkey reading, as shown in (197). On the other hand, if x and y are inanimate, as in (194c), singular *they* mismatches in animacy with x and y .

- (197) Whenever [Sabrina or Steph]_i **makes** a shot, %they_i get/*she_i gets/*he_i gets a point.
 (intended: the person who makes a shot gets a point)

Let us turn our attention now to sentences where disjunction controls plural agreement. We first consider the case where the disjuncts are animate, as in (194b). In this case, the variable introduced by the disjunction, z , ranges over the set $\{x, y, x \oplus y\}$ as shown in (195b). Thus, w , which is anaphoric to z , needs singular features if z picks out x or y and needs plural features if z picks out $x \oplus y$. Since *they* is syncretic between singular and plural for animate nominals, it can be anaphoric to z in (194b). In the inanimate case — i.e., (194d) — z again ranges over the set $\{x, y, x \oplus y\}$. In this case, however, there is no pronoun which can be anaphoric to all three; *it* is incompatible with the witness $x \oplus y$, while *they* is incompatible with x and with y . Thus there is no donkey pronoun that makes (194d) grammatical.

The contrast in acceptability of donkey anaphora in the animate vs. inanimate paradigm in (194) exemplifies a widespread pattern across languages and constructions wherein featural mismatches that otherwise cause ungrammaticality are tolerated under syncretism (Groos and van Riemsdijk 1981; Schütze 2003; Citko 2005; Bjorkman 2016; Mateos 2022).

Independent of agreement, support for the present analysis comes from comparing disjunc-

tions that are transparently composed of singular animates, mixed-number animates, singular inanimates, and mixed-number inanimates. That is, disjunctions that transparently consist of a singular nominal and a plural nominal show the same asymmetries that we observe in (194): Mixed-number disjunctions of animates are grammatical (only) with a plural donkey pronoun, as shown in (198b) and (198c), while there is no suitable donkey pronoun for mixed-number disjunctions of inanimates, as shown in (198e) and (198f). The acceptability of (199) shows that the ungrammaticality of (198e) and (198f) owes to a failure in pronoun number resolution with the disjunction, rather than to the mixed-number disjunction itself.

- (198) a. If John invites [Mary or Kate], ✓she_i/✓they_i will be ecstatic.
 b. If John invites [Mary or [Kate and Ashley]], ✓they_i/*she_i will be ecstatic.
 c. If John invites [[Kate and Ashley] or Mary], ✓they_i/*she_i will be ecstatic.
 d. If John smashes [the window or the mirror] with his hammer, ✓it_i/*they_i will shatter.
 e. If John smashes [the window or [the mirror and the vase]] with his hammer, *it_i/*they_i will shatter.
 f. If John smashes [[the mirror and the vase] or the window] with his hammer, *it_i/*they_i will break.
- (199) a. ✓If a construction worker_i smashes [the window or [the mirror and the vase]]_i with his_i hammer, he'll_i be in big trouble.
 b. ✓If a construction worker_i smashes [[the mirror and the vase] or the window]_i with his_i hammer, he'll_i be in big trouble.

Having discussed the empirical coverage of my proposal, I now evaluate its theoretical merits.

5.1.5 X as the locus of plural-agreeing disjunction

The analysis I have proposed attributes three properties to the head X. First, X has a plural number feature, which causes disjunctive subjects that contain X to control plural verbal agreement. Second, X induces Linkian closure over summation. Third, X imposes a filter on the DRS representation of a sentence such that the variable introduced by the disjunction cannot belong to the main/highest DRS. The third property is how we derive the behavior that plural disjunctive agreement is acceptable precisely where discourse anaphora to an indefinite is blocked.

What is the relation between these three properties ascribed to X? Why do all three properties cluster on a single head X? These questions become especially pertinent in light of the cross-linguistic similarities of the distribution of singular vs. plural disjunctive agreement. Indeed, suppose some head X' in some language L differed only from X in that the syntactic number feature on X' was singular rather than plural. Then we would expect L to behave opposite from English and Russian with respect to disjunctive agreement: In L, we would expect that singular-agreeing disjunction is restricted to certain semantic environments, whereas plural-agreeing disjunction follows the same behavior distribution as non-agreeing disjunction. We have discussed data from several languages where the patterns of disjunctive agreement match those found in English and Russian; on the other hand, I am not aware of any language fitting the empirical profile of L.

The first property and the second property named above — i.e., X's syntactic plurality and X inducing closure over summation — seem intuitively related, in that both properties relate to plurality in ways observed elsewhere in English. Indeed, plural verbal agreement is described as such because it typically aligns with semantic plurality, in the sense of summation. The connection to the third property is more difficult to understand. It is not clear why a nominal's referent being closed over sum formation or why a nominal having a particular number feature would make the nominal's associated variable unfit to antecede cross-sentential anaphora.

A tempting way to unite the third property with the first and second is to attribute the unsuitability of an X-containing disjunction to indeterminacy in number that results when an X-

containing disjunction introduces a discourse referent. In particular, merging X with a disjunction represented by the condition $z \in \{x, y\}$ modifies the disjunctive condition on z by means of applying Link's $*$ operator to the set $\{x, y\}$, yielding the condition $z \in \{x, y, x \oplus y\}$. Perhaps a variable that ranges over both atomic and non-atomic entities does not make a good discourse referent; this could, for example, be due to a condition that every discourse referent in a well-formed DRS must have either singular or plural number. A variable z that is subject to the condition $z \in \{x, y, x \oplus y\}$ has neither singular nor plural number, since x and y is atomic but $x \oplus y$ is not. Thus, we might hypothesize that this indeterminate number is what makes certain DRSs with z ungrammatical. According to this hypothesis, singular-agreeing or non-agreeing disjunction — where the associated variable z is subject to that condition $z \in \{x, y\}$, so that no possible value for z involves summation — unproblematically has singular number, if both disjuncts are singular/atomic. Let us call this idea the ‘number indeterminacy hypothesis’.

The number indeterminacy hypothesis runs into two issues. First, the possibility of donkey anaphora in sentences like (194b) shows that a variable of indeterminate number can serve as an anaphoric antecedent, provided that the discourse referent targeted by anaphora is introduced into a subordinate DRS, rather than the main DRS. That is, a proposal that every discourse referent must be either singular or plural would need to stipulate that this restriction applies only to discourse referents introduced into the main DRS. Perhaps the appropriate distinction could be motivated by distinguishing between DRSs that an attitude-holder is epistemically committed to, versus DRSs that are being considered only hypothetically or conditionally; such is the intuition behind Giannakidou's nonveridicality analysis of NPIs.

A second, more fundamental objection to the number indeterminacy hypothesis arises when we consider disjunctions that transparently quantify over disjuncts of mixed number, i.e., disjunctions where one disjunct is singular and the other is plural. Provided that they do not control (morphologically marked) agreement, these disjunctions admit readings that plural-agreeing sg-sg disjunctions do not. For example, disjunctions of mixed number can take wide scope over attitude predicates (200a), can scope out of comparative clauses (200b), and can appear in alternative

questions (200).

- (200) a. Mary believes that [Joe and Tom]_{PL} or Sue_{SG} came. ✓ $\exists >$ believe
 b. Sue speaks more languages than Mary_{SG} or [Kate and Ashley]_{PL}. ✓ $\exists >$ Comp
 c. Did [Sue's two boys]_{PL} or Sue_{SG} come yesterday? ✓AltQ

The DRS for the wide-scope reading of (200a) — according to the semantics that we have been assuming for disjunction throughout this section — is shown in (201). In (201), z has indeterminate number (since x is non-atomic and y is atomic), but the representation with z as a variable in the highest DRS is still well-formed — i.e., (200a) is grammatical under a wide-scope disjunction reading, contrary to what the number indeterminacy hypothesis predicts.

(201)

u	v	w	x	y	z	
mary(u)						
joe(v)						
tom(w)						
$x = v \oplus w$						
sue(y)						
$z \in \{x, y\}$						
believe(u, p)						
p: <table><tr><td>came(z)</td></tr></table>						came(z)
came(z)						

Similar issues arise for (200b) and (200c): The number indeterminacy hypothesis predicts they will be ungrammatical, contrary to fact. Due to its empirical inadequacy, therefore, the number indeterminacy hypothesis fails to link the first and second of X 's properties (ordered as in the opening paragraph of this section) with the third property. The nature of this link remains an open question, but I offer here one idea of why all three properties might cluster on a single head

X, across a number of languages.

The idea is to approach lexicalization of X from a diachronic perspective. Notice that many of the environments where plural disjunctive agreement is licensed — namely, the downward-entailing environments — are environments where disjunction has the same truth conditions as conjunction, interpreted distributively (Jennings 1994). For example, (202a), under a narrow-scope reading of disjunction, is mutually entailing with (202b). Likewise, (203a), under a narrow-scope reading of disjunction, is mutually entailing with (203b). Under modals, disjunction leads to a free choice conjunctive inference, as shown in (204) (see also Sections 2.2.6 and 4.2.2).

- (202) a. If you like cats or dogs, you are welcome here.
b. If you like cats you are welcome here and if you like dogs you are welcome here.
- (203) a. Alf is taller than Bob or Kai.
b. Alf is taller than Bob and Alf is taller than Kai.
- (204) a. You can have coffee or tea.
b. You can have coffee and you can have tea.

Suppose that at some stage in a language's history, there is no head X. We might imagine that speakers, when using disjunction with SG-SG subjects in downward-entailing or modal environments, nonetheless use plural verbal agreement because disjunction in these environments is interpreted conjunctively (recall that conjunctions are semantic pluralities, cf., Schmitt 2013, Schmitt 2019). That is, plural agreement with SG-SG disjunctive subjects reflects notional/semantic agreement in downward-entailing and modal environments.⁵ Indeed, past studies of disjunctive agreement have noted that disjunction is more likely to be interpreted 'inclusively' in the kinds of semantic environments where it controls plural agreement (Morgan 1984; Peterson 1986). In upward-entailing, unquantified environments, on the other hand, disjunction is not interpreted conjunctively, so disjunctive subjects only control singular agreement.

⁵For further evidence that SG-SG disjunctive sentences may be interpreted as semantic plurals in downward-entailing environments, see Section 7.1.

Over time, this asymmetry between downward-entailing environments — where SG-SG disjunctions are sometimes seen to control plural agreement — and upward-entailing environments — where SG-SG disjunctions control only singular agreement — can lead to plural-agreeing disjunction becoming re-analyzed as an NPI. The locus of these NPI properties and of the plural agreement is X, since X relates the environments where disjunction is interpreted conjunctively with the semantic environments where disjunctive subjects are observed to control plural agreement. Characterizing X as an NPI-like lexical item seems fairly plausible; recall that NPIs exhibit similar sensitivities to semantic environment, which have also been analyzed as arising from limitations on the discourse referents they introduce (see Section 4.2.1). Once X has been lexicalized as an NPI, plural-agreeing disjunction’s distribution may stray from the original pattern, allowing it to be used in other quantificational contexts. This leads to the distribution of plural-agreeing disjunction that we observe synchronically.

An objection to this suggested diachronic pathway is that we do not see NPIs, generally, acquiring the distributional profile that we have described plural disjunctive agreement. An appeal, however, of the diachronic theory described above is that a similar pathway would not be expected to lexicalize singular-agreeing disjunction as an NPI, explaining why the hypothetical language L described above may not exist. If anything, we might expect singular-agreeing disjunction to behave as a positive polarity item in certain languages. Further diachronic study is needed to validate or disprove this hypothesis.

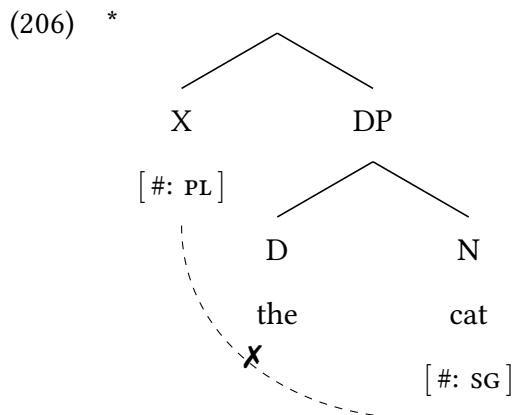
5.1.6 Overgeneration concerns

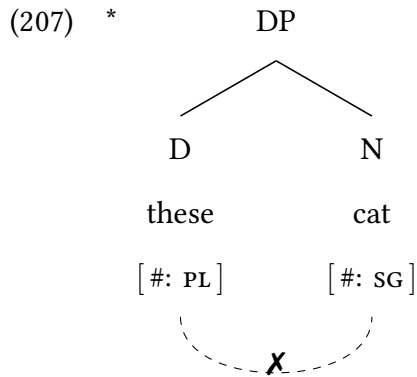
Returning to the agreement facts, my proposal regarding the head X might raise concerns of overgeneration. In particular, comparing the structures (159) and (160), we have a situation where in (160), the head X merges with a nominal which would otherwise control singular agreement, (159), and the resulting nominal then controls plural agreement. How can we ensure that X will not allow ‘spurious’ plural agreement with singular nominals, in general? We certainly do not

want to say that X can merge with any nominal; if that were the case, we would expect that in environments where disjunctions can control plural agreement – quantificational environments, downward-entailing environments, and questions – so too could ordinary singular nominals, contrary to fact (205).

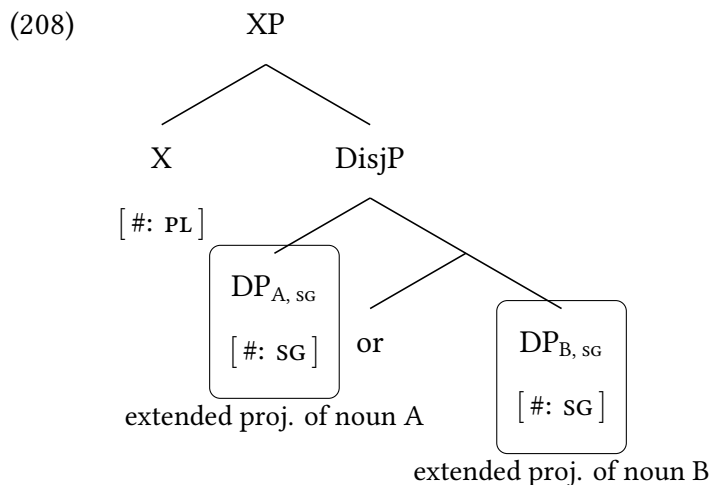
- (205) a. *If the cat **meow**, feed it.
 b. *Mary does not think that the cat **meow**.
 c. ***Do** your cat like sardines?_{PolQ}

To explain the ungrammaticality of plural agreement in (205), I appeal to concord within the nominal domain. X has a plural number feature, whereas *cat* has a singular number feature. These cannot both be present within the same nominal; the structure in (206) is ungrammatical due to a clash in number features (Heycock and Zamparelli 2005; Norris 2014). That is, the structure in (206) is ungrammatical for the same reason that **these cat* is: *Cat* is singular, so *these*, which is plural, cannot be present within the same extended nominal projection, as depicted in (207) (Wechsler and Zlatić 2003; King and Dalrymple 2004).





What distinguishes the (grammatical) disjunction structures with X from ungrammatical structures like (206) is the functional layer introduced by the disjunction head. In (160), the two DPs that have singular features are both contained within the DisjP; the DisjP layer creates a barrier for concord operations, as depicted in (208). Since DisjP combines two extended nominal projections into a single constituent, we assume that DisjP closes off the extended nominal projection of each nominal. Therefore, since concord is enforced only between elements within the same extended nominal projection, the plural feature on X in (208) does not cause an issue with the singular features on the DPs. For other instances of different feature values for the same concord feature, see Brattico (2010); Norris (2014); and Landau (2016).



When else might X lead to a well-formed structure? Assuming that disjunction and conjunction are analogous structurally, we expect that ConjP also creates a barrier to concord, allowing X to

merge with a conjunction of two singular nominals. As far as I can tell, this prediction is harmless: Even without X's presence, conjunctions already control plural agreement; and having two possible conjunction structures, $[_{\text{DisjP}} \text{A and B}]$ and $[_{\text{DisjP}} \text{X} [_{\text{A and B}}]]$, where the latter's distribution is a strict subset of the former's, will have no observable effects or unwelcome predictions. We might consider also other coordination-like constructions such as *A but not B*, *A along with B*, and *not only A but also B*. Our concord analysis predicts that the possibility of plural agreement (when appropriately licensed) with each of these coordinations will depend on the syntactic relation between the coordinands. If B is subordinate to A such that the entire coordination remains an extended projection of A, then we would expect concord to prevent X from merging, thus precluding plural agreement. I leave further investigation of the empirical facts in this domain, as well as implications for my analysis, for future work.

A further prediction that this concord-based analysis makes is that if a nominal has no syntactic number feature, then X will be able to merge with it such that the nominal controls plural agreement. I argue that the sentence pair in (209) involving *each* supports this prediction.⁶ In (209a), the subject *each* controls plural agreement — perhaps surprising given prescriptive pressures for sentential subjects beginning with *each* to control singular agreement (e.g., Garner 2024). On the other hand, in (209b), where the sentential subject with *each* also includes the singular nominal *route*, plural agreement is ungrammatical. According to the concord analysis presented above, we expect that bare *each* in (209a) has no number feature because it contains no N node. Therefore, merging X with *each* in (209a) does not create issues for concord. On the other hand, the N *route* in (209b) has a singular number feature, and thus merging X leads to a feature conflict within the nominal domain.

- (209) a. There are many ways to get there, and each **are/take** about eight minutes.
 b. *There are many ways to get there, and each route **are/take** about eight minutes.

Other sentences where bare *each* controls plural agreement can be found in COCA (Davies

⁶Thank you to Dylan Bumford for bringing this sentence to my attention.

2008–). Two such examples are shown in (210):

- (210) a. There are three distinct ways you can set up your blog. Each **have** a different strategy and benefit.
- b. Apple and the federal government learn a lot from each other and the latest iteration of the iPhone5 is just proof. Every time we turn around, each **are** getting more powerful. (Davies 2008–)

That the plural agreement in (209a) and (210) may owe to the presence of X is bolstered by examining the semantic environments where the plural-agreeing *each* subjects appear: (209a) and (210a) are ‘mention-one contexts’ where for the purposes of the conversational goals, any single witness suffices (see Sections 5.2.1 and 6.5); and in (210b), the plural-agreeing subject occurs in the nuclear scope of the quantifier *every*.

This discussion of bare *each* exemplifies one kind of situation where we might expect X to cause a non-disjunctive subject to control plural verbal agreement. With bare *each*, the key assumption is that *each* is a determiner which is not itself marked for number.⁷ A further prediction of my analysis is that X should be able to combine with disjunctions of non-DPs, with familiar semantic effects. This idea is the focus of the next section.

5.1.7 Non-DP disjunction

Beyond disjunctions of DPs, disjunctions which are ostensibly at other heights are also compatible with both singular and plural agreement. (211) shows examples from COCA where disjunction appears to be below the determiner level and controls plural agreement.

⁷To rule out *each* combining with plural nominals, e.g., **We studied each routes*, we might appeal to a semantic restriction owing to the distributivity encoded by *each*.

- (211) a. ✓Conduction might change the timeline if the [ground or atmosphere] **are** not at the same temperature as the surface.
- b. ✓The [DP⁸ or director] **are** generally only exposed to the VFX super and maybe a few other VFX leads.
- c. ✓The [CFO or CEO] **are** always the best connection points for this.

(Davies 2008–)

Notice that in each of the sentences in (211), Ivlieva's Generalization is satisfied. In (211a), the disjunction occurs within a conditional antecedent, while (211b) and (211c) contain quantification in the form of *generally* and *always*. Analogous sentences to those in (211) with singular agreement are also acceptable:

- (212) a. ✓Conduction might change the timeline if the [ground or atmosphere] **is** not at the same temperature as the surface.
- b. ✓The [DP or director] **is** generally only exposed to the VFX super and maybe a few other VFX leads.
- c. ✓The [CFO or CEO] **is** always the best connection point for this.

It is difficult to be sure whether the sentences in (212), syntactically, involve disjunctions below the DP level, due to the possibility of across-the-board (ATB) movement of the determiner within the DP.

Clearer examples of disjunction occurring at the NP level (rather than the DP level) involve quantificational determiners. Take for example, the sentences in (213). The meanings of these sentences ensure that they involve disjunction of NPs rather than DP disjunction accompanied by ATB movement of the determiner; substituting the subject in (213a) with *not enough time* or *not enough money* gives a different meaning, i.e., is true in worlds where sufficient time and insufficient money are spent on PC games. Likewise, (213b) means that there are neither men nor

⁸Here, DP means 'Director of photography', not Determiner Phrase.

women with dominion over us — not that there is (at least) one gender of which no members have dominion over us.

- (213) a. Not enough [time or money] **are** put into PC games these days.

(<https://steamcommunity.com/app/1888930/discussions/0/3829791550530292660/?ctp=3>)

- b. No [man or woman] **have** dominion over us.

(<https://www.instagram.com/p/CFMgq2eHNBF/>)

For the sake of completeness, we note that without disjunction, the nominals in (213) obligatorily control singular agreement, as shown in (214) — again, demonstrating that disjunction is needed to create an environment where X can pluralize an otherwise syntactically singular nominal.

- (214) a. Not enough {time, money} **is/*are** put into PC games these days.

- b. No {man, woman} **has/*have** dominion over us.

As a final note regarding disjunction below the DP level (see also ‘determiner sharing’, e.g., Ackema and Szendrői 2002): The concord-based approach that I laid out in Section 5.1.6 — where disjunction creates a barrier for concord operations such that the plural number feature on X can coexist with singular number features on nouns when disjunction is present — is challenged by other apparent concord operations with number-marked demonstratives across disjunctions. In particular, only singular demonstratives may be used with disjunctions of singulars (215), despite the demonstrative being separated from the noun by a disjunction boundary. This is unexpected if disjunction creates a boundary that divides concord domains. Further work is needed to reconcile these facts, though it is worth noting that the pattern with disjunction mirrors what is observed with conjunctions (King and Dalrymple 2004). Note that the ungrammaticality of (215) cannot be attributed to the height of disjunction itself, since disjoined nominals below the determiner level are acceptable for number-neutral determiners (212).

- (215) a. *These/*Those [DP or director] is/are generally only exposed to the VFX super and maybe a few other VFX leads.
- b. *These/*Those [CFO or CEO] is/are always the best connection points for this.

Plural agreement with disjoined subjects is not limited just to disjunctions of nominals. (216) shows plural agreement with disjunctions of PPs; (217) shows plural agreement with disjunctions of VPs; and (218) shows plural agreement with disjunctions of CPs. Note that (216) and (217a)–(217b) do not involve any ignorance on the speaker’s part; these instances of plural-agreeing disjunction seem to be licensed by ‘mention-one’ contexts like those which I will discuss in Section 6.5. (217c) and (218) show plural agreement with the PP and CP disjunctions, respectively, occurring in the antecedent of a conditional.

(216) A: When can I stop by tomorrow to say hi?

B: [Before noon or after 3pm] (both) **work**.

- (217) a. [Failing a drug test or falling asleep on the job] **are** sure to cost you your pilot’s license.
- b. [Baking cookies or watching a show] **are** fun even when the weather is crummy.
- c. If [following my directions or acting respectfully] **are** too difficult, maybe you ought to go home.

(218) If [that there won’t be snacks or that the ceremony will be long] **sound** foreboding, I’d recommend you not attend.

With (216), where plural agreement appears to be conditioned by the mention-one utterance context, we find that singular agreement is dispreferred, (219). Thus, number agreement with prepositional phrases appears to replicate the pattern which we will see in Section 6.5 (in particular, see discussion of (322)).

(219) A: When can I stop by tomorrow to say hi?

?B: Before noon or after 3pm **works**.

Disjoined PPs can also control plural agreement in polar questions but not in alternative questions (220), again mirroring disjoined DPs. Further, disjoined PPs can control plural agreement in the downward-entailing complement of *doubt* (221).

(220) **Context:** *Speaking to the receptionist to schedule a doctor's appointment.*

Do [before noon or after 3pm] work? ✓PolQ, *AltQ

(221) Maria doubts that [behind home plate or along the third base line] **are** worth it for season tickets, given the prices.

Preliminary results, therefore, suggest that disjunctions at the sub- or super-DP level are sensitive to similar kinds of semantic factors that disjunctions of DPs are, in terms of the verbal agreement morphology that they control. I leave as an issue for future research the question of how far the similarities extend, as well as how to integrate the empirical facts in this domain into a broader theory of agreement with non-DP subjects.

5.1.8 Plural-agreeing plural-plural disjunction

By attributing the source of plural agreement in disjoined SG-SG nominals to a syntactic plural feature on the head X, we derive why PL-PL disjunctions obligatorily control plural agreement and are not semantically restricted in where they take existential scope (Section 3.3). Recall from Section 5.1.1 that with singular-agreeing SG-SG disjunctions, we analyzed the singular agreement morphology as spelling out the features of both singular nominals within the DisjP. In a disjunction of two plural nominals, both nominals have plural syntactic number; so even without X, verbal agreement with the disjunctive subject is plural. Therefore, PL-PL disjunctions are not semantically restricted in where they control plural-agreement; moreover, there is no way for a PL-PL disjunction to control singular agreement. These are exactly the empirical facts we observe.

Further, our analysis derives the restrictions on mixed-number disjuncts discussed in Section 3.3 — namely, that mixed-number disjuncts require plural verbal agreement and do not allow wide-scope disjunction readings with either singular or plural agreement. There are two cases to consider with mixed-number disjunction: The case where X is present, and the case where X is not. If X is present, then we expect plural agreement — and further, a restricted semantic distribution; this is what is observed (see, e.g., (115) and (116)). If X is not present, on the other hand, number agreement will be with both disjuncts (regardless of which comes first). Since one disjunct has singular syntactic number and one disjunct has plural syntactic number, verbal agreement cannot be spelled out as singular and cannot be spelled out as plural. Thus, there is no licit structure for mixed-number disjunctions that is not subject to the semantic restrictions brought along by X. A prediction of this approach is that in cases of syncretism between singular and plural agreement, wide-scope disjunction readings will be possible. I leave this as a question for future research.

Mixed-number disjunction also provides support for the particular agreement mechanism argued for in Section 5.1.1, where both disjuncts are equally high for the purposes of agreement, such that T copies number features from both disjunctions. For instance, adopting instead van Koppen (2005) and Bošković (2009)'s analysis of closest conjunct agreement wherein the first conjunct is structurally higher (Munn 1993; Johannessen 1998) and T agrees with both the highest disjunct and the DisjP itself, we would incorrectly predict a sensitivity to ordering between disjuncts. An analysis in which T agrees with just the highest (first) disjunct but not with the DisjP as a whole would also predict an ordering asymmetry, contrary to what is described in Section 3.3. I will stress here that the English mixed-number data presented in Section 3.3 should be taken as preliminary; more detailed investigation — as well as cross-linguistic work — may uncover a more complex picture, possibly supporting one of the other agreement mechanisms discussed here.

5.2 Ivlieva (2012, 2013)’s analysis

As far as I am aware, the only other existing analysis of disjunctive agreement that addresses empirical patterns like those that I have argued for in this dissertation is the analysis presented in Ivlieva (2012, 2013).

Ivlieva presents an analysis based on grammatical implicature via an exhaustivity operator (see also Fox 2007, Chierchia et al. 2012, Chierchia 2013, Spector 2014). The intuition behind Ivlieva’s analysis is that plural disjunctive agreement triggers two different scalar implicatures — an exclusivity implicature (‘not both’) due to the conjunctive alternative, and a multiplicity implicature (‘not just one’) due to the singular-agreeing disjunctive alternative. Under certain conditions — such as in non-downward-entailing, non-quantificational environments — these two implicatures are contradictory yet un-cancellable, as shown in (222), leading to ungrammaticality.

- (222) a. *Petja ili Vasja **prišel-i**.
 Petja or Vasja came-PL
 ‘Petja or Vasja came.’ (Ivlieva 2013:101)
- b. $\llbracket (222a) \rrbracket$
 $= (\text{came}(p) \vee \text{came}(v) \vee \text{came}(p \oplus v))$ (asserted)
 $\wedge \neg [\text{came}(p) \vee \text{came}(v)]$ (multiplicity implicature)
 $\wedge \neg [\text{came}(p \oplus v)]$ (exclusivity implicature)
 $= \perp$

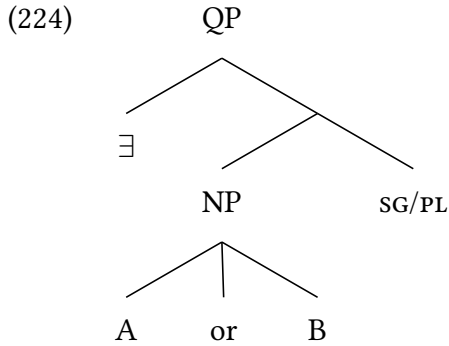
Under other conditions — such as in downward-entailing or quantificational environments, plural disjunctive agreement does not produce contradictory implicatures. Therefore, plural-agreeing disjunction is licensed in such environments.

Formally, Ivlieva’s analysis makes the following assumptions. First, plurality is represented syntactically by a feature **PL**, which induces closure over sum formation, denoted with the *

operator (Link 1983):

- (223) a. Suppose $\llbracket \text{boy} \rrbracket = \{a, b, c\}$
 b. Then $\llbracket \text{boys} \rrbracket = * \{a, b, c\} = \{a, b, c, a \oplus b, a \oplus c, b \oplus c, a \oplus b \oplus c\}$

Next, *or* is itself unmarked for number, but a disjunction can have a PL feature with the plural semantics in (223). Syntactically, *or* introduces a predicate that combines with a covert existential quantifier. Thus, a disjunction has the structure shown in (224):



Scalar implicatures are calculated via exhaustification, which negates alternatives that asymmetrically entail the asserted content. Exhaustification, implemented via the operator *Exh*, performs the following operation: Suppose that the speaker said ϕ , and let ALT_ϕ be the set of relevant alternatives that the speaker could have said instead. For every alternative $\psi \in ALT_\phi$, if ψ is a stronger statement than (i.e., asymmetrically entails) ϕ , then negate ψ . In this way, *Exh* functions similarly to English *only* (Chierchia 2004).

$$(225) \quad \text{Exh}(\phi) = \phi \wedge \forall \psi \in ALT_\phi : [\psi \Rightarrow \phi \wedge \phi \not\Rightarrow \psi] \Rightarrow \neg \psi$$

Working in this framework, Ivlieva derives the ungrammaticality of (222) as follows. The asserted proposition for (222) is as shown in (226a), where the disjunction ranges over the closure over sum formation induced by the PL feature. The two alternatives to consider are the singular-agreeing disjunctive alternative, (226b), and the conjunctive alternative, (226c):

- (226) a. $\exists e \exists x. [[x = p \vee x = v \vee x = p \oplus v] \wedge * \text{came}(e, x)]$ (PL, *or*)
- b. $\exists e \exists x. [[x = p \vee x = v] \wedge * \text{came}(e, x)]$ (SG, *or*)
- c. $\exists e \exists x. [[x = p \oplus v] \wedge * \text{came}(e, x)]$ (PL, *and*)

Ivlieva assumes that both (226b) and (226c) asymmetrically entail (226a). Thus, two implicatures are drawn for plural-agreeing disjunction. Comparison to the singular-agreeing disjunctive alternative leads to a multiplicity implicature: *Fred or Bill came and it's not the case that only one of them came*. Comparison with respect to the conjunctive alternative leads to an exclusivity implicature: *Fred or Bill came and it's not the case that both came*. Exhaustification with respect to the alternatives of (222), therefore, leads to the strengthened meaning (227) – which is a contradiction.

$$\begin{aligned}
 (227) \quad & \exists e \exists x. [[x = p \vee x = v \vee x = p \oplus v] \wedge * \text{came}(e, x)] \\
 & \wedge \neg \exists e \exists x. [[x = p \vee x = v] \wedge * \text{came}(e, x)] \quad \text{(multiplicity implicature)} \\
 & \wedge \neg \exists e \exists x. [[x = p \oplus v] \wedge * \text{came}(e, x)] \quad \text{(exclusivity implicature)} \\
 & = \perp
 \end{aligned}$$

Thus, together with the asserted content, the multiplicity and exclusivity implicatures of (222a) yield a contradiction. In Ivlieva's analysis, this contradiction is the source of the ungrammaticality of (222a). Within calculations of scalar implicature – both via the grammatical approach and in neo-Gricean pragmatic tradition – implicatures are typically not obligatory; indeed, (Grice 1975) identifies cancellability as one hallmark of conversational implicatures. Under normal conditions, an implicature is cancelled if it would be contradictory to what was asserted. For instance, the 'not all' implicature that is typically associated with the scalar item *some* is not made, if making this implicature would contradict another part of the utterance, as in (228).

(228) Alf dislikes some of my friends ... in fact, he dislikes them all.

So why are the contradictory implicatures avoidable in sentences like (228), but not in (227)? Within the framework of grammatical implicature, there are two ways that a potential scalar implicature might be avoided. First, the exhaustivity operator Exh is not present in every sentence; if a given sentence lacks Exh, then the sentence's meaning will not be strengthened with respect to its alternatives. Second, alternatives can typically be pruned from the set of alternatives that Exh acts over. The effect is that the pruned alternatives are not negated when exhaustification applies. The possible absence of Exh and the possibility of contextual pruning within the framework of grammatical implicature are well-motivated empirically: Exhaustivity inferences are known to be sensitive to context (Groenendijk and Stokhof 1984) and, as discussed above, implicatures are cancellable.

Ivlieva argues that certain elements, including the PL feature, obligatorily occur within the scope of Exh (see also Spector 2014). Further, certain alternatives cannot be pruned. In particular, Ivlieva argues that for a sentence containing a PL feature, the SG-alternative is un-prunable. It follows, therefore, that the PL-containing sentence must be exhaustified relative to its SG counterpart (see also Spector 2007, Zweig 2009). Accordingly, sentences involving plural nominals come with obligatory multiplicity implicatures.

Ivlieva adopts one additional constraint on pruning based on symmetry, owing to Fox and Katzir (2011). The constraint is stated in (229a). The idea is that that if two alternatives are symmetric in terms of their informativity, then either both alternatives are relevant (and thus negatable by exhaustification), or neither of them are. Symmetry is defined as in (229b).

(229) a. *Symmetry constraint on pruning*

Contextual pruning cannot prune one of the symmetric alternatives without also pruning the other. (Ivlieva 2013:117)

b. *Definition of symmetric alternatives*

S_1 and S_2 are symmetric alternatives of S if S is equivalent to the disjunction of S_1 and S_2 , and S_1 and S_2 contradict each other. (Ivlieva 2013:117)

Adopting these constraints on implicature calculation, Ivlieva then goes on to explain why the two implicatures in (227) cannot be cancelled, despite their leading to a contradiction. First, due to the PL feature in (222a), Exh must be present, and exhaustification must target an alternative set containing the (un-prunable) singular-agreeing disjunctive alternative (226b). Since the singular-agreeing disjunctive alternative cannot be pruned, the conjunctive alternative (226c) also cannot be pruned, due to the symmetry constraint on pruning: (226b) and (226c) are symmetric alternatives of (226a). Thus by (229a), (226c) cannot be pruned from the alternative set if (226b) cannot be; and (226b) cannot be pruned, by assumption. So (226c) also cannot be pruned. Thus, both the multiplicity and exclusivity implicatures are obligatory in (227), and a contradiction is unavoidable.

Consider now a sentence where singular-agreeing disjunction appears in a downward-entailing environment, such as under negation, as in (230):

(230) Ja ne dumaju, što Petja ili Vasja **prišēl-i**.

I not think that Petja or Vasja came-PL

‘I don’t think that Petja or Vasja came.’ (Ivlieva 2013:102)

As with the non-negated case, the alternatives of interest are the singular-agreeing disjunctive alternative and the conjunctive alternative. Ivlieva assumes that the PL feature must occur within the scope of Exh. However, negation flips entailment relations, so as long as Exh is situated above negation, then neither the singular-agreeing disjunctive alternative (231b) nor the conjunctive alternative (231c) entails the asserted proposition (231a).

(231) a. $\neg \exists e \exists x. [[x = p \vee x = v \vee x = p \oplus v] \wedge *came(e, x)]$ (PL, or)

b. $\neg \exists e \exists x. [[x = p \vee x = v] \wedge *came(e, x)]$ (SG, or)

c. $\neg \exists e \exists x. [[x = p \oplus v] \wedge *came(e, x)]$ (PL, and)

Therefore exhaustification applied to (231a) is vacuous. So no contradictory implicatures are made for (230), and the plural disjunction is grammatical. Ivlieva goes on to show that in quantificational environments, exhaustification produces non-contradictory meanings, explaining the grammaticality of plural-agreeing disjunction in such environments. The reader is referred to Ivlieva (2013:110–115) for details.

5.2.1 Issues with Ivlieva’s account

Ivlieva’s analysis is commendable on many counts. For one, it is, as far as I am aware, the only existing account of disjunctive agreement that attempts to explain the sensitivity of agreement morphology to semantic environment. The style of analysis pursued, based on scalar implicature, is also quite appealing, in that it relates the amelioration of plural disjunctive agreement in downward-entailing environments to the well-known observation that scalar implicatures disappear when entailment relations are reversed (Horn 1989:233–234; Chierchia 2004). Ivlieva’s analysis — in attributing the distribution of agreement forms to semantic properties of licensing environments — is also well-suited for explaining data like those discussed in Section 2.3, where plural-agreeing disjunction can take scope into positions which are normally not possible, provided a higher licensing operator is present above where the disjunction takes scope. We shall see in Sections 5.3 and 5.4 that other kinds of approaches, particularly those that rely on syntactic constraints, struggle to account for the data discussed in Section 2.3.

However, as far as I can tell, Ivlieva’s analysis suffers from a technical flaw arising from how the two implicatures are calculated. In particular, Ivlieva’s proposal depends on a certain semantic difference between singular- and plural-agreeing disjunction that I argue fails under closer scrutiny.

To see the issue, let us revisit how the the crucial multiplicity and exclusivity implicatures are calculated for (222a). For a plural-agreeing disjunction ‘a or b’, we can schematize the assertion and alternatives as in (232), where p represents a predicate (c.f., (226)):

- (232) a. $p(a) \vee p(b) \vee p(a \oplus b)$ (PL, *or*)
 b. $p(a) \vee p(b)$ (SG, *or*)
 c. $p(a \oplus b)$ (PL, *and*)

In Ivlieva's account, multiplicity and exclusivity implicatures come from comparing (232a) with (232b) and (232c), respectively. In order for exhaustification to lead to strengthening – i.e., the enrichment of (232a) with the negations of (232b) and (232c) – the alternatives in question must asymmetrically entail the asserted content, due to how Exh is defined (see (225)). That is, in order for multiplicity and exclusivity implicatures to be computed, the singular-agreeing disjunctive alternative must asymmetrically entail the plural-agreeing disjunctive statement, as shown in (233a). Likewise, the conjunctive alternative must asymmetrically entail the plural-agreeing disjunctive statement, as shown in (233b):

- (233) a. *Preconditions for multiplicity implicature w/ plural-agreeing disjunction:*

$$(SG, or) \Rightarrow (PL, or), (PL, or) \not\Rightarrow (SG, or)$$

$$\Updownarrow$$

$$(232b) \Rightarrow (232a), (232a) \not\Rightarrow (232b)$$

- b. *Preconditions for exclusivity implicature w/ plural-agreeing disjunction:*

$$(PL, and) \Rightarrow (PL, or), (PL, or) \not\Rightarrow (PL, and)$$

$$\Updownarrow$$

$$(232c) \Rightarrow (232a), (232a) \not\Rightarrow (232c)$$

Let us examine more carefully how the exclusivity implicature arises. Ivlieva's claim that the exclusivity implicature for disjunction comes from comparison with the conjunctive alternative is a familiar one, dating back to Grice (1989). In order to apply this kind of argument to plural-agreeing

disjunction so that exclusivity together with multiplicity creates a contradiction, Ivlieva adopts, as the meaning of the conjunctive alternative, the non-boolean conjunction shown in (232c) – rather than logical conjunction, as is traditionally done.

Presumably, exclusivity implicatures for singular-agreeing disjunction also come from comparison to the conjunctive alternative. That is, the exclusivity implicature for (234a) – namely, *It's not true that both Petja and Vasja came* – comes from comparison to (234b).

- (234) a. Petja or Vasja **came.SG**.
 b. Petja and Vasja **came.PL**.

By assumption, (234a) has the semantics in (232b) and (234b) has the semantics in (232c). Since exclusivity implicatures come from exhaustification relative to (an alternative set containing) the conjunctive alternative, the exclusivity inference for (234a) requires that (232c) asymmetrically entail (232b); otherwise, Exh would have no effect. So to derive the exclusivity implicature for singular-/non-agreeing disjunctions, (235) must hold.

(235) *Precondition for exclusivity implicature with singular-/non-agreeing disjunction:*

$$(\text{PL}, \text{and}) \Rightarrow (\text{SG}, \text{or}), (\text{SG}, \text{or}) \not\Rightarrow (\text{PL}, \text{and})$$

$$\Updownarrow$$

$$(232c) \Rightarrow (232b), (232b) \not\Rightarrow (232c)$$

Returning now to plural-agreeing disjunction, we find that (235) creates an issue when calculating the multiplicity entailment. As a general fact, note that for any propositions p and q , if p entails q , then $p \vee q = q$. Let p be the conjunctive alternative (232c) and q be the singular-agreeing disjunctive alternative (232b). Then p does indeed entail q , by (235). It follows that $p \vee q = q$. That is, the disjunction of the conjunctive alternative (232c) with the singular-agreeing disjunctive alternative (232b) is equivalent to just the singular-agreeing disjunctive alternative by itself.

I claim that this leads to a contradiction. Here is how: According to denotations given in (232),

the plural-agreeing disjunctive alternative (232a) is also equivalent to the disjunction of the conjunctive alternative (232c) with the singular-agreeing disjunctive alternative (232b) (recall that this condition is necessary in Ivlieva's analysis so that singular-agreeing disjunction and conjunction are symmetric alternatives to plural-agreeing disjunction). It follows that the singular-agreeing disjunctive alternative (232b) is equivalent to the plural-agreeing disjunctive alternative (232a). But this cannot be, for the multiplicity implicature requires that singular-agreeing disjunction asymmetrically entail plural-agreeing disjunction (see (233a)). More succinctly, the argument follows the steps shown in (236):

- | | | |
|-------|------------------------------------|-----------------|
| (236) | a. $(232c) \Rightarrow (232b)$ | (235) |
| | b. $(232c) \vee (232b) = (232b)$ | (boolean logic) |
| | c. $(232c) \vee (232b) = (232a)$ | (232) |
| | d. $(232a) = (232b)$ | (transitivity) |
| | e. $(232a) \not\Rightarrow (232b)$ | (233a) |
| | f. $\perp$ | (236e), (236d) |

The entailment relation in (235) surfaces a second, related issue for Ivlieva's derivation of (222a)'s ungrammaticality. Recall that Ivlieva relies on Fox and Katzir (2011)'s symmetry constraint on pruning, (229a), for the exclusivity implicature to be made despite it leading to a contradiction. The argument was that the singular-agreeing disjunctive alternative (226b) and the conjunctive alternative (226c) are symmetric alternatives to the assertion (226a), and thus, since (226b) cannot be pruned (by assumption), then neither can (226c) be. By definition (229b), symmetry requires that the two alternatives in question be contradictory. But if (235) holds, then the singular-agreeing disjunctive alternative and the conjunctive alternative are certainly not contradictory.

We might, as a remedy, consider modifying the symmetry constraint on contextual pruning (229a) to eliminate the requirement that the alternatives in question be contradictory. However, such a change would be undesirable, given that the entire intuition behind prohibiting asymmetric

pruning of symmetric alternatives is that the symmetric alternatives are equally informative, from which it follows that it is impossible for one alternative to be relevant and the other irrelevant.

Ultimately, the issue with Ivlieva’s approach boils down to how she differentiates the meanings of plural-agreeing vs. singular-agreeing disjunction. To derive the multiplicity (‘not just one’) implicature, Ivlieva proposes that plural-agreeing disjunction explicitly encodes the possibility of both disjuncts holding, whereas singular-agreeing disjunction does not include as part of its meaning the possibility that both disjuncts hold. However, exactly *how* singular-/non-agreeing disjunction encodes exclusivity cannot be held consistent across the entire paradigm in a way that derives all the empirical facts. Note that the ‘easy’ fix we might consider – to explicitly encode exclusivity into singular-agreeing disjunction, as in (237) – immediately encounters problems: Such an approach predicts that the exclusivity inference with singular-agreeing disjunction is un-cancellable, contrary to fact (see also Section 1.1).

$$(237) \quad \llbracket a \text{ or-SG } b \rrbracket = \lambda p.(p(a) \vee p(b)) \wedge \neg(p(a) \wedge p(b))$$

A further argument against Ivlieva’s exhaustification-style analysis comes from the acceptability of plural-agreeing disjunction in mention-one contexts, which we discuss further in Section 6.5. Mention-one contexts are those such as (238), where providing a single answer that fulfills the conversational goals is sufficient, even if other answers might also be true:

(238) **Context:** *‘Italian tourist’*. *Alf is an Italian tourist visiting Amsterdam. Seeking news from home, she approaches a local Amsterdammer on the street, and asks (319).*

A: Where do they sell Italian newspapers in Amsterdam?

B: At the Central Railway Station. (Groenendijk and Stokhof 1984:458–459)

Groenendijk and Stokhof observe that in mention-one contexts such as (238), B’s answer is not interpreted exhaustively: By answering, *At the Central Railway Station*, B is not committing to Italian newspapers not being sold at, say, the bookstore halfway across the city.

As we discuss in Section 6.5, speakers readily accept plural-agreeing disjunction in mention-one

contexts, often in fact preferring it to singular-agreeing disjunction:

(239) A: I need someone to help me with my phonetics homework. Who should I ask?

B: Dee or Fey **are** good at phonetics. Ask one of them.

Within the framework of grammatical exhaustification assumed by Ivlieva, there are two possible ways to capture the lack of exhaustive inference observed in (238): one, by saying that Exh, the operator responsible for exhaustification, is not present; or two, by saying Exh is present, but the alternatives which would typically be negated by exhaustification — such as *at the bookstore* — are not in the alternative set (for instance, due to relevance).

But recall the assumptions needed to derive the contradiction that typically arises when plural-agreeing disjunction occurs in an upward-entailing, non-quantified environment. These were that the PL feature obligatorily occurs within the scope of Exh, and that neither the SG- alternative nor the conjunctive alternative is prunable from the alternative set. Due to these assumptions, neither of the strategies for avoiding exhaustive inferences in (238) would be possible in (239), so plural-agreeing disjunction is predicted to be contradictory and therefore ungrammatical. This is an incorrect prediction; plural-agreeing disjunction is reported to be highly acceptable in mention-one contexts.

5.3 Height of disjunction drives agreement

We might also consider syntactic approaches for deriving the distributional differences between singular and plural disjunctive agreement. Under one kind of syntactic analysis, the two different agreement morphologies owe not to differences in the lexical entry of *or* or to featural differences within the disjunction, but rather to different syntactic structures altogether, in terms of what size disjuncts are being coordinated.

To motivate a proposal based on disjunct size, we note that independent of verbal agreement, several analyses of disjunction have argued that (some) disjunctive structures involve repeated

material across disjuncts, which is elided so that only one copy of the repeated material is pronounced (Schwarz 1999; Han and Romero 2004; Wu 2021). And specific to disjunctive verbal agreement, Winans (2019) suggests — in the context of polar vs. alternative questions (see Section 2.4) — that singular agreement involves coordination of larger, more complex phrases, while plural agreement involves coordination of smaller elements.

The idea is appealing in its simplicity: Singular agreement occurs when multiple copies of the same verb each agree with their own singular subject, while plural agreement occurs when a single verb agrees with the entire disjunction as a whole. Winans’s idea that the differences in disjunct size derive differences in agreement between polar vs. alternative questions is shown in (240) (see also Smith et al. 2018:461). In the alternative question, (240), disjunction is at the clausal level. Within each disjunct, *sing* agrees with its singular subject; the first occurrence of *sing* is then elided to produce the surface string. In the polar question, (240), disjunction is at the DP level. The DisjP subject *Lindsay or Angela* has plural features for the purposes of agreement, and therefore it controls plural morphology on the verb.

- (240) a. [DisjP [Does Lindsay_{SG} ~~sing~~] or [~~does~~ Angela_{SG} sing]]? AltQ
 b. Do [DisjP [Lindsay or Angela]_{PL}] sing? PolQ

Winans suggests in passing this connection between disjunction heights and verbal agreement, but she does not present a full analysis of the phenomenon. In this section, I seek to further develop the idea that differences in disjunctive agreement morphology can be attributed to differences in disjunct size. Ultimately, I will argue that the approach is untenable.

Beyond just the domain of questions, the idea that disjunction size may affect agreement morphology also offers promise for analyzing scope asymmetries that correlate with disjunctive agreement like those discussed in Section 2.2. For example, singular-agreeing disjunction, but not plural-agreeing disjunction, can take wide existential scope out of an embedded clause (241) and out of a conditional antecedent (242).

(241) *Wide-scope disjunction from embedded clause*

- a. Ann believes that the table or the shelf **is** arriving tomorrow. $\checkmark \exists > \text{believe}$
- b. Ann believes that the table or the shelf **are** arriving tomorrow. $*\exists > \text{believe}$

(242) *Wide-scope disjunction from conditional antecedent*

- a. If Emma or Sandy **scores** 100 on the quiz, the class will get extra recess. $\checkmark \exists > \text{if}$
- b. If Emma or Sandy **score** 100 on the quiz, the class will get extra recess. $*\exists > \text{if}$

The idea that singular-agreeing disjunction involves disjunction of large constituents offers a straightforward way of deriving wide-scope readings in (241a) and (242a). In particular, suppose that the scope of disjunction can be read directly off the syntactic structure of a sentence, by examining whether the disjunction occurs above or below the semantic operator of interest. Then a disjunction of sufficiently large syntactic units — where each disjunct repeats a particular semantic operator — will yield a wide-scope reading of disjunction over that operator. On the other hand, if smaller units are disjoined beneath the operator, then wide-scope disjunction will be impossible.

We formalize the height-of-disjunction analysis by adopting the following assumptions:

(243) *Assumptions for height-of-disjunction analysis of disjunctive agreement*

- a. Disjunction is clause-bounded in the scope
- b. Plural-agreeing disjunction results (only) from agreement with disjoined DPs

The first assumption, we can attribute to existential closure applied at the event level (Kratzer 1998; Zimmermann 2007; Krifka and Modarresi 2016). The second assumption can be understood in terms of feature resolution within the disjunction phrase, where combining the singular number feature of each disjunct yields a plural number feature for the disjunction as a whole (Smith et al. 2018; Krifka and Modarresi 2024). Feature resolution only produces plural number when the disjunction is at the DP level, so that the DisjP occupies the syntactic position within the sentence of an element that is valued for number.

Given these assumptions, we can then derive both the ungrammaticality of wide-scope disjunction for the sentences with plural disjunctive agreement, (241b) and (242b), and the possibility of wide-scope disjunction for the sentences with singular disjunctive agreement, (241a) and (242a). Since plural agreement is only possible with low disjunction, i.e., disjunction at the DP level, the structure for the sentences with plural agreement, (241b) and (242b), must be as in (244):

- (244) a. Ann believes that $[\text{DisjP}[[\text{the table}] \text{ or } [\text{the shelf}]]]_{\text{PL}}$ **are** arriving tomorrow.
 b. If $[\text{DisjP}[\text{Emma}] \text{ or } [\text{Sandy}]]_{\text{PL}}$ **score** 100 on the quiz, the class will get extra recess.

Then, given the assumption (243a) that disjunction cannot take scope beyond the local clause, the existential force of *or* must be below *believe* in (244a) and below *if* in (244b) – blocking a wide-scope disjunction reading.

On the other hand, we can analyze the singular-agreeing disjunction sentences, (241a) and (242a), as involving disjunctions at the matrix CP level, depicted in (245). Each disjunct in (245) contains its own copy of the bolded verb, and agreement of each verb is with the local (singular) subject of its own disjunct. Given the structures in (245), wide-scope disjunction readings are expected, because disjunction is above *believe* in (245a) and above *if* in (245b).

- (245) a. $[\text{DisjP}[\text{Ann believes that the table } \textbf{is arriving tomorrow}] \text{ or } [\text{Ann believes that the shelf } \textbf{is arriving tomorrow}]]$.
 b. $[\text{DisjP}[\text{If Emma } \textbf{scores 100 on the quiz, the class will get extra recess}] \text{ or } [\text{if Sandy } \textbf{scores 100 on the quiz, the class will get extra recess}]]$.

Thus, our analysis successfully derives the agreement asymmetry observed for wide-scope existential readings between singular and plural disjunctive agreement. Directing our attention to the other half of the paradigm discussed in Section 2.2, we now ensure that narrow scope disjunction readings are available with both singular and plural disjunctive agreement.

(246) *Narrow scope within embedded clause*

- a. Ann believes that the table or the shelf **is** arriving tomorrow. ✓believe > ∃
- b. Ann believes that the table or the shelf **are** arriving tomorrow. ✓believe > ∃

(247) *Narrow scope within conditional antecedent*

- a. If Emma or Sandy **scores** 100 on the quiz, the class will get extra recess. ✓if > ∃
- b. If Emma or Sandy **score** 100 on the quiz, the class will get extra recess. ✓if > ∃

Let us begin with the sentences that have plural disjunctive agreement. Under our assumptions, the only possible structures for (246b) and (247b) in which disjunction controls plural agreement are the ones in (244), where disjunction is at the DP level. Given that disjunction is at the DP level, our assumption in (243a) enforces that disjunction takes scope within the embedded clause in (246b) and within the conditional antecedent in (247b) — yielding the observed narrow-scope reading.

For the narrow-scope readings with singular-agreeing disjunction, (246a) and (247a), several analytical options are available. While we cannot posit the same structures as in (245) — as these give wide-scope disjunction readings — the singular-agreeing disjunction sentences could involve disjunction of TPs, each containing a verb and subject, as shown in (248). In (248), verbal agreement is singular within each disjunct due to the singular subjects, and narrow scope is derived because disjunction is within the CP where existential scope occurs.

- (248) a. Ann believes that [the table ~~is arriving tomorrow~~] or [the shelf **is** arriving tomorrow].
- b. If [Emma ~~scores 100 on the quiz~~] or [Sandy **scores** 100 on the quiz], the class will get extra recess.

Alternatively, we might hypothesize that feature resolution within the disjunction is optional; if feature resolution does not occur, then agreement targeting the disjunctive subject is singular.

Under this assumption, a coordination of DPs could also control singular agreement, either through closest disjunct agreement or through agreeing with a single disjunct, such that (249) is the structure for a singular-agreeing disjunction sentence with narrow-scope readings.

- (249) a. Ann believes that [_{DisjP}[the table] or [the shelf]] **is** arriving tomorrow.
 b. If [_{DisjP}[Emma] or [Sandy]] **scores** 100 on the quiz, the class will get extra recess.

We might also explore differences in the agreement mechanism, tweaking the assumption in (243b) so that plural-agreeing disjunction results from agreement with both disjuncts while singular-agreeing disjunction results from agreement with just one.

I argue that choice of how to analyze narrow-scope readings with singular disjunctive agreement within a height-of-disjunction framework turns out to be inconsequential, because our attempt to account for the distributional differences in disjunctive agreement through an analysis based on height of disjunction is ultimately futile.

Several problems arise. Starting on the theoretical side: This kind of approach obscures connections between indefinites and disjunctions. In this section, we have analyzed wide-scope disjunction readings as involving disjunction of large structural units each involving repeated material, such that when disjunction takes local scope, that scope is above operators that are repeated in each disjunct. But as has been well noted, the kind of wide-/exceptional-scope readings that we have been studying with disjunction also occur for indefinites (Rooth and Partee 1982; Schlenker 2006; Charlow 2014). With disjunction, it is possible to achieve wide scope by disjoining elements of the necessary size, but such an approach will not carry over to indefinites, where quantification is over a domain whose elements are not individually specified.

The other connection to indefinites that we lose with the height-of-disjunction approach is the relation to NPI licensing environments. Given the similarities between the restricted environments of plural-agreeing disjunction and the restricted environments of NPIs (see Section 4.2.1), an analysis of disjunctive agreement with clear parallels to NPI-licensing approaches —

such as the discourse referent-based approach presented in Section 5.1 or Ivlieva's alternatives-based approach discussed in Section 5.2 — seems more appealing. It is difficult to see how the height-of-disjunction analysis discussed in this section could generalize to NPI licensing.

Another issue for the height-of-disjunction approach is the problem of linearization. To prevent plural-agreeing disjunctions from taking wide scope, we adopted the assumption in (243a) that disjunction must take scope in its local clause. As a result, to derive the wide-scope disjunction readings with singular-agreeing disjunction like in (241a) and (242a), we needed to propose disjunction of very large constituents, as in (245). Due to the size of disjuncts and the position of pronounced vs. covert elements, material must be deleted from both the left and the right disjuncts in order to produce the observed surface string. For example, (245a) involves deletion of *is arriving tomorrow* in the left conjunct, and *Ann believes that* in the right conjunct. Perhaps we could analyze the deletion operation as some combination of leftward across-the-board movement of *Ann believes that*, with right-node-raising of *is arriving tomorrow*. However, this is not a well-motivated combination of operations, and is unlike other known ellipsis operations.

Suppose, though, that some combination of syntactic and phonological operations could delete exactly the right phonological material in (245) to yield the observed surface strings. In this case, we would expect this same combination of operations to be possible for the analogous conjunction structures obtained by replacing *or* with *and*. That is, we would expect the sentences in (250) — in which conjunctive subjects control verbal agreement — to be grammatical with singular verbal morphology, based on the structures and phonological deletion operations shown in (251). This prediction is incorrect; the conjunctive subjects in (250) obligatorily control plural agreement.

- (250) a. Ann believes that the table and the shelf **are**/***is** arriving tomorrow.
 b. If Emma and Sandy **score**/***scores** 100 on the quiz, the class will get extra recess.

- (251) a. [ConjP[Ann believes that the table ~~is arriving tomorrow~~] and [Ann believes that the shelf **is** arriving tomorrow]].
- b. [ConjP[If Emma ~~scores 100 on the quiz, the class will get extra recess~~] and [if Sandy **scores** 100 on the quiz, the class will get extra recess]].

Finally, and most definitively as I see it, our height-of disjunction approach has no way of accounting for intermediate scope readings of the kind we saw in Section 2.3, where plural-agreeing disjunction outscopes one potential licenser but still falls within the scope of a second licenser. To see this, let us consider again (252), repeated from (74b):

- (252) If Marv denied that Suzy or Faye **were** cheating, he's delusional. ✓if > $\exists$ > deny

Given the plural agreement, our assumption (243b) means that in (252), disjunction must be at the DP level, as in (253):

- (253) If Marv denied that [DisjP[Suzy] or [Faye]]_{PL} **were** cheating, he's delusional.

But then, according to assumption (243a), disjunction must take existential scope in its local clause of (253), i.e., beneath *deny*. This is also a valid reading of (252) — one that means that Marv is delusional if he denies both that Suzy was cheating and that Faye was cheating — but different from the reading we are after — that Marv is delusional so long as there is one person among Suzy and Faye who he denies was cheating. The height-of-disjunction has no way to produce the intermediate scope reading of (252).

More abstractly: The height-of-disjunction approach is well-suited to capture an empirical pattern where plural-agreeing disjunction takes obligatory narrow scope, but this is not the pattern that we see. This failure to produce intermediate scope readings is also the pitfall of other approaches we might also pursue, including the homophony approach discussed in the next section.

5.4 Homophony between different lexical disjoiners

In this section, we consider the hypothesis that the difference between singular and plural disjunctive agreement can be localized to the disjunction word itself. That is, English, Russian, and other languages that display similar patterns in disjunctive agreement each have two homophonous disjunction words, which we shall call *or-SG* and *or-PL*. According to this hypothesis, *or-SG* and *or-PL* are homophonous, though they endow their DisjPs with different number features: a DisjP headed by *or-SG* is unmarked for number — and therefore controls singular verbal agreement via closest disjunct agreement or agreement with both disjuncts — while a DisjP headed by *or-PL* has plural syntactic number. Moreover, since *or-SG* and *or-PL* are distinct lexical items, they have different semantics; it is this difference in semantics that explains the difference in distribution between singular and plural disjunctive agreement.

Cross-linguistically, a number of languages have multiple disjunction words with different semantic properties and distributions. Many languages have different disjunction words in polar vs. alternative questions (Alonso-Ovalle 2006; Biezma and Rawlins 2015 and citations therein); other languages have multiple words to express disjunction in declarative sentences (Spector 2014, Weerasooriya 2017, Dawson 2020, O’Rollins et al. 2024, see also Section 2.7). An example from Tiwa is given in (254), which shows that the two different disjunction words, *khí* and *ba*, lead to two different disjunctive meanings.

(254) ‘Sonali didn’t meet Mansing or Milton.’

a. Sonali [Mansing **khí** Milton] -go lak mán-ya-m.

Sonali Mansing or Milton -ACC meet-NEG-PST

✓Either Sonali didn’t meet Mansing, or she didn’t meet Milton (but the speaker can’t remember who).

*Sonali met neither Mansing nor Milton.

b. Sonali [Mansing **ba** Milton] -go lak mán-ya-m.

Sonali Mansing or Milton -ACC meet-NEG-PST

*Either Sonali didn't meet Mansing, or she didn't meet Milton (but the speaker can't remember who).

✓Sonali met neither Mansing nor Milton. (Dawson 2019:2)

Perhaps English also has two disjunction words, which just happen to be homophonous.

Appealing to homophony gives a straightforward way to account for the different agreement possibilities: Sentences with singular-agreeing disjunction have *or*-SG, and sentences with plural-agreeing disjunction have *or*-PL. More difficult is the question of what semantics to propose for *or*-SG and *or*-PL to derive their differing distributions.

To propose a semantics for *or*-SG and *or*-PL, we could take as a starting point the observation that singular-agreeing disjunction is possible in alternative questions, while plural-agreeing disjunction is not (see Section 2.4). Following analyses that derive alternative questions via upward propagation of alternative sets introduced by disjunctions (von Stechow 1991; Biezma and Rawlins 2012, 2015), we might propose that the difference between singular-agreeing disjunction and plural-agreeing disjunction is simply that *or*-SG introduces alternative sets, while *or*-PL does not.

Indeed, suppose that *or*-PL does not introduce alternative sets. Then we can immediately explain plural-agreeing disjunction's unavailability in alternative questions. Simply: *or*-PL does introduce alternative sets; and alternative questions are formed from alternative sets; thus, *or*-PL does not introduce the right kind of semantic object needed to form alternative questions. Rather than introducing alternative sets, let us assume that *or*-PL introduces logical disjunction, represented by a generalized quantifier that ranges over the two disjuncts. Thus for *or*-SG and *or*-PL we have the following denotations:

- (255) a. $\llbracket or\text{-}sg \rrbracket = \lambda x \in D_e. \lambda y \in D_e. \{x, y\}$
 b. $\llbracket or\text{-}pl \rrbracket = \lambda x \in D_e. \lambda y \in D_e. \lambda f \in D_{\langle e, t \rangle}. \exists z \in \{x, y\} [f(z)]$

At first glance, the idea that *or*-SG introduces alternative sets, while *or*-PL does not, appears to be useful in deriving scope asymmetries. In particular, alternatives have been invoked as a way of deriving disjunction’s exceptional scope properties, independent of the facts regarding verbal agreement (Charlow 2014, 2020). And indeed, singular-agreeing disjunction seems to display all the same exceptional scope properties as non-agreeing disjunction, including the ability to take existential scope out of conditionals, embedded clauses, and comparatives (see Chapter 2) — as do disjunctions of plurals (see Chapter 3.3), which would correctly be predicted to control plural agreement if disjoined using *or*-SG, under the analysis we are pursuing in the present section. Corresponding sentences with plural-agreeing disjunction do not exhibit the same exceptional scope properties; as shown in Section 2.2, sentences with plural-agreeing disjunction admit only narrow-scope existential reading relatives to this same set of operators. Under the assumption that *or*-PL acts as a generalized quantifier, the obligatory narrow scope of plural-agreeing disjunction follows from limitations on Quantifier Raising (Chomsky 1975; May 1977; Ruys and Winter 2011; Dayal 2013).

Applying the argumentation of alternative-based analyses of disjunction, we therefore have a tidy explanation for the asymmetry shown in (256), where singular-agreeing disjunction can scope above attitude predicates but plural-agreeing disjunction cannot. For the sentences with singular disjunctive agreement, exceptional scope is available because *or*-SG introduces alternatives, which allow disjunction to percolate upward through clause boundaries (Kratzer and Shimoyama 2002). *or*-SG can thus take pseudo-scope above another semantic operator by being ‘flattened’ (via existential quantification) after the alternative sets introduced by disjunction have percolated upward past the operator in question. For the sentences with plural disjunctive agreement, this mechanism is not available: *or*-PL introduces logical disjunction over its two disjuncts, and disjunctions created by *or*-PL are ‘trapped’ in the clause where they are introduced.

- (256) a. John doubts that Maria or Suzy **are** coming. ✓ $\exists > \text{doubt}$
 b. John doubts that Maria or Suzy **are** coming. * $\exists > \text{doubt}$

As with the height-of-disjunction approach discussed in Section 5.3, the homophony approach explored in the present section encounters issues for intermediate scope readings such as those in (252). In order to prevent *or*-PL from taking wide scope above *doubt* in (256b), we appealed to a generalized quantifier lexical entry for *or*-PL, coupled with limitations on QR. These same restrictions, though, force *or*-PL to take narrow scope beneath *deny* in (252).

- (252) If Marv denied that Suzy or Faye **were** cheating, he's delusional. ✓if $> \exists > \text{deny}$

If we were to instead relax the restriction on scope-taking for *or*-PL such that disjunction can scope above *deny* in (252), we would predict that (256b) will be true under a wide-scope reading, contrary to fact.

The homophony approach, I argue, is untenable — at least the one outlined in (255), and similar approaches that rely on syntactic conditions to restrict *or*-PL's distribution.

I conclude this section by discussing one other kind of homophony-based approach. Rather than saying that *or*-SG introduces alternative sets while *or*-PL introduces logical disjunction, we could instead pursue an analytical approach similar to the one argued for in Section 5.1, again seeking to incorporate the similarities discussed in Section 4.1 between semantic environments that license plural disjunctive agreement and semantic environments that block discourse anaphora. In Section 5.1, we attributed differences in the properties of singular-agreeing vs. plural-agreeing disjunction to a head X external to the disjunction, which is responsible for both plural agreement and the semantic properties of plural-agreeing disjunction. Under the proposal in Section 5.1, the DisjP itself has the same structure, between singular-agreeing and plural-agreeing disjunction; it is the presence or absence of X which determines the empirical signature of the disjunction.

Rather than attributing plural-agreeing disjunction's unusual empirical profile (relative to that of other disjunctions) to the head X, we might consider that the properties which we attributed

to X in Section 5.1 are instead properties of *or*-PL. That is, *or*-SG behaves like the disjunction morpheme discussed in Section 5.1 — in that it introduces a variable and restricts that variable to range over the two disjuncts — and *or*-PL encodes both the features of *or* and the features of X within a single head. According to this proposal, *or*-PL: 1) introduces a variable; 2) restricts that variable to range over the two disjuncts along with their sum; and 3) specifies a condition that the variable it introduces may not belong to the highest DRS. Moreover, a DisjP headed by *or*-PL has plural syntactic number, for the purposes of agreement.

In terms of empirical coverage, I do not see any fatal issues with this latter homophony-based analysis; as far as I can tell, it derives all the same empirical divides for disjunctive agreement that the proposal with X presented in Section 5.1 does. Adjudicating between the homophony-based analysis and the X-based analysis therefore becomes a matter of theoretical preference: Do we endow two homophonous disjunction heads each with a complex semantics, where certain portions of the denotation happen to be in common between them? Or do we factor out the commonalities into a single disjunction head, and localize the differences to a distinct head X? I believe that the latter approach is more appealing.

One type of data which might distinguish the two hypotheses is whether X can be detected in non-disjunction contexts, as I discuss in Section 5.1.6. Assembling a fuller cross-linguistic picture of disjunctive agreement would also help distinguish between the two hypotheses by allowing us to better understand the dimensions of possible variation across languages. I am hopeful that this dissertation sets the stage for future work in this direction.

Chapter 6

Disjunctive agreement in matrix clauses

Until this point in the dissertation, we have largely focused on singular-agreeing disjunction and plural-agreeing disjunction's interactions with other semantic operators within a sentence. In Chapter 2, we showed that plural-agreeing disjunction — unlike other disjunctions — has particular licensing requirements with respect to where it can take scope. In particular, disjunctive agreement in English obeys, more or less, the same restriction described for Russian by Ivlieva (2012, 2013):

(257) *Ivlieva's Generalization* (adapted from Ivlieva 2013)

A disjoined SG-SG nominal can only control plural agreement when its existential force applies within a polar question, a downward-entailing environment, or within the scope of a quantifier.

In Chapter 5, we accounted for (257) through a restriction on how disjunctions that control plural agreement introduce discourse referents into the context. In this chapter, we expand the scope of inquiry to disjunctive sentences devoid of operators like those listed in (257). That is, rather than sentences like (258) where disjunction coexists with an embedding verb, a quantifier, or a question operator, we consider in this chapter sentences such as (259), where no such operator is present.

- (258) a. Maria doesn't think that Tess or Rae **is/are** coming.
 b. Whenever Tess or Rae **comes/come**, Maria leaves.
 c. **Is/Are** Tess or Rae coming?

(259) Tess or Rae **is/are** coming.

We have seen glimpses of sentences like (259) throughout the dissertation; some of the discussion in Chapter 3, for example, implicitly assumes that sentences like (259) are grammatical. In this chapter, I show that verbal agreement in apparently simple disjunctive sentences like (259) is in fact quite complicated, empirically. On the analytical side, I discuss additional machinery which is needed to reconcile the grammaticality of plural agreement in (259) with Ivlieva's Generalization as stated in (257).

6.1 A challenge for Ivlieva's Generalization

The generalization in (257) predicts plural-agreeing disjunction to be ungrammatical in matrix clauses with no apparent quantification such as (260), which Ivlieva takes to be desirable:¹

(260) Petja ili Vasja **prišël-∅/*-i**.

Petja or Vasja came-SG/-PL

'Petja or Vasja came.'

(Ivlieva 2013:101)

However, this prediction — though successful at explaining (260) — runs into a rather fundamental empirical hurdle: In language after language, matrix clauses with no apparent quantification allow both singular and plural agreement with disjoined singular nominals. Some examples are shown below:

¹See also Smith et al. (2018:459) for a similar empirical claim about English.

(261) a. *Somali*

Wiilka ama ninku {waa uu **ordayaa** / waa ay **ordaan** }.

boy.SG or man.SG he run.PROG.3SG / they run.3PL

‘The boy or the man run.’ (Himmelreich et al. 2021)

b. *Turkish*

Çocuk veya adam **koşuyor-Ø/lar**.

boy.SG or man.SG run-3/PL

‘The boy or the man run.’ (Himmelreich et al. 2021)

c. *Greek (Flouraki and Kazana 2009; Kazana 2011)²*

To agori i to koritsi {**prospathi** na katastili / **prospathun** na

the.SG boy.SG or the.SG girl.SG try.SG to suppress / try.PL to

katastilun} ta sinestimata.

suppress the feelings

‘The boy or the girl tries/try to suppress the feelings.’ (Kazana 2011:178)

d. *German (Himmelreich and Hartmann 2023; Krifka and Modarresi 2024)*

Das Regal oder der Tisch **wird/werden** morgen geliefert.

the shelf or the table is/are tomorrow delivered

‘The shelf or the table will be delivered tomorrow.’

(Himmelreich and Hartmann 2023:2)

²In a survey of 20 speakers, Kazana found that some participants accepted only singular agreement; some accepted only plural agreement; and some accepted both. I discuss the inter-speaker variation reported in past studies in Section 6.2. For now, I take this as evidence that both singular and plural agreement are grammatical.

e. *French (Mouret 2007; An and Abeillé 2021)*

Jean ou Maria **viendr-a/-ont**.

Jean or Marie will.come-SG/-PL

‘Jean or Marie will come.’

(Mouret 2007:172)

f. *Italian (Foppolo and Staub 2020)*³

Il neurologo o lo psichiatra **ha/hanna** esaminato le cartelle

the neurologist or the psychiatrist have.SG/have.PL examined the records

cliniche ieri.

medical yesterday

‘The neurologist or the psychiatrist reviewed the medical records yesterday.’

(Foppolo and Staub 2020:Supp. materials)

The sentences in (261) – which include data from a relatively diverse set of languages – seem to be counterexamples to the generalization in (257): They contain no overt quantification or downward-entailing operator, yet both singular and plural agreement are judged to be acceptable.

A possible explanation for the divergence between (260) and (261) is that there are simply language-specific differences between Russian and other languages, such that unquantified, un-negated matrix-clause usages of plural-agreeing disjunction are ruled out in Russian but not other languages. There are reasons to believe that the ungrammaticality of plural-agreeing disjunction in (260) does not tell the full story for Russian, either. For one, as noted below, Russian allows plural-agreeing disjunction in generic constructions (see also Ivlieva 2013:103, citing Skoblikova 1959).

³See Foppolo and Staub (2020)’s supplemental materials, available at: https://osf.io/qf2tk/?view_only=4fb145d06e61407fb7447fbde710246e. As presented here, (261f) somewhat simplifies Foppolo and Staub (2020)’s experimental results. To be more precise: In an acceptability rating task, participants were presented with sentences such as (261f), involving a disjunctive subject controlling either singular or plural verbal agreement. For all but three sentences (out of 94), at least one participant rated the sentence as acceptable (6 or 7 on a 7-point scale). I take this as evidence that both singular and plural agreement are available for speakers, given a suitable interpretation; thus the data presentation in (261f).

(262) Malejšaja iskra ili peregrev **vlekuť** za soboj katastrofu.
 slightest spark.SG or overheating.SG drag.PL behind REFL catastrophe

‘The slightest spark or overheating lead to a catastrophe.’ (Crockett 1976:297)

Second, an anonymous Russian-speaking NELS reviewer — in response to the data that I discuss in this chapter — reports that unquantified, un-negated matrix clause occurrences of plural-agreeing disjunction are acceptable in at least some instances. In particular, the context in (263) makes plural-agreeing disjunction acceptable in Russian:

(263) **Context:** *A is giving a talk, and B is an audience member.*

A: I’ll wait until everyone’s here before I start presenting. Anyone we’re waiting on?

B: Mary or John **are** coming.

However — even admitting the possibility that Russian may behave differently from other languages, such that sentences like those in (261) are ungrammatical in Russian with plural-agreeing disjunction — we have seen in Chapter 2 that the generalization in (257) also does well to explain the English data across a number of paradigms, with parallels in German, Spanish, and Romanian as well. Given the preponderance of languages that do allow plural disjunctive agreement in unquantified, un-negated matrix clauses, I therefore seek in this chapter to reconcile the widely reported acceptability of plural-agreeing disjunction in such clauses with the generalization in (257) that we defended in Chapter 2.

To begin, let us recognize that some of the sentences in (261) involve constructions that have independently been argued to involve covert quantification. For example, (261a)–(261c) are glossed as habitual sentences. Ivlieva (2013:103), citing Skoblikova (1959) and Crockett (1976), notes that Russian, too, allows plural-agreeing disjunction in generic statements. Habituality — and genericity more broadly — is widely analyzed to involve quantification (Schubert and Pelletier 1989; Wilkinson 1991; Krifka et al. 1995). (261d) and (261e) involve future tense, which is commonly argued to involve modality, i.e., quantification over worlds (Enç 1996; Copley 2002;

Klecha 2014; Giannakidou and Mari 2017). For sentences involving covert quantification in the form of genericity or modality, the acceptability of plural-agreeing disjunction is immediately predicted by Ivlieva’s Generalization, (257).

Sentences like (261f), or its English counterpart in (264), pose more of a challenge for (257). Both (261f) and (264) are past tense and non-habitual – ruling out the sources of quantification that we invoked to understand (261a)–(261e). Yet still, plural agreement is acceptable.

(264) The neurologist or the psychiatrist **has/have** examined the medical records.

If we are to maintain (257) as a generalization for the distribution of plural disjunctive agreement, we will need some way to account for the acceptability of sentences like (261f) and (264). I argue in this chapter that we can account for the acceptability of such sentences using covert modal quantification.

To contextualize the discussion, I begin by reviewing past studies’ findings and proposals regarding alternation in agreement forms (Section 6.2). We see that past studies on English disjunctive agreement have found that while both singular and plural agreement are possible with disjoined SG-SG subjects, speakers exhibit unstable and sometimes contradictory judgments – posing a significant challenge for past investigations. In Section 6.3, I relate this inconsistency in judgments to the role of context in mediating acceptability judgments for disjunctive sentences. Finally, in Sections 6.4 and 6.5, I demonstrate how two kinds of covert modality – epistemic modality and teleological modality – can license plural disjunctive agreement in seemingly unquantified, upward-entailing environments, given an appropriate context.

6.2 Past studies: Inter- and intra-speaker variation

Drawing on data such as those in (261), several analyses have sought to derive patterns of free variation in verbal agreement involving disjunctive agreement. Himmelreich and Hartmann (2023), based on German data, propose a system involving two different kinds of syntactic number

features, both of which can be targeted by agreement. Krifka and Modarresi (2024) propose that singular agreement reflects semantic agreement (enforced via presupposition), while plural agreement reflects syntactic agreement (via feature matching). In both systems, singular and plural agreement both are options made available by the grammar for disjunctions of singular nominals – without restrictions on when each agreement form may occur.

If (261) were the extent of the pattern, then perhaps such analyses would be on the right track. However, there are several reasons to believe that singular-agreeing and plural-agreeing disjunction are not in free variation. For one, as discussed in Chapter 2, singular-agreeing and plural-agreeing disjunction pattern differently with respect to other sentential operators; without further stipulations restricting in what contexts the various agreement operations proposed by Himmelreich and Hartmann and by Krifka and Modarresi may apply, these analyses cannot derive the distribution patterns that we observe.

Second, even when no sentential operators are present besides disjunction, presenting data as I have in (261) obfuscates nuances in inter- and intra-speaker variation that surface repeatedly in previous studies on disjunctive agreement. In particular, for many sentences with disjunctive subjects, speakers report inconsistent judgments about the acceptability of each agreement form. Past studies illustrate this tendency in several different ways, which I detail below.

6.2.1 Peterson (1986)

Peterson (1986) – using a forced-choice task where participants had to indicate whether singular agreement, plural agreement, both, or neither were acceptable for a given sentence with a disjunctive subject – reports that for both (265a) and (265b), certain speakers required singular agreement while other speakers required plural agreement. For (265a), some speakers allowed both agreement forms.

- (265) a. A rabbit or a goat **has/have** eaten all my lettuces.
- b. Either John or Bill **is/are** responsible for this mess.

In a forced-choice task for Modern Greek, Kazana (2011, see especially Appendix B) also found inconsistencies between speakers about whether singular, plural, or both agreement forms were acceptable for various sentences with disjunctive subjects.

6.2.2 Eggert (2002)

Eggert (2002) – using a different kind of forced-choice task, where participants had to indicate their preference for singular versus plural agreement for a given sentence with a disjunctive subject – found that, for over two-thirds of the disjunctive sentences given to multiple participants, divergent preferences were observed between the participants. That is, for over two-thirds of sentences tested, some speakers preferred singular agreement, while others preferred plural agreement for the same sentence.

Further, speakers were not consistent within themselves: The same speaker might prefer singular agreement for one sentence, but plural agreement for a very similar sentence. For example, one speaker preferred singular agreement in (266a) but plural agreement in (266b). In isolation, the reported asymmetry between (266a) and (266b) might be attributed to differences between the predicates *going to* vs. *sure to*. However, a different speaker gave judgments exhibiting precisely the opposite asymmetry – preferring plural agreement in (266c) and singular agreement in (266d).

- (266) a. Grant, Gertrude, or Carmine **is/are** going to tell a joke.
- b. Grant, Gertrude, or Carmine **is/are** sure to tell a joke.
- c. Abigail, Grant, Gertrude, or Carmine **is/are** going to sing Beatrice's solo in her place.
- d. Grant, Gertrude, or Carmine **is/are** sure to sing Beatrice's solo in her place.

In Eggert’s study, participants who were presented with the same sentence multiple times often indicated inconsistent preferences across their responses for the same sentence (Eggert 2002:177). For instance, a certain participant indicated a preference for singular agreement in (267a) one time, and a preference for plural agreement another time. A different participant indicated contradictory preferences for (267b).

- (267) a. If you need any help, Grant or Gertrude **is/are** here.
- b. If you’re looking for somebody smart, Grant or Gertrude always **gets/get** good grades.

Perhaps, though, the forced-choice task used by Eggert may not be the best approach for probing the variability in agreement. Suppose that both singular and plural agreement are fully acceptable with disjunctive subjects, as suggested by (261) and derived by Himmelreich and Hartmann (2023) and Krifka and Modarresi (2024). In this case, the forced-choice paradigm would still require participants to indicate a preference for one agreement form over another. Forced to make such a choice when in fact both forms are acceptable, participants might, understandably, provide inconsistent responses. Eggert (2002:175) explains that his study design was chosen precisely because he found that speakers have a difficult time assigning acceptability judgments to disjunctive sentences, and find the task of indicating a preference more approachable; however, we would do well to consider this alternative explanation of the data.

6.2.3 Foppolo and Staub (2020)

This alternative explanation — that the inconsistency in speaker preferences documented by Eggert’s study owes to ambivalence by participants — becomes increasingly unlikely once we consider Foppolo and Staub (2020), which asked participants for graded acceptability judgments for disjunctive sentences with varying forms of agreement.⁴ Examining the raw data from Foppolo and Staub (2020)’s experiment, we see sharp contrasts in acceptability for seemingly similar

⁴See Experiments 2, 4, and 5 for English; and Experiment 7 for Italian.

sentences — both across speakers, for the very same sentence; and across sentences, for the very same speaker.⁵

Turning first to inter-speaker variation for the same sentence, we find a number of sentences where one participant rated the sentence as acceptable, while another rated the sentence as unacceptable. This inter-speaker inconsistency is observed for both singular-agreeing and plural-agreeing disjunction. For example, (268a) and (268b) both received, from different participants, a rating of 1 and of 7 on a 7-point acceptability scale. Similarly for the plural counterparts of these same sentences: Both (269a) and (269b) received ratings of 2/7 and 7/7 from different participants.

- (268) a. The bear or the elephant **is** performing in today's show. (Exp. 4, Item 8a)
b. Robert or Cleo **is** chewing my very last piece of gum. (Exp. 5, Item 11c)
- (269) a. The bear or the elephant **are** performing in today's show. (Exp. 4, Item 8b)
b. Robert or Cleo **are** chewing my very last piece of gum. (Exp. 5, Item 11d)

Though speakers offered differing judgments for the sentences in (268)–(269), the observed variation in judgments cannot be entirely attributed to differences between different speakers' grammars. That is, we cannot account for all the observed variation by positing that some speakers' grammars consistently require singular agreement for disjoined singular subjects, and other speakers' grammars consistently require plural agreement for disjoined singular subjects. Though I do not rule out differences in preferred agreement forms across speakers, I argue that this cannot be the whole story. Indeed, examining speaker-level data from Foppolo and Staub (2020)'s study, we find speakers who offer inconsistent judgments across different sentences with the same agreement form. That is, a given speaker may judge one sentence with singular disjunctive agreement as fully acceptable but might reject a different sentence that also has singular disjunctive agreement.

For example, the same participant who rated (268b) a 1/7 in acceptability rated a different

⁵Foppolo and Staub's raw data are available at: https://osf.io/qf2tk/?view_only=4fb145d06e61407fb7447fbde710246e. The data reported in (268)–(273) are from these materials.

singular-agreeing disjunction sentence, (270), as fully acceptable (7/7). A different participant rated the singular-agreement sentence (271a) a 2/7 in acceptability and a different singular-agreement sentence, (271b), a 7/7. There are no discernable structural differences between (268b) and (270), or between (271a) and (271b), that we would expect to lead to a difference in agreement morphology.

(270) Buddy or Fido **is** going to win ‘best in show’ this year. (Exp. 5, Item 15c)

(271) a. The cinema or the bowling alley **is** going out of business. (Exp. 5, Item 7a)

b. Buddy or Fido **is** barking so loudly the neighbors can hear. (Exp. 5, Item 15a)

This same kind of intra-speaker variation is found in sentences where disjunctive subjects control plural agreement. For instance, the same speaker who rated (269b) a 2/7 rated a different plural-agreeing disjunction sentence, (272), a 7/7. For a different participant, sentences (273a) and (273b) received acceptability ratings of 2/7 and 7/7, respectively. As with the pairs of sentences with singular disjunctive agreement that we considered above, (269b) and (272) do not differ linguistically in ways which would explain a difference in agreement morphology, nor do (273a) and (273b).

(272) Bossa nova or reggae **are** going to be on my playlist for the party tonight.
(Exp. 5, Item 5b)

(273) a. Ellen or Grace **are** going to borrow my fanciest dress to wear to the gala tonight.
(Exp. 5, Item 2d)

b. The ice rink or the movie theater **are** going to be the destination of our first date.

(Exp. 5, Item 14d)

To summarize the past studies on disjunctive agreement, the empirical pattern is not one of free variation. Rather, singular-agreeing and plural-agreeing disjunction are both attested, but across a number of different tasks, speakers exhibit inconsistent preferences and judgments regarding the acceptability of each form. This pattern of inter- and intra-speaker variation and

seeming instability is consistent with English speakers I have consulted.

6.2.4 Disjunctive agreement as a ‘grammatical lacuna’

Faced with the messiness of the data in this domain, a common approach in the literature has been to postulate that the syntax does not determine any verbal agreement form in a sentence with disjunction. For instance, Morgan (1972) and Reis (1974) suggest a division between ‘core rules of grammar’ and ‘patch-up rules’. Core rules dictate how grammatical mechanisms (i.e., agreement, in our case) work for simple cases within a language. When faced with a sentence or construction beyond what is covered by the core rules – or in situations where the core rules apply contradictory pressures – a speaker must use patch-up rules to resolve the under-determined elements of the sentence ad-hoc. Morgan and Reis argue that agreement with disjunction falls into the realm of patch-up rules, a stance echoed by Peterson (1986, 2004). Eggert (2002) proposes a system where various ‘weighted constraints’ may be given more or less importance by different speakers in different contexts.⁶

More recently, Foppolo and Staub (2020:19) conclude that their study supports ‘the claim that agreement with disjunction is an unusual, perhaps unique, grammatical lacuna’. Lyskawa (2021) argues that verbal agreement with coordinations in general (i.e., not just disjunctions) is ‘grammar-external’, resulting from a configuration where multiple ϕ -features are copied to the same head within the syntax. According to Lyskawa, determining which agreement form to use with a given coordination is a matter of performance, rather than of competence, in the sense of Chomsky (1965).

The motivation behind these kinds of approaches is to explain why verbal agreement varies so much with disjointed subjects – much more so than with analogous sentences featuring conjoined

⁶In total, Eggert’s system consists of 12 weighted constraints. The constraints include: *A verb should agree in grammatical number with its syntactic subject*; *A verb should agree in grammatical number with the first NP head of its syntactic subject*; *If a predicate has a disjunctive argument for its subject, it should be unspecified in number*; and *A verb should be marked plural if its syntactic subject consists of more than two NP heads*. For further details, see Chapter 4 of Eggert (2002).

or non-coordinated subjects. Since speakers exhibit unstable judgments — across sentences, and for the same sentence both relative to other speakers and even to themselves — the temptation is to conclude that speakers’ grammars are not telling them what to do, and that accordingly, speakers must re-figure-out which agreement form to use each time, on the fly.

I’ve argued in Chapters 2–5 that verbal agreement with disjunctive subjects is far from a ‘grammatical lacuna’ — it can be characterized empirically via Ivlieva’s Generalization and derived using formal analytical tools. In this chapter, therefore, I seek to extend the analysis I have presented to data involving (unquantified) matrix-clause disjunctive subjects. The approach I pursue is as follows: When testing for acceptability with disjunctive agreement, we must carefully control for the context in which the target sentence is uttered. I argue that once we take context into account, we find that singular and plural disjunctive agreement follow predictable patterns in unquantified, un-negated matrix clauses. Thus, after arguing in Chapter 2 that singular disjunctive agreement and plural disjunctive agreement differ in predictable ways in their interactions with other sentential operators, I now make the same kind of argument using pragmatic contexts.

6.3 Disjunction and context

Typical contexts that allow unembedded disjunction are those involving a certain amount of incomplete information on the part of the speaker. To illustrate, let us consider the simple disjunctive utterance (274).

(274) Mary or Sue came.

On one hand, a person uttering (274) must have enough information to know that someone came; moreover, they must know that the set of people who came includes at least one of Mary and Sue. On the other hand, a person uttering (274) also cannot have too much information: If the speaker were to know that only Mary came, or know that only Sue came, it would be more cooperative to say so. Similarly, a cooperative speaker who knows that both Mary and Sue came

would be expected to say so explicitly, e.g., by using conjunction (see also discussion in Eckardt 2007).⁷

Consistent with the requirement that disjunction be supported by a particular epistemic state, speakers tend to rate disjunction as less acceptable than conjunction in rating studies. For example, Clifton and Frazier (2016, 2018) find that speakers rate sentences like (275a) significantly worse than sentences like (275b), in terms of acceptability.

- (275) a. Jeff or Brayden objected to the new policy.
b. Jeff and Brayden objected to the new policy. (Clifton and Frazier 2018:1484)

Further, when evidence — such as *there's an old computer in the trashcan* in (276) — is made explicit that might support a speaker epistemic state with incomplete information, the acceptability penalty for disjunction (versus conjunction) decreases (Clifton and Frazier 2018).

- (276) a. There's an old computer in the trashcan. Sam or Phil bought a new computer.
b. There's an old computer in the trashcan. Sam and Phil bought a new computer.
(Clifton and Frazier 2018:Supp. materials)

Considering the epistemic requirements surrounding felicitous uses of disjunction gives us an entry point into understanding the variability in agreement forms that has been reported by past studies on disjunctive agreement. These past studies have tended to present sentences involving one agreement form or another out-of-the-blue, and then to ask speakers to judge the sentences. Presented with any sentence and asked whether (or to what degree) it sounds natural, a speaker must conjure up a context that would support the utterance of the sentence in question (see also Eggert 2002:231). Thus, a low acceptability rating — or an acceptability judgment of ‘unacceptable’ — does not necessarily indicate that a sentence is ungrammatical; a negative judgment is also consistent with the sentence being grammatical (i.e., generable by the grammar), but the speaker failing to imagine a context that makes the sentence felicitous. To this end, Matthewson (2004)

⁷In Section 6.5, we consider another kind of context that allows disjunction, even when the speaker knows that both disjuncts satisfy the predicate.

cautions against asking speakers for judgments on sentences out-of-the-blue when conducting semantic fieldwork. Instead, she argues for presenting sentences in enriched pragmatic contexts, when asking for judgments.

Attention to context will be needed for all sentences involving disjunction, but for the investigation of disjunctive agreement — where we are interested in the acceptability of two forms which might plausibly compete — the potential influence of context goes even further. Suppose that singular disjunctive agreement but not plural disjunctive agreement is acceptable in context c_1 , and that plural disjunctive agreement but not singular disjunctive agreement is acceptable in context c_2 . When presented with a sentence where a disjunctive subject controls agreement, and asked to judge which agreement form(s) is/are acceptable, a speaker imagining context c_1 would provide one judgment while a speaker imagining context c_2 would provide an opposite judgment. If a speaker imagined context c_1 one day, it is entirely possible that they might imagine context c_2 the next day, and return a conflicting judgement. In this way, different contextual information supporting different forms of agreement can go a long way toward explaining the inter- and intra-speaker variation in reported judgments found by previous studies (see Section 6.2). In the next two sections, we shall see concrete examples of context sensitivity affecting the acceptability of different agreement forms.

To be clear, I am not the first to suggest that context plays a role in determining whether a particular agreement form is judged as acceptable by speakers. References to the contexts in which a particular disjunctive sentence might be uttered — or alternatively, what meaning(s) that sentence might be intended to convey — can be seen, for example, in Eggert (2002), Kazana (2011), and Lyskawa (2021). However, none of the previous studies have attempted to systematically isolate and manipulate pragmatic context as a variable, in order to study how context affects the availability of various agreement forms. In the rest of this chapter, I seek to do just that.

6.4 Epistemic uncertainty

We first consider contexts where disjunction conveys epistemic uncertainty on the part of the speaker. (277) gives one context where plural disjunctive agreement is acceptable. Notice that singular disjunctive agreement is also acceptable in the same context.

(277) **Context:** *‘Boisterous group’. Alf and Bea are hosting a joint birthday party. Bea looks down the street and sees a group approaching. The group is too far away to make out any faces, but based on how boisterous the group is, Bea infers that among the group must be Dee or Fey. Both Dee and Fey are Alf’s friends. Bea says:*

- a. ✓Look, Alf! Dee or Fey **is** coming.
- b. ✓Look, Alf! Dee or Fey **are** coming.

The sentence in (277b) does not appear to contain any operator that would license plural disjunctive agreement, yet is judged acceptable by speakers. Seemingly, this violates Ivlieva’s Generalization, (257).

6.4.1 Licensing via covert epistemic modality

In order to explain the acceptability of (277b), I propose that it contains a covert epistemic modal MOD, which quantifies over epistemically accessible worlds for the speaker:⁸

$$(278) \quad \llbracket \text{MOD}(p) \rrbracket^c = \lambda w. \forall w' \in \mathcal{A}_{\text{epist}}(c_{\text{spkr}})(w) [p(w')]$$

where $\mathcal{A}_{\text{epist}}(x)(w) = \{w' \mid w' \text{ is epistemically accessible to } x \text{ from } w\}$

My proposal that assertions are epistemically modalized is by no means novel; it has its roots in Hintikka (1962)’s K operator (see also Williamson 1996, Meyer 2013), and has been used to analyze empirical phenomena including such as free choice (Alonso-Ovalle and Menéndez-Benito 2010)

⁸See Alonso-Ovalle and Menéndez-Benito (2010:8) for evidence that MOD (which they call ASSERT) can in some instances quantify over the context set, rather than the speaker’s belief state.

and epistemic indefinites (Kratzer and Shimoyama 2002). Specific to disjunction, an assertoric knowledge/belief modal is discussed by Gazdar (1979) and Sauerland (2004), among others.

The idea that disjunctions may be implicitly modalized is intuitive: A speaker using disjunction is unsure which of the disjunctive alternatives verifies the proposition (otherwise they should just name the correct alternative). What epistemic modality does is provide a plurality of worlds such that in some worlds, one disjunct verifies the proposition, and in other worlds, the other disjunct does.

Using MOD, we can give the following denotation for (277b):

$$\begin{aligned}
 (279) \quad & \llbracket (277b) \rrbracket^c \\
 &= \llbracket \text{MOD}(\text{Dee or Fey are coming}) \rrbracket^c \\
 &= \lambda w. \forall w' \in \mathcal{A}_{\text{epist}}(c_{\text{spkr}})(w) [\exists x \in \{d, f\} [\text{coming}(x)(w')]] \\
 &\text{where } \mathcal{A}_{\text{epist}}(x)(w) = \{w' \mid w' \text{ is epistemically accessible to } x \text{ from } w\}
 \end{aligned}$$

In (279), plural-agreeing disjunction takes existential scope beneath the universal quantification supplied by MOD; thus, availing ourselves of covert epistemic modality in the form of MOD allows us to derive the acceptability of (277b) while maintaining Ivlieva's Generalization (257).

Notice, though, that covert epistemic modality cannot license plural disjunctive agreement in all contexts. Consider a different context, (280), with the same target utterances:

(280) **Context:** *'Unrecognized guest'. Alf and Bea are hosting a joint birthday party. Each knows almost all of the other's guests, though Alf has invited two friends, Dee and Fey, who Bea has never met. There's a knock at the door, and Bea opens it to find a guest who she doesn't recognize. Since Bea knows all her own guests and all but two of Alf's, she infers that the person she's looking at is Dee or Fey. She yells to Alf:*

- a. ✓ Alf! Dee or Fey **is** here!
- b. ??/# Alf! Dee or Fey **are** here!

In the context (280), singular agreement is acceptable, but plural agreement is highly marked, if not completely unacceptable. Changing the context, we see, affects which disjunctive agreement forms are available. The pair of contexts (277) and (280), therefore, serves a concrete demonstration of the idea I had alluded to in Sections 6.2 and 6.3: By controlling for context, we can draw out a contrast that is not captured by a simple out-of-the-blue acceptability judgment task.

Before discussing what may be responsible for the contrast between this context pair in terms of the acceptability of plural disjunctive agreement, let us first consider another context pair where we observe a similar contrast occurring. This second pair of contexts — modeled after those used by Alonso-Ovalle and Menéndez-Benito (2003) in analyzing the Spanish epistemic indefinite *algún* (see Section 6.4.5) — is given in (281).

- (281) a. **Context:** ‘Office’. *Betty and Connie are outside the office where the Math department’s three algebraists — Alexander, Saul, and Raphael — are meeting. Suddenly, Betty and Connie hear music coming out of the office and sounds that unequivocally indicate that someone is dancing on the table to the music.*
- b. **Context:** ‘Lounge’. *Betty and Connie are in the Math department lounge. They know that the only people who use the lounge’s coffee machine are the department’s three algebraists, Alexander, Saul, and Raphael. Betty and Connie see the three algebraists talking around the coffee machine, but they can’t recognize who is who. All of a sudden, a burst of Brazilian music starts to play. One of the algebraists climbs onto the table and starts dancing. Unbeknownst to Betty and Connie, it’s Alexander.*

For this context pair, the disjunctive utterances of interest are those in (282). Just like in the ‘Boisterous group’ vs. ‘Unrecognized guest’ contexts, we observe a difference in acceptability for the sentence with plural disjunctive agreement, (282b), between the ‘Lounge’ and ‘Office’ contexts in (281). Again, singular agreement is acceptable in both contexts.

- (282) a. (Look!/Listen!) Alexander, Saul, or Raphael **is** dancing on the table!
✓ in (281a), ✓ in (281b)
- b. (Look!/Listen!) Alexander, Saul, or Raphael **are** dancing on the table!
✓ in (281a), * in (281a)

I attribute the difference in acceptability of plural agreement between (277) and (280), and between (281a) and (281b), as stemming from the (im)possibility of the covert epistemic modal MOD, which — as I will discuss in the next subsection — depends on context.

6.4.2 Restrictions on MOD

The reason for MOD's unavailability in certain contexts, I argue, is rooted in evidential requirements. Given that MOD is an epistemic modal, that MOD might be sensitive to the speaker's evidence would be very much consistent with how other epistemic modals are known to behave. Epistemic *must*, for instance, requires that the speaker have indirect evidence for the proposition being asserted (Karttunen 1972:12), as demonstrated by the contrast between (283) and (284), from von Fintel and Gillies (2010):

- (283) **Context:** *Billy looks out the window and sees pouring rain.*
- a. It's raining.
- b. ??It must be raining. (von Fintel and Gillies 2010:353)
- (284) **Context:** *Billy sees people coming in from outside with wet umbrellas, slickers, and galoshes. She knows that rain is the only explanation.*
- a. It's raining.
- b. It must be raining. (von Fintel and Gillies 2010:353)

Further, Winans (2016) argues that epistemic *will* requires both indirect evidence for the asserted proposition *p* and that *p* cannot be the cause behind the speaker's evidence for asserting

will p. These requirements are demonstrated in (285) and (286). In (285), the smoke that Angela observes is caused by the proposition in question (i.e., that the neighbors are barbecuing); and thus epistemic *will* is infelicitous. On the other hand, the neighbors' barbecue is not the cause of the day being Friday in (286); so epistemic *will* is acceptable.

(285) **Context:** *Angela knows that her neighbors barbecue often. A friend is over to her house and they both smell something smoky. Angela says:*

#The neighbors will be barbecuing (right now). (Winans 2016:26)

(286) **Context:** *Angela and Matt know that their neighbors barbecue every Friday night. Angela and Matt are out of town, and Angela realizes it's Friday night. She says:*

The neighbors will be barbecuing (right now). (Winans 2016:30)

More generally, von Stechow and Gillies (2010:367) propose that all epistemic modals are incompatible with direct evidence; see also Matthewson et al. (2007) for the connection between evidentiality and modality.

Thus, I argue that MOD is not freely occurring; to be felicitous, MOD requires that certain evidential conditions be met. Characterizing precisely these evidential conditions remains a formidable task; for the time being, we attribute the infelicity of plural agreement in the 'Unrecognized guests' and 'Lounge' contexts to MOD requiring that the speaker have only indirect evidence for the proposition that MOD embeds. We shall see, though, in Sections 6.4.2.1 and 6.4.5, that direct vs. indirect evidence may not be quite the right distinction.

In cases where the evidential conditions for MOD are not met — such as in the 'Unrecognized guest' and 'Lounge' contexts, (280) and (281b) — MOD cannot be used. Accordingly, plural disjunctive agreement is unacceptable in these contexts, consistent with Ivlieva's Generalization. In these contexts, the non-modalized versions of the target sentences are still possible, so long as MOD is not needed as a licenser. That is, since singular disjunctive agreement is not subject to the same licensing restrictions that plural disjunctive agreement is (see Chapter 2), the singular-agreement

counterparts (282a) and (289a) of the unacceptable sentences with plural disjunctive agreement are perfectly acceptable in these same contexts.

Evidence of MOD's fleetingness can also be found in the epistemic indefinites literature. In a remark that recalls the inter-speaker variation seen with matrix occurrences of plural-agreeing disjunction (see Section 6.2) — Alonso-Ovalle and Menéndez-Benito (2003:fn. 7) report that some, but not all, speakers accept sentences like (287a) where *algún* appears without overt quantification. Other speakers require explicit modalization, as in (287b).

- (287) a. %María está saliendo con **algún chico del departamento de**
 Mary is going out with ALGÚN guy of the department of
lingüística.
 linguistics
- b. Creo/ Probablemente/ Sé/ Parece que María está saliendo con
 I believe/ Probably/ I know/ It seems that Mary is going out with
algún chico del departamento de lingüística.
 ALGÚN guy of the department of linguistics

(Alonso-Ovalle and Menéndez-Benito 2003:8–9)

In regards to (287a), Alonso-Ovalle and Menéndez-Benito note that ‘it seems that some speakers can recover the implicit modalization more easily than others’. If implicit modalization is indeed less available for some speakers, and if implicit modalization — as we have argued — is necessary for licensing instances of plural disjunctive agreement that are otherwise unlicensed, then we would expect that the ease/difficulty with which speakers can access the implicit modality (i.e., recover the MOD operator) would contribute to the observed variance in acceptability for plural disjunctive agreement sentences that lack other overt operators. Indeed, difficulty for some speakers in accessing MOD would be consistent with Foppolo and Staub (2020)’s finding that plural-agreeing disjunction sentences with no other operators — while still acceptable — receive lower

acceptability ratings than those where plural disjunctive agreement appears under some other (overt) operator — whether the other operator is sentential embedding, conditional, or negation. Curiously, mentions of the inter-speaker variation with *algún* are absent from subsequent work after Alonso-Ovalle and Menéndez-Benito (2003), as far as I know; subsequent literature proceeds with the assumption that unembedded *algún* as in (287a) is fully acceptable. I speculate that this change may reflect authors’ findings that given the right context, speakers are willing to accept these kinds of sentences.

6.4.2.1 Alternative to licensing by MOD: Uniqueness hypothesis

As an alternative to the idea that the difference between the ‘Boisterous group’ vs. ‘Unrecognized guest’ and ‘Office’ vs. ‘Lounge’ contexts — i.e., (277) vs. (280) and (281a) vs. (281b) — is the possibility vs. impossibility of MOD due to evidential restrictions, we might hypothesize instead that the differentiating factor in these context pairs is whether the speaker knows that a unique individual verifies the proposition. Let us call this the ‘uniqueness hypothesis’. For example, in the ‘Lounge’ context, the speaker can see with their own eyes that only one person is dancing on the table, whereas in the ‘Office’ context, the speaker has no visual evidence. Given what the speaker knows in the ‘Office’ context, perhaps multiple professors are dancing on the table. According to the uniqueness hypothesis, it is the possibility, in the speaker’s mind, that both Dee and Fey are coming in (277) — or, in (281a), that multiple professors are dancing — which makes plural disjunctive agreement acceptable in these contexts. On the flip side, plural disjunctive agreement is unacceptable in the ‘Unrecognized guest’ context because the speaker’s visual evidence indicates that exactly one of Dee and Fey is at the door.

I argue against the uniqueness hypothesis. Besides losing the connection with Ivlieva’s Generalization in terms of licensing via quantification, the uniqueness hypothesis is challenged by context pairs such as (288), inspired by Slade (2015) and Alonso-Ovalle and Menéndez-Benito (2017)’s work on epistemic indefinites. We consider the two utterances in (289) with respect to

these contexts. The contexts in (288) do not differ in how many people could be at the door according to the speaker's evidence; in both contexts, visual evidence supports there being exactly one. Instead, they differ in how clearly the speaker can see the person standing at the door. When testing which agreement forms are possible, we find that for the 'Clear vision' context, (288b), plural disjunctive agreement is not possible. However, for the 'Blurry vision' context, at least some speakers accept plural agreement. As in the other contexts considered in this chapter, singular agreement is acceptable in both (288a) and (288b).

(288) a. **Context:** 'Blurry vision'. Alf and Bea are in a room with a frosted glass door. Unbeknownst to Bea, Alf asked Cris and Dell to come as well. Someone comes to the door and knocks. From the silhouette, Alf and Bea can tell that a single person is standing at the door. However, the features of the person outside are obscured by the frosted glass. Alf says: (289a)/(289b)

b. **Context:** 'Clear vision'. Alf and Bea are in a room with a clear glass door. Unbeknownst to Bea, Alf asked Cris and Dell to come as well. Neither Alf nor Bea has met Cris or Dell, so they do not know how either looks. Someone comes to the door and knocks. From inside, Alf and Bea can clearly see the person at the door, but Alf is unsure whether it is Cris or Dell. Alf says: (289a)/(289b)

(289) a. Can you get the door? Cris or Dell **is** outside. ✓ in (288a), ✓ in (288b)

b. Can you get the door? Cris or Dell **are** outside. % in (288a), * in (288b)

In the 'Blurry vision' context (288a), the speaker can see that there is (exactly) one person at the door, yet plural disjunctive agreement is still acceptable for some speakers; thus the uniqueness hypothesis cannot be maintained. The difference between the 'Blurry vision' and 'Clear vision' contexts is not about whether the evidence supports there being a unique individual who makes the disjunctive claim true; rather, the difference is more about the nature of the evidence available to the speaker. As for the English speakers who reject plural-agreeing disjunction in (288a) — what constitutes direct vs. indirect evidence seems to be context-dependent and might depend on

the speaker (von Fintel and Gillies 2010:369–370); and it is plausible that speakers evaluate the evidence specified in the context (288a) differently.

With respect to evidential conditions on MOD, the ‘Blurry vision’ vs. ‘Clear vision’ contexts challenge the idea that what MOD requires is (only) indirect evidence. Though defining direct vs. indirect evidence is difficult (see von Fintel and Gillies 2010 for further discussion), the evidence in (288a) and (288b) is arguably the same in terms of how ‘direct’ it is; in both contexts, the speaker has direct visual evidence that exactly one person is at the door, as well as contextual knowledge that the person at the door must be Cris or Dell. Yet plural disjunctive agreement is acceptable in one but not both of the contexts.

Further evidence against the uniqueness hypothesis comes from Foppolo and Staub (2020)’s experimental study. They find that even for predicates chosen specifically to be ‘exclusive’ — i.e., predicates for which real-world knowledge dictates that the predicate can only hold of a single individual in any given world, such as *be chewing my very last piece of gum* — speakers still accept plural disjunctive agreement. That speakers are willing to accept plural disjunctive agreement for predicates that cannot be true of more than one individual indicates that the relevant distinction for plural disjunctive agreement does not reduce to the number of real-world witnesses supported by a speaker’s evidence.

Summarizing what we have seen thus far in Section 6.4: Positing a covert epistemic modal MOD allows us to retain Ivlieva’s Generalization for apparently unlicensed instances of plural disjunctive agreement — and further, helps us account for why certain contexts may allow vs. disallow plural disjunctive agreement. Further, we have highlighted how potential difficulties in recovering MOD as well as restrictions on MOD’s distribution might be at least partially responsible for the varying acceptability that speakers report for sentences involving plural disjunctive agreement. In the next subsection, we consider another empirical domain where MOD offers analytical advantages: the interaction between plural disjunctive agreement and sluicing.

6.4.3 Sluicing and MOD

Further support for the claim that covert modality is responsible for licensing plural disjunctive agreement in otherwise unquantified, un-negated matrix clauses comes from sluicing. We saw in Chapter 2 that sluicing is unavailable in sentences where plural disjunctive agreement occurs beneath attitude predicates or in the nuclear scope of *every*.

Eggert (2002) shows that sluicing blocks the possibility of plural disjunctive agreement in unquantified, un-negated matrix clauses, as well. As a starting point, note that (290a) and (290b), which contain singular and plural disjunctive agreement, respectively, are both acceptable when no sluice is present. However, continuing the utterances with the ignorance sluice *I can't remember which one* renders plural disjunctive agreement unacceptable (290d). Singular disjunctive agreement, on the other hand, tolerates a sluice (290c).

- (290) a. If you need somebody smart, Gertrude or Grant **gets** good grades.
b. If you need somebody smart, Gertrude or Grant **get** good grades.
c. If you need somebody smart, Gertrude or Grant **gets** good grades. But I can't remember which one.
d. #If you need somebody smart, Gertrude or Grant **get** good grades. But I can't remember which one. (Eggert 2002:225, 232)

To round out the paradigm, we note that disjunction in non-agreeing positions also tolerates sluicing. A complete paradigm is shown in (291), with singular-agreeing disjunction, plural-agreeing disjunction, and non-agreeing disjunction. We see that singular-agreeing disjunction patterns with non-agreeing disjunction, just like with the scope properties in Chapter 2.

- (291) **Context:** *We are planning a party and trying to decide what kind of food to order. Possible options include pizza, sandwiches, and sushi. Among the expected attendees are Mary, Sue, and Ellen. Speaker is a friend of Mary and Sue. Speaker says:*

- a. Mary or Sue **likes** pizza, but I forget which.
- b. Mary or Sue **like** pizza, #but I forget which.
- c. Mary likes pizza or sushi, but I forget which.

I argue that our proposal that apparently unquantified sentences with plural disjunctive agreement are covertly modalized via MOD allows us to make sense of the asymmetry seen in (290) and (291). In line with the argumentation thus far, let us assume that (290b) and (291b) without the sluice are acceptable only insofar as they are covertly modalized by MOD. MOD introduces universal quantification. Therefore, given that disjunction introduces existential quantification, there are two scope configurations we might consider: One configuration where disjunction takes narrow scope, and one configuration where disjunction takes wide scope.

I argue that both configurations are ruled out, explaining (290d) and (291b)'s unacceptability. First let us consider the narrow-scope disjunction reading, where disjunction takes existential scope beneath the universal quantification introduced by MOD. Here, we encounter a semantic restriction imposed independently by sluicing: Sluicing requires a prejacent where existential quantification takes widest scope (Chung et al. 1995:255). For instance, (292a) and (292b) allow both narrow and wide existential scope for the indefinite; (292a) is consistent with readings two readings: one reading where every student attended a different seminar, perhaps with their respective favorite professor; and another reading where there's a particular seminar — say, 'The Williams Cycle' — such that every student attended that seminar. Once a sluice is added, however, the narrow-scope readings of the prejacent become unavailable. That is, the prejacent of (292c) only has the interpretation 'there is some seminar such that every student attended that seminar', and the prejacent of (292d) only has the interpretation 'there is some movie such that John didn't see that movie'.

- (292) a. Every student attended a seminar. $\checkmark \forall > \exists, \checkmark \exists > \forall$
 b. John didn't see a movie. $\checkmark \neg > \exists, \checkmark \exists > \neg$
 c. Every student attended a seminar, but I'm not sure which. $*\forall > \exists, \checkmark \exists > \forall$
 d. John didn't see a movie, but I'm not sure which. $*\neg > \exists, \checkmark \exists > \neg$

In the case of plural-agreeing disjunction taking existential scope under MOD, then, the condition on sluicing that the prejacent must have an existential that takes widest scope is not met. Thus the narrow-scope configuration is ungrammatical.

So let us now consider the other scope configuration, where plural-agreeing disjunction takes wide existential scope. This scope configuration does include a prejacent that satisfies the conditions needed for sluicing. However, if disjunction takes wide existential scope over the modal quantification introduced by MOD, then Ivlieva's Generalization is not satisfied; for MOD to alleviate violations of Ivlieva's Generalization for otherwise unlicensed occurrences of plural disjunctive agreement, the disjunction must take existential scope below MOD.

When sluicing is present, therefore, both the scope configurations between MOD and plural-agreeing disjunction are ungrammatical for different reasons — deriving the overall ungrammaticality for sentences like (291b).

Ivlieva (2013) reports that in Russian, sluicing restricts the possibility of plural disjunctive agreement in a similar fashion. The sentence in (293a), which has no sluice, is grammatical with both singular and plural agreement. With a sluice, only singular agreement is permissible (293b).

- (293) a. Každyj vtornik Bill ili Fred **prihodil-Ø/i** k Saše.
 every Tuesday Bill or Fred came-SG/PL to Sasha
 'Every Tuesday Bill or Fred came to Sasha.'

(Ivlieva 2012:382)

- b. Každýj vtornik Bill ili Fred **prixodil-∅/-*i** k Saše — ja ne pomnju
 every Tuesday Bill or Fred came-SG-PL to Sasha I NEG remember
 kto imenno.
 who exactly

‘Every Tuesday Bill or Fred came to Sasha, but I don’t remember who exactly.’

(Ivlieva 2012:382)

As with the English examples, (293b) involves an interaction between universal quantification (‘every Tuesday’) and the existential quantification introduced by disjunction. If plural-agreeing disjunction takes narrow scope beneath universal quantification, then sluicing fails because its semantic requirement is not met. And if plural-agreeing disjunction takes wide scope above universal quantification, it is unlicensed and thus in violation of Ivlieva’s Generalization. In (293a), no sluicing is present, so plural-agreeing disjunction can take narrow scope without any issue.

Sluicing in German also exhibits a similar behavior, in that it significantly degrades plural disjunctive agreement that is otherwise fully acceptable, but does not have the same effect with singular disjunctive agreement:

- (294) a. Das Regel oder der Tisch **wird/werden** morgen geliefert.
 the shelf or the table is/are tomorrow delivered

‘The shelf or the table will be delivered tomorrow.’

(Himmelreich and Hartmann 2023:2)

- b. Der rote Tisch oder der blaue Tisch **wird/??werden** morgen geliefert,
 the red table or the blue table is/are tomorrow delivered
 aber ich weiß nicht mehr, welcher.
 but I know not anymore which

‘The red table or the blue table will be delivered tomorrow, but I can’t remember which.’
 (Stefan Keine, p.c.)

Let us take a moment to summarize our discussion of MOD thus far. As with any silent element in language, it is impossible to fully prove that MOD is present in a sentence. I hope, however, to have presented a number of arguments that MOD's presence can neatly unite otherwise disjoint empirical observations regarding disjunctive agreement. In particular, positing the presence of a covert epistemic modal operator: 1) offers an explanation as to why plural disjunctive agreement can appear in unquantified, upward-entailing matrix clauses, seemingly in violation of Ivlieva's Generalization; 2) allows us to understand how the acceptability of plural disjunctive agreement is sensitive to context, providing the added benefit of now being able to account for the variation in judgments reported by past studies on disjunctive agreement; and 3) explains why sluicing follow-ups are ungrammatical for sentences with plural disjunctive agreement, given independently known properties of sluicing. For other arguments for the existence of MOD, see Chierchia (2006), Alonso-Ovalle and Menéndez-Benito (2010), and Meyer (2013).

6.4.4 Exceptional scope and MOD

Given that we have proposed the existence of a covert epistemic modal operator MOD that can satisfy the licensing requirement for plural disjunctive agreement, a new issue arises, in relation to the scope phenomena discussed in Chapter 2. Recall our discussion of sentences such as (295), repeated from (79). We noted in Chapter 2 that sentences like (295a) do not allow a wide-scope existential reading of disjunction where *or* takes scope above *tell* in the matrix clause. Rather, only a narrow-scope disjunction reading exists for (295a).

We argued previously that the scope asymmetry in (295a) is expected under Ivlieva's Generalization: In the narrow-scope reading, the embedding verb *tell* provides the quantification required for licensing plural disjunctive agreement; whereas in a wide-scope reading, *or* takes scope above *tell*, and thus is unlicensed, resulting in ungrammaticality. Finally, we noted that when imperative force — which we analyzed as encoding deontic modality — is present, as in (295b), then disjunction can take scope in the matrix clause, since deontic modality encoded by

the imperative provides a suitable licensing environment for plural-agreeing disjunction to take existential scope.

- (295) a. Mom told Little Junior that Grandma or Grandpa **are** coming.

✓tell > ∃ (speaker is uncertain about what Mom said)

*∃ > tell (*intended*: Mom is uncertain about who is coming)

- b. *Advice to calm down a crying toddler*: Tell Little Junior that Grandma or Grandpa **are** coming.

✓□ > ∃ > tell (choose a grandparent x , and tell Junior that x is coming)

In this chapter, however, we have argued that – in some sentences, at least – a covert epistemic modal MOD can provide the quantification needed to license plural disjunctive agreement in the absence of any other licenser. Given the above claim attributing plural-agreeing disjunction’s ability to take scope out of the embedded clause in (295b) to the presence of the imperative as a licenser, we would expect, by a parallel argument, that plural-agreeing disjunction should be able to take matrix scope above *tell* in (295a), given the possibility of MOD as a licenser. That is, if ‘within an imperative’ and ‘under the scope of the modal operator MOD’ are both environments where plural disjunctive agreement is licensed, then, all else equal, they should have similar abilities to license exceptional scope.

The problematic configuration is shown in (296):

- (296) Mom told Little Junior that Grandma or Grandpa **are** coming.

Not available: MOD > ∃ > tell

Why is the configuration shown in (296) not possible, while the configuration shown in (295b) is?

I consider two ways we might account for the unavailability of a wide-scope disjunction reading in (296). The first option we might consider relates to processing challenges. Stepping back from

disjunctive agreement, inverse-scope readings with multiple quantifiers are independently known to be dispreferred relative to surface-scope readings (Gil 1982, Kurtzman and MacDonald 1993, Anderson 2004, a.o.). A number of works (e.g., Anderson 2004; Reinhart 2006; Tanaka 2015; Wurmbrand 2018) have argued that inverse-scope readings are more computationally costly to process than surface-scope readings.

Let us suppose that accessing the MOD operator has an associated processing cost, and that this cost is greater than the cost associated with other possible licensors of plural-agreeing disjunction — as suggested by MOD’s degraded ability to license plural-agreeing disjunction, compared to other operators (Foppolo and Staub 2020; see also Alonso-Ovalle and Menéndez-Benito 2003:fn. 7 for parallels in the licensing of Spanish *algún*). This seems like a reasonable assumption given our suggestion that MOD is sometimes, but not always, present in a disjunctive declarative sentence, whereas an operator like the imperative in (295) has overt morphosyntactic reflexes. According to the processing-cost hypothesis, speakers are able to access MOD in the absence of inverse-scope readings, given a suitable context. However, inverse scope and MOD together within the same sentence are too computationally costly, ruling out exceptional scope in a sentence such as (296). If the processing story I present is on the right track, we would expect that an increased computational cost to MOD will be detectable by experimental work. I leave this as an issue for future research.

The other possibility is that speakers reject wide-scope disjunction readings in sentences like (296) for reasons of context. As we have seen, licensing by MOD is not always possible. When asked to judge a wide-scope disjunction reading like in (296), a speaker might envision a scenario where evidential restrictions do not support the usage of MOD, and thus judge plural agreement to be unacceptable. On the other hand, in the same context, singular agreement would be judged acceptable, since it does not require licensing in the same way.

The way to test this hypothesis is to manipulate the context used when testing for the wide-scope disjunction reading, similar to how we did earlier this chapter. To test whether MOD can

license exceptional wide scope of disjunction over a comparative, for example, we can consider the two contexts in (297). Both contexts are constructed to draw out a wide-scope reading of disjunction over the comparative, but they differ on the speaker's evidence that supports their assertion. We find that — like in the 'Office' vs. 'Lounge' contexts where whether the speaker has direct visual evidence or not affects the acceptability of plural agreement — the sentence with plural disjunctive agreement (298a) is unacceptable in (297b) but improves in (297a). As expected, the counterpart sentence with singular agreement, (298b), is acceptable in both contexts.

- (297) a. **Context:** *Sam is visiting a relative's house. The relative has three dogs — Lily, Manny and Bruin — who Sam has never met before, though he knows their names. Not having seen the dogs, Sam observes three dog food bowls of different sizes: a medium one, labeled 'Lily', and a small and a large one that are both unlabeled. Assuming that each dog gets their own food bowl, but not knowing whose is the small vs. big bowl, Sam remarks: (298a)/(298b)*
- b. **Context:** *Sam is visiting a relative's house. The relative has three dogs — Lily, Manny, and Bruin — who Sam has never met before, though he knows their names. Upon seeing the dogs, Sam recognizes Lily (who is gray) but isn't sure who is who between Manny (who is white) and Bruin (who is brown). Sam is watching the dogs eat, and observes that the brown dog gets more food than Lily, while the white dog gets less food than Lily. Sam remarks: (298a)/(298b)*
- (298) a. Lily gets more food than Manny or Bruin **do**. ✓/? in (297a), # in (297b)
- b. Lily gets more food than Manny or Bruin **does**. ✓ in (297a), ✓ in (297b)

The data in (297)–(298) indicate that disjunction can, given the right context, outscope the comparative even without a higher overt licenser present — raising the possibility that some of the other exceptional scope readings we described as impossible in Chapter 2 may actually be possible, if an appropriate context can be provided that supports licensing by MOD. Constructing contexts like (297a) is difficult, though, and for some sentences — such as (296) — exceedingly

awkward.

Constructing more of these test contexts, which will facilitate further evaluation of this second hypothesis regarding the unacceptability of exceptional scope in (296), will be aided by better understanding the conditions under which MOD can and cannot be present — an issue that also appears relevant to the study of epistemic indefinites, as we discuss in the next subsection.

6.4.5 Comparison with epistemic indefinites

In this subsection we compare the distribution of plural disjunctive agreement with that of epistemic indefinites. In one sense, the present section can be viewed as picking up the thread from Section 4.2, where other semantically marked indefinites were discussed; we deferred discussion of epistemic indefinites until this point because they fit most naturally beside the present discussion of plural-agreeing disjunction being licensed by epistemic modality.

Epistemic indefinites are indefinites that mark ignorance on the part of the speaker. Examples include *some NP.SG* in English (Strawson 1974), *algún* indefinites in Spanish (Alonso-Ovalle and Menéndez-Benito 2003; Alonso-Ovalle and Menéndez-Benito 2010 et seq.), and *hari-* and *də-* indefinites in Sinhala (Weerasooriya 2017, 2019). The speaker ignorance component encoded by epistemic indefinites can be seen from the infelicity of responses that ask for further identificational information about the witness of the indefinite, as in (299). In contrast, (300) shows that although ordinary (i.e., non-epistemic) indefinites are also *consistent* with speaker ignorance, the ignorance inferences they trigger are not obligatory.⁹

(299) a. A: **Some cabinet minister** has been shot. (Strawson 1974:110)

#B: Who? (Alonso-Ovalle and Menéndez-Benito 2003:1)

b. A: María está tomando **alguna clase de lingüística**.

Mary is taking ALGÚN class of linguistics

⁹In (299c), *-a* is a clause-final morpheme that appears on the verb in declarative sentences (Weerasooriya 2019:8).

B: #¿Cuál?

‘Which one?’ (Alonso-Ovalle and Menéndez-Benito 2003:1-2)

c. A: John **monəwe-hari** biiw-a.

John what-ari drank-A

‘John drank something.’

B: *monəwa-də?

‘What?’ (Weerasooriya 2017:574)

(300) a. A: **A cabinet minister** has been shot.

B: Who? (Alonso-Ovalle and Menéndez-Benito 2003:1)

b. A: María está tomando **una clase de lingüística**.

Mary is taking a class of linguistics

B: ¿Cuál?

‘Which one?’ (Alonso-Ovalle and Menéndez-Benito 2003:1-2)

Observe that in each of (299) and (300), the B-utterance is a sluice — a *wh*-expression followed by TP ellipsis. Recall from Chapter 2, as well as Section 6.4.3, that plural-agreeing disjunction disallows sluicing, whereas singular-agreeing disjunction and non-agreeing disjunction do allow sluicing. We see, therefore, that plural-agreeing disjunction resembles the epistemic indefinites in (299) insofar as both are incompatible with sluicing. Singular-agreeing disjunction and non-agreeing disjunction, on the other hand, pattern with the ordinary indefinites in (300).

Epistemic indefinites also disallow certain follow-ups that supply precisifying information that would contradict an ignorance inference, as seen in (303a). Again, the plain indefinite allows this kind of follow-up (303b).¹⁰

¹⁰On the other hand, we can consider (301):

- (303) a. #María se casó con **algún estudiante del departamento de**
 María SE married with ALGÚN student of the department of

lingüística: en concreto con Pedro.

linguistics namely with Pedro

‘María married a linguistics student, namely Pedro.’

(Alonso-Ovalle and Menéndez-Benito 2010:2)

- b. María se casó con **un estudiante del departamento de**
 María SE married with a student of the department of

lingüística: en concreto con Pedro.

linguistics namely with Pedro

‘María married a linguistics student, namely Pedro.’

(Alonso-Ovalle and Menéndez-Benito 2010:2)

For precisifying follow-ups such as (303), no kind of disjunction — plural-agreeing, singular-agreeing, or non-agreeing — tolerates such precisification, as shown in (304).

- (304) a. #Lenny or Sunny **watches** basketball, namely Lenny.
 b. #Lenny or Sunny **watch** basketball, namely Lenny.
 c. #Lenny watches basketball or baseball, namely basketball.

The unacceptability of the sentences in (304) is hardly surprising, given pragmatic competition

-
- (301) María se casó con **algún estudiante de lingüística.** De hecho, sé
 Mar'ie SE marry.3SG.PST with ALGÚN student of linguistics in fact I know
 exactamente con quién.
 exactly with whom

‘María married a linguistics student. In fact, I know exactly who!’

(Alonso-Ovalle and Menéndez-Benito 2010:14)

I am not sure what to make of the acceptability of (301) vs. the unacceptability of (299)/(303). Adding to the muddled empirical picture, Alonso-Ovalle and Menéndez-Benito (2013:11) give a very similar sentence which does not tolerate the non-ignorance follow-up:

- (302) María sale con **algún estudiante**, #y yo sé quién es.
 María goes out with ALGÚN student and I know who is

‘María is dating some student and I know who.’

(Alonso-Ovalle and Menéndez-Benito 2013:35)

with the non-disjunctive alternative sentences. For example, to be justified in saying *namely basketball* in (304c), the speaker must have knowledge that Lenny watches basketball. If this is the case, then it would be both simpler and more informative to say *Lenny watches basketball* than to say *Lenny watches basketball or baseball*. The same simplicity/informativity asymmetry does not apply with (303b); there are many reasons a speaker might use an indefinite instead of naming the precise individual that verifies the proposition.

A significant difference between plural-agreeing disjunction and epistemic indefinites is their scope behavior with respect to sentential embedding verbs. Recall from Section 2.2.2 that plural-agreeing disjunction takes obligatory narrow scope with respect to embedding verbs (provided no other operators are present in the higher clause; see Section 2.3), as shown in (305) (repeated from (29)):

(305) Ann believes that the table or the shelf **are** arriving tomorrow.

✓believe > $\exists$, * $\exists$ > believe

Unlike plural-agreeing disjunction, epistemic indefinites freely take scope both above and below embedding verbs. (306a) shows a narrow-scope reading for *algún*, while (306b) shows a wide-scope reading. Both readings are available. The same ambiguity exists for German *irgendein* and Italian *un qualche* (Aloni and Port 2010:3).

(306) Pedro piensa que María se casó con **algún estudiante del**
 Pedro thinks that María SE married with ALGÚN student of the
departamento de lingüística.
 department of linguistics

‘Pedro thinks that María married a linguistics student.’

- a. ✓Pedro is uncertain about the identity of the student María married.
- b. ✓There’s a particular student that Pedro thinks María married, but speaker does not know who. (Alonso-Ovalle and Menéndez-Benito 2010:2–3)

We have discussed throughout this dissertation that plural disjunctive agreement requires certain semantic licensing conditions to be satisfied, i.e., the distribution of plural disjunctive agreement follows Ivlieva's Generalization. Though epistemic indefinites differ in that they may scope both above and below clausal embedding verbs, they are also not licensed in all contexts.

With respect to negation, for example, Spanish *algún*, Romanian *vreun*, and Sinhala *hari* cannot be used with clausemate sentential negation (Alonso-Ovalle and Menéndez-Benito 2010:fn. 13; Fălăuș 2014:124; Weerasooriya 2017:576).¹¹ A similar pattern holds for plural disjunctive agreement in Russian (Ivlieva 2013). In English, plural disjunctive agreement is marked when used with clausemate sentential negation, though naturally occurring examples can be found where plural-agreeing disjunction takes scope under matrix negation (for further discussion of disjunctive agreement and negation, see Section 2.5).

- (307) a. Daisy or John **aren't** millionaires yet.

(<https://boards.theforce.net/threads/so-how-much-did-ridley-boyega-make.50038706/>)

- b. Ajax or John **aren't** much compared to Jared.

(<https://teenfic.net/what-can-i-say-hot-chocolate-a-hiking-challenge-and-a-bonfire-634047186.html>)

Moreover, English *neither... nor* allows for both singular and plural disjunctive agreement. When negation is in a higher clause, plural-agreeing disjunction is licensed in both English and Russian, as are the same epistemic indefinites that disallow clausemate negation (Alonso-Ovalle and Menéndez-Benito 2010; Fălăuș 2014; Weerasooriya 2017).

As to whether epistemic indefinites are licensed in positive matrix clauses that lack other operators — i.e., the question we have been seeking to answer, for plural disjunctive agreement, in this chapter — the data are complicated. Romanian *vreun* is not licensed in episodic sentences

¹¹With *hari* and clausemate negation, Weerasooriya reports that an alternative interpretation, where *hari* takes existential scope over negation, is available.

(308), displaying a parallel with what Ivlieva (2012, 2013) reports for Russian plural disjunctive agreement (309) but which differs from other disjunctive agreement data discussed earlier this chapter.

- (308) *Monica s-a întâlnit cu **vreun prieten.**
 Monica REFL-have.3SG met with VREUN friend.MASC
 ‘Monica met a friend.’ (Fălăuș 2014:122)

- (309) Bill ili Fred **prišel-∅/*-i.**
 Bill or Fred came-SG/-PL
 ‘Bill or Fred came.’ (Ivlieva 2012:381)

A number of other epistemic indefinites, including German *irgendein* (Kratzer and Shimoyama 2002), Italian *un qualche* (Aloni and Port 2015), and Tiwa *khí* indefinites (Dawson 2020) can appear in apparently unmodalized non-negated sentences. Alonso-Ovalle and Menéndez-Benito (2003) report inter-speaker variation on the acceptability of Spanish *algún* in such environments, as shown in (310). As far as I am aware, however, this inter-speaker variation is not discussed in subsequent literature on *algún*.

- (310) %María está saliendo con **algún chico del departamento de**
 Mary is going out with ALGÚN guy of the department of
lingüística.
 linguistics.
 ‘Mary is going out with some guy in the linguistics department.’
 (Alonso-Ovalle and Menéndez-Benito 2003:8)

We note a parallel here between inter-speaker variation reported for (310) and the inter-speaker variation in acceptability judgments for sentences like (311) (Peterson 1986; Eggert 2002; Foppolo and Staub 2020; see Section 6.2 for further discussion).

(311) Grant or Gertrude **is/are** going to come to the party.

In terms of sensitivity to evidence and context for unquantified, un-negated matrix-clause occurrences such as (310) and (311), we find striking parallels between those for epistemic indefinites and those for plural-agreeing disjunction. Recall from the discussion earlier in Section 6.4 that whether or not plural disjunctive agreement is acceptable depends on the utterance context, with apparent sensitivity to the speaker's particular evidence supporting their assertion. For example, the same sentence, (312a), is acceptable in the context (312c) but not in the context (312d). The counterpart sentence with singular agreement, (312b), does not exhibit the same sensitivity.

- (312) a. (Look!/Listen!) Alexander, Saul, or Raphael **are** dancing on the table!
✓ in (312c), # in (312d)
- b. (Look!/Listen!) Alexander, Saul, or Raphael **is** dancing on the table!
✓ in (312c), ✓ in (312d)
- c. **Context:** 'Office'. Betty and Connie are outside the office where the Math department's three algebraists — Alexander, Saul, and Raphael — are meeting. Suddenly, Betty and Connie hear music coming out of the office and sounds that unequivocally indicate that a person is dancing on the table to the music.
- d. **Context:** 'Lounge'. Betty and Connie are in the Math department lounge. They know that the only people who use the lounge's coffee machine are the department's three algebraists, Alexander, Saul, and Raphael. Betty and Connie see the three algebraists talking around the coffee machine, but they can't recognize who is who. All of a sudden, a burst of Brazilian music starts to play. One of the algebraists climbs onto the table and starts dancing. Unbeknownst to Betty and Connie, it's Alexander.

Epistemic indefinites appear to be sensitive to context and evidence in the same way that plural disjunctive agreement is in (312); the paradigm in (313) — due to Alonso-Ovalle and Menéndez-Benito (2003) — is in fact what inspired the contexts in (312) in the first place.

- (313) a. ¡Mira! **Algún profesor** está bailando la lambada encima de la mesa.
 look ALGÚN professor is dancing lambada on the table

‘Look! Some professor is dancing on the table.’

✓ in (313b), # in (313c)

- b. **Context:** ‘Office’. *L and P are outside the office where a faculty meeting is being held. Suddenly, they hear lambada music coming out of the office and sounds that unequivocally indicate that a person is dancing to the music.*
- c. **Context:** ‘Lounge’. *L and P are talking in the lounge of the Math department, on one of those long, boring, predictable winter evenings when everybody is doing what they are supposed to. Neither L nor P knows anybody there. All of a sudden, a burst of Brazilian music starts to play in an office. Believe it or not, there is a guy dancing lambada on his desk. Unbeknownst to L and P, the guy is Rino Cusper, the famous statistician.*

(Alonso-Ovalle and Menéndez-Benito 2003)

The similarities in sensitivity to context go further. Alonso-Ovalle and Menéndez-Benito (2017) — following Slade (2015)’s work on Sinhala *hari* — present the context pair in (314) to show that *algún*’s distribution cannot be derived via an antisingleton requirement (contra Alonso-Ovalle and Menéndez-Benito 2010). The contrast between (314b) and (314c) is the same kind of contrast that, in Section 6.4.2, we observed affects the acceptability (for some speakers) of plural disjunctive agreement. The relevant data from above are repeated in (315).

- (314) a. ¡Mira! ¡María está besando a **algún chico**!
 Look! María is kissing A ALGÚN boy

‘Look! Maria is kissing some boy!’

(Alonso-Ovalle and Menéndez-Benito 2017:17)

✓ in (314b), # in (314c)

- b. **Context:** *'Blurry vision'. P looks out the window and sees María kissing a boy. María and the boy are far away. P can see that María is kissing a boy, but she cannot make out the boy's features.*
- c. **Context:** *'Clear vision'. P looks out the window and sees María kissing a boy. P hasn't seen the boy before, but can see him very clearly now.*
- (315) a. Can you get the door? Cris or Dell **are** outside. % in (315b), # in (315c),
- b. **Context:** *'Blurry vision'. A and B are in a room with a frosted glass door. Unbeknownst to B, A asked Cris and Dell to come as well. Someone comes to the door and knocks. From inside, A and B can tell that a single person is standing at the door. However, the features of the person outside are obscured by the frosted glass. A says: (315a)*
- c. **Context:** *'Clear vision'. A and B are in a room with a clear glass door. Unbeknownst to B, A asked Cris and Dell to come as well. Neither A nor B has met Cris or Dell, so they do not know how either looks. Someone comes to the door and knocks. From inside, A and B can clearly see the person at the door, but A is unsure whether it is Cris or Dell. A says: (315a)*

In Sections 6.4.1–6.4.2, we attributed the unacceptability of plural-agreeing disjunction in the 'Lounge' and 'Clear vision' contexts to an evidential restriction on MOD. Precisely characterizing the nature of the evidential restriction has been difficult, but the similarities that we see here offer, I hope, a path forward. We have argued that MOD is one possible licenser for plural disjunctive agreement but that MOD's distribution is restricted; it seems that these same restrictions may also govern the distribution of epistemic indefinites. Indeed, covert epistemic modality has also been invoked to analyze epistemic indefinites (Kratzer and Shimoyama 2002; Alonso-Ovalle and Menéndez-Benito 2010).

As a further argument for attributing the parallels in distribution between plural disjunctive

agreement and epistemic indefinites to both being underlyingly licensed by MOD, we note that ignorance inferences of so-called epistemic indefinites — ignorance inferences which data like (299) and (303a) show are obligatory in the absence of other quantification in the sentence — disappear when the epistemic indefinites are embedded under quantifiers or in downward-entailing environments. For example, (316a) — in which the *algún* indefinite occurs in the restrictor of the universal quantifier (a downward-entailing environment) — is perfectly felicitous in a context where the speaker knows and recognizes each student in question; and (316b) — where the *irgendein* indefinite occurs beneath a deontic necessity modal — has a reading that does not imply any speaker ignorance about the set of doctors who Mary might marry.¹²

- (316) a. Todos los profesores que están hablando con **algún estudiante** llevan
All the professors who are talking with ALGÚN student wear
sombrero.
hat

‘Every professor who is talking to a student wears a hat.’

(Alonso-Ovalle and Menéndez-Benito 2017:13)

- b. Mary muss **irgendeinen Arzt** heiraten.
Mary has-to IRGEND-one doctor marry

‘Mary has to marry a doctor, any doctor is a permitted option.’

(Kratzer and Shimoyama 2002:130)

The disappearance of ignorance inferences with epistemic indefinites in (316) in the presence of quantification recalls what we saw in Chapter 2 with plural-agreeing disjunction. That is, both the distribution of plural-agreeing disjunction and epistemic indefinites can be said to observe the following pattern: For both, they must appear beneath some suitable licenser. If no overt licenser

¹²Because of deontic free choice readings like that in (316b), *irgendein* is often not characterized as a pure epistemic indefinite (e.g., Kratzer and Shimoyama 2002, Aloni and Port 2015, see also Section 4.2.2). There is another reading for (316b) that does involve speaker ignorance. According to this second reading, there is some particular doctor who Mary must marry, but the speaker doesn’t know or care who that doctor is (Kratzer and Shimoyama 2002:129).

is present and thus, licensing relies on covert modality in the form of MOD, then the meaning – and accordingly, the contexts in which a sentence may be felicitously uttered – are restricted by evidential restrictions on MOD.

As for the nature of the evidential restriction that I have argued unites epistemic indefinites and plural disjunctive agreement, Alonso-Ovalle and Menéndez-Benito (2017) propose that epistemic indefinites can only be used if the speaker lacks access to a ‘stable property’ that identifies the witness of the indefinite. Though Alonso-Ovalle and Menéndez-Benito do not define ‘stable property’ precisely, they take stable properties to be ones that hold across times. That is, a speaker with access to a stable property that identifies an indefinite has sufficient information to pick out the witness of the indefinite in a different situation. For example, in the ‘Lounge’ and ‘Clear vision’ contexts, physical appearance serves as a stable property; the speaker can see the dancer’s/kissee’s features clearly enough to be able to identify that same person in some other context. Thus the epistemic indefinite cannot be used. On the other hand, in the ‘Office’ and ‘Blurry vision’ contexts, the speaker cannot see the dancer/kissee well enough for physical appearance to be a stable property. In these contexts, the speaker would not pick out the dancer/kissee from a lineup at a separate time, since the physical appearance of the relevant individual is obscured. Alonso-Ovalle and Menéndez-Benito propose that this absence of a stable property is what makes epistemic indefinites acceptable for the ‘Lounge’ and ‘Blurry vision’ contexts ((313c) and (314b)).

Further work is needed to mold the stable property proposal into a compositional account involving MOD, but I am hopeful that given the empirical similarities between plural-agreeing disjunction and indefinites in terms of epistemic requirements, the same analytical approaches will prove useful for both.

Having discussed numerous similarities in how plural-agreeing disjunction and epistemic indefinites distribute in matrix clause environments, I should stress that their licensing environments are not identical; thus, plural-agreeing disjunction is not simply a special kind of epistemic indefinite. Beyond the differences in availability of wide-scope readings over embedding predicates

and with clausemate negation (see above), plural disjunctive agreement and epistemic indefinites differ distributionally in other respects, too. The precise contours differ depending on which epistemic indefinite.

For instance, *hari* in Sinhala differs from plural-agreeing disjunction in that the former is ungrammatical in polar questions (317a) and can scope over a universal quantifier (317b).

- (317) a. *John tee **biiwa-hari**?
 John tea drank-HARI
 ‘Did John drink tea?’ (Weerasooriya 2017:575)
- b. hæmomə **monəwa-hari** biiw-a.
 everyone what-HARI drank-A
 ‘Everyone drank something.’ ($\forall \exists > \forall$) (Weerasooriya 2017:573)

On the other hand, Romanian *vreun* is licensed in polar questions (Farkas 2002), but differs from plural-agreeing disjunction in that the former is not licensed in comparatives (318a) or in the nuclear scope of universals (318b).

- (318) a. *Ana e mai inteligentă decât **vreun coleg de-al ei**.
 Ana is more intelligent than VREUN classmate of hers
 ‘Ana is more intelligent than any classmate of hers.’ (Farkas 2002:139)
- b. *Fiecare fată a dansat cu **vreun bălat**.
 each girl has danced with VREUN boy
 ‘Each girl has danced with some boy.’ (Farkas 2002:139)

Thus, while plural-agreeing disjunction and epistemic indefinites share striking similarities in their evidential/contextual requirements in unquantified matrix clauses, the semantic environments in which they can appear are different in other ways.

Epistemic modality is but one of many types of modality. If I am correct that modality can provide the necessary environment for licensing plural disjunctive agreement, then we expect that other kinds of modality, beyond just epistemic modality, can also serve as licensors. I argue that this prediction is borne out by the case of teleological modality — the focus of the next section.

6.5 Goal-oriented contexts

To see the effect of teleological modality, we examine goal-oriented contexts. Since Groenendijk and Stokhof (1984), it has been noted that conversational goals affect how answers to *wh*-questions are understood. Groenendijk and Stokhof illustrate the contrast using the dialogue in (319):

(319) A: Where do they sell Italian newspapers in Amsterdam?

B: At the Central Railway Station. (Groenendijk and Stokhof 1984:458–459)

We can consider two possible contexts where the dialogue in (319) might occur, based on the paradigm given by Groenendijk and Stokhof (1984):

- (320) a. **Context:** *‘Tourist’*. Speaker A is an Italian tourist visiting Amsterdam. Seeking news from home, she approaches a local Amsterdammer on the street, and asks (319).
- b. **Context:** *‘Entrepreneur’*. Speaker A is an entrepreneur looking to enter the foreign-newspaper market in Amsterdam. Seeking to understand the current state of the market, he asks a local expert (319).

In the ‘Tourist’ context, B’s answer does not imply that the railway station is the only place that sells Italian newspapers in Amsterdam; rather, B’s answer indicates that the railway station is simply one place (perhaps the most convenient) where the tourist might buy her desired newspaper. On the other hand, in the ‘Entrepreneur’ context, B’s answer is understood to mean that the railway station is the only place that sells Italian newspapers. To preclude such an exhaustivity

inference from being made in the ‘entrepreneur’ context, Speaker B would need to in some way flag the incompleteness of their answer — for instance, by adding *I’m not sure about other places* to the end (Dayal 2016:72).

For the purposes of this discussion, I call contexts such as (320a), where naming just one true answer out of a possibly larger set of true answers suffices for the conversational goals, ‘mention-one’ contexts (Xiang 2022).¹³

Dayal (2016) and Xiang (2022) discuss how conversational goals interact with disjunction. In particular, when conversational goals are like in the ‘Tourist’ case where a non-exhaustive answer would suffice, disjunction can be used to present multiple satisfactory options, each of which would independently fulfill the conversational goals. For example, an Amsterdammer who knows that the railway station and the corner bookstore both sell Italian newspapers could respond to the tourist’s inquiry as follows:

(321) A: Where do they sell Italian newspapers in Amsterdam?

B: At the railway station or the corner bookstore. (based on Dayal 2016:72)

In these mention-one contexts, disjunction does not lead to ignorance inferences that might otherwise arise. For example, in the ‘Entrepreneur’ context, the disjunctive response in (321) would indicate that Speaker B is unsure of which place(s) exactly among the railway station and the bookstore actually sell(s) Italian newspapers. That is, in mention-one contexts, disjunction may be used without epistemic uncertainty.

Eggert (2002) observes that English speakers readily accept plural disjunctive agreement in mention-one contexts (though he does not categorize them as such). Some illustrative examples are given in (322):

¹³I use the term ‘mention-one’ over ‘mention-some’ — the term introduced by Groenendijk and Stokhof (1984) — because in the contexts of interest, it is important that a single individual suffices for the purposes of satisfying the conversational goals.

(322) a. **Context:** *B believes that Dee and Fey are good at phonetics.*

A: I need someone to help me with my phonetics homework. Who should I ask?

B: Dee or Fey **are** good at phonetics. Ask one of them.

b. **Context:** *Alf is planning a visit to his friend Bea.*

A: Where should we meet?

B: The library or the park **are** nice.

The B-answers in (322) can be felicitously uttered by a fully knowledgeable speaker — for instance, if Speaker B in (322a) has full confidence that both Dee and Fey are good at phonetics, their response is perfectly acceptable. Unlike in Section 6.4, therefore, we cannot appeal to quantification over epistemic worlds as the licenser of plural disjunctive agreement in (322).

I argue that rather than epistemic modality, mention-one contexts such as (322) involve teleological modality as the licenser for plural disjunctive agreement. In other words, what is being quantified over in (322) is not epistemically accessible worlds, but instead, worlds in which A's goals are met. For example, in (322a), the teleologically accessible worlds are those in which A gets help with their homework.

That the sentences with plural disjunctive agreement in (322) involve teleological modality is strongly suggested by the Speaker-A utterances: Both A-utterances involve overt modality in the form of *should*. In (322a), Speaker A asks for *x*'s such that A should ask *x* for help with their homework. The B-response indicates that Dee and Fey are two such people; asking either of them would satisfy A's goals. That is, Speaker B's answer is understood relative to Speaker A's goals, albeit without the modality being repeated overtly. Let us call the covert teleological operator *MOD'*. Then, the meaning of B's response in (322a) can be given as in (323):

(323) $\llbracket (322a-B) \rrbracket$

- a. $= \llbracket \text{MOD}'(\text{Dee or Fey are good at phonetics}) \rrbracket$
- b. $= \lambda w. \forall w' \in \mathcal{A}_{\text{goals}}(A)(w) [\exists x \in \{d, f\} [\text{good-at-phon}(x)(w')]]$

where $\mathcal{A}_{\text{goals}}(A)(w) = \{w' | A\text{'s } w\text{-goals are met in } w'\}$, i.e., the set of worlds where A gets help with his homework

Examining (323), we see that the disjunction takes existential scope beneath the universal quantification supplied by MOD' . Thus, the licensing requirements for plural disjunctive agreement according to Ivlieva's Generalization are fulfilled, deriving the acceptability of (322a).

It is worth considering why disjunction is acceptable at all in mention-one contexts, when conjunction would also be true. In other contexts, disjunction over two alternatives is judged uncooperative if the speaker knows both alternatives to be true; conjunction, which is more informative, must be used instead, as illustrated in (324). Competition with conjunction is the basis for the exclusivity implicatures that are normally observed with disjunction (Grice 1989; Eckardt 2007).

(324) **Context:** *Speaker B saw that Fey ate some cookies and Gal ate the rest.*

- a. A: Who ate the cookies?
- b. B: #Fey or Gal did.
- c. B': Fey and Gal did.

In mention-one contexts, disjunction can be used because given the quantification over teleological worlds — and given the nature of these teleological worlds — it is only relevant, in each of these worlds, that one of the people is good at phonetics. Concretely: In some worlds where A gets homework help (namely, the worlds where Dee helps A), it is relevant only that Dee is good at phonetics; and in some worlds where A gets homework help (namely, the worlds where Fey helps A), it is relevant only that Fey is good at phonetics. Indeed, when the conversational goals

require two individuals to be identified — i.e., in a mention-two context — we see that disjunction is no longer acceptable; in these contexts, only conjunction is possible:

(325) **Context:** *Speaker B believes that both Hal and Jan are strong.*

- a. A: I need two strong people to help me lift this heavy couch. Who is strong around here?
- b. B: #Hal or Jan **is/are** strong.
- c. B': Hal and Jan are strong.

Echoing the discussion of MOD in the previous section, suppose that we have a context c where MOD' is the element responsible for licensing plural-agreeing disjunction, and that we have a second context c' which differs from c in that MOD' cannot be felicitously used in c' . Then we expect that plural-agreeing disjunction will be unacceptable in c' . In contrast to MOD, which we argued in Section 6.4 is subject to evidential conditions, the conditions on MOD' are entirely about conversational goals. In particular, MOD' requires a mention-one context, i.e., a context where the goals of the conversation are fulfilled by naming just a single entity that verifies the predicate. Thus, MOD' is not available in (325), where the context requires two individuals that verify the predicate *strong* — deriving the infelicity of (325b).

Additionally, in an exhaustive context where all true answers are required to felicitously answer the question, plural disjunctive agreement is also infelicitous, which I argue is due to the infelicity of MOD. We illustrate this by returning to Groenendijk and Stokhof (1984)'s 'Tourist' and 'Entrepreneur' contexts. To preclude the possibility of licensing by epistemic modality in the form of MOD, let us assume in (326) that Speaker B knows that both the railway station and the corner bookstore sell Italian newspapers. In the mention-one 'Tourist' context, (326a), plural disjunctive agreement is felicitous; in the exhaustive 'Entrepreneur' context, (326), plural disjunctive agreement is infelicitous.

- (326) a. **Context:** *‘Tourist’*. Speaker A is an Italian tourist visiting Amsterdam. Seeking news from home, she approaches a local Amsterdammer on the street, and asks:

A: Where do they sell Italian newspapers in Amsterdam?

B: ✓The railway station or the corner bookstore **sell** Italian newspapers.

- b. **Context:** *‘Entrepreneur’*. Speaker A is an entrepreneur looking to enter the foreign-newspaper market in Amsterdam. Seeking to understand the current state of the market, he asks a local expert:

A: Where do they sell Italian newspapers in Amsterdam?

B: #The railway station or the corner bookstore **sell** Italian newspapers.

We conclude our discussion of goal-oriented contexts with a final note regarding competition between alternatives: Given our observation above that in each of the teleologically accessible worlds for (322), it is only relevant that one of the disjuncts verifies the predicate, we might expect singular agreement to be preferred in mention-one contexts. Empirically, however, speakers prefer plural agreement in these kinds of contexts (Eggert 2002:225).

In fact, Ivlieva’s Generalization provides a neat explanation for why plural agreement is preferred in these contexts. According to Ivlieva’s Generalization, plural-agreeing disjunction must take existential scope beneath the quantification provided by MOD’ in (323). On the other hand, singular-agreeing disjunction, which is not subject to the same licensing constraints, is compatible with an alternative reading where it takes wide existential scope, above the modal quantifier. That is, there is a particular person — either Dee or Fey — who, in all worlds where A gets help with his homework, is good at phonetics. Such a reading would lead to the implicature that the speaker is unsure which of Dee and Fey this statement holds for, conflicting with the speaker’s actual belief that both Dee and Fey are good at phonetics. To avoid the possibility of this unwanted inference, a speaker may choose to use plural disjunctive agreement instead, which does not have the same ambiguity because the plural-agreeing disjunction cannot scope

above MOD' . Thus, in certain contexts, the restrictions on possible readings for plural disjunctive agreement may apply pragmatic pressure against the use of the semantically more flexible singular disjunctive agreement — again demonstrating the need to consider context when evaluating the acceptability of disjunctive agreement.

Having seen in this chapter two different flavors of covert modality — epistemic and teleological — that can license for plural-agreeing disjunction, we might wonder whether other kinds of covert modality can do the same. In Section 2.2.6, for example, we saw overt deontic modality as a licenser for plural-agreeing disjunction. Might there be a covert counterpart that behaves the same as MOD and MOD' in terms of licensing plural-agreeing disjunction, but instead with deontic flavor? I leave this as an question for future research.

Chapter 7

Conclusion and further issues

In this dissertation, we have seen that introducing more variables — adding more semantic operators, or providing more specified pragmatic contexts — allows us to better understand an empirical domain that previously has been characterized as lacking structure and predictability. In Chapter 2, we showed that disjunctions of singular nominals that control plural agreement are restricted in their distribution: Unlike other disjunctions and indefinites which can freely scope above or below other sentential operators, disjunctions of singular nominals that control plural agreement can only occur in polar questions, downward-entailing environments, or within the scope of a quantifier — a pattern that I called Ivlieva’s Generalization, in recognition of Ivlieva (2012, 2013)’s findings on Russian. We saw evidence that this pattern holds not only in English and Russian, but also in Spanish, German, and Romanian as well. To distinguish between the generalization we ultimately defended, and an alternative generalization that plural-agreeing disjunction takes obligatory narrow scope, we examined environments involving multiple potential licensors, and found that intermediate scope readings are (at least sometimes) possible with disjunctions that control plural agreement.

In Chapter 3, we examined further properties related to disjunctive number agreement. We saw that disjunctions that control singular and plural agreement behave differently from each

other with respect to conjoined verbs and anaphora — and that even when a disjunctive subject controls plural agreement, it does not behave like a semantic plural. Importantly, we also saw that the distributional restrictions shown in Chapter 2 for disjunctions of singular nominals do not hold of disjunctions of plural nominals: Disjoined plural nominals control plural agreement, yet can appear in the kinds of semantic environments that disjoined singular nominals that control plural agreement cannot. These data showed that plural agreement with a disjunctive subject does not by itself produce the pattern of restricted semantics that we saw in Chapter 2; the number of the individual disjuncts also matters.

Chapter 4 explored parallels between plural disjunctive agreement and other better-studied empirical domains. I showed that the environments where plural-agreeing disjunctions can take scope closely mirror the environments that block anaphoric links to indefinites. I also compared the distribution of plural-agreeing disjunction to the distributions of other semantically marked indefinites, namely negative polarity items (NPIs), free choice items (FCIs), and dependent indefinites. We found that plural-agreeing disjunction has significant overlap with each of these categories of words, yet does not fit cleanly into any one of the categories. In fact, the licensing environments for plural disjunctive agreement seem to be the union of the licensing environments for NPIs, FCIs, and dependent indefinites.

In Chapter 5, I offered a formal account of Ivlieva's Generalization and other data examined in Chapters 2 and 3. The account was framed within DRT, and builds on Giannakidou (1998, 2011)'s analysis of NPIs. I argued that the observed empirical patterns for disjunctive agreement can be accounted for by attributing the restrictions on the distribution of plural disjunctive agreement to an optional head *X* external to the disjunction, which is syntactically plural and encodes the semantic requirement that the disjunction must take existential scope under some other operator.

Finally, in Chapter 6, I showed how the behavior of disjunctive agreement in unquantified, un-negated matrix clauses can also be understood in terms of Ivlieva's Generalization. The key assumption here was that covert modalization can provide quantification that is sufficient to

license plural disjunctive agreement. I argued that the availability of covert modalization is dependent on pragmatic context, and that this context dependence accounts for much of the inter- and intra-speaker variation reported for these kinds of sentences by previous studies. I also discussed connections to epistemic indefinites, which I argued obey similar evidential and epistemic constraints to plural-agreeing disjunction.

In the rest of this chapter, I discuss extensions, related topics, and open questions raised by the first six chapters of the dissertation.

7.1 Semantic number in downward-entailing environments

In Section 3.2, I argued that plural-agreeing disjunction — despite controlling plural verbal agreement — fails tests for semantic plurality and therefore does not introduce a semantic plurality. In particular, plural-agreeing disjunction — like disjunction, more generally (Himmelreich and Hartmann 2023) — is incompatible with collective verbs, cumulative readings, reciprocals, and the adverb *respectively*. The relevant data are repeated in (327).

(327) a. *Collective predicate*

*Jim or Tim **are** meeting this afternoon.

b. *Cumulative reading*

Context: Mary is cooking two eggs and Tee is cooking three eggs.

#Mary or Tee **are** cooking five eggs for tonight's dinner.

c. *Reciprocal*

*Lex or Fran **are** watching each other carefully.

d. *Respectively*

*Jenny or Penny **are** turning eight and/or ten years old, respectively, this January.

In fact, the data are somewhat more complicated than (327) indicates. We have discussed throughout the dissertation how plural disjunctive agreement is licensed in a number of different semantic environments. (327) shows plural disjunctive agreement in simple matrix clauses — where we argued that the licensing condition can be fulfilled by covert modality (see Chapter 6) — but plural-agreeing disjunction is also licensed in downward-entailing environments, polar questions, and other quantificational environments besides beneath covert modality.

In downward-entailing environments, the acceptability of reciprocals that are anaphoric to disjunction improves:

- (328) a. Leila doubts that Mary or Robb saw each other.
 b. If Mary or Robb (actually) saw each other, I'll be shocked!

In order for the reciprocal to be acceptable in downward-entailing environments, verbal agreement must not be singular; unmarked number, as in (328), or plural agreement, as in (329), are required:

- (329) a. Leila doubts that Mary or Robb **have**/***has** seen each other.
 b. If Mary or Robb (actually) **see**/***sees** each other, I'll be shocked.

A similar pattern occurs in German. The ungrammaticality of the reciprocal *sich gegenseitig* in (330a) contrasts with the grammaticality of the reciprocal in (330b) and (330c), where disjunction occurs beneath the negative verb 'doubt' and in the restrictor of a universal quantifier, respectively.

- (330) a. *Maria oder Peter haben sich gegenseitig gesehen.
 Maria or Peter have self mutually seen
 'Maria or Peter have seen each other.' (Stefan Keine, p.c.)
 b. ✓Ich bezweifle, dass Maria oder Peter sich gegenseitig gesehen haben.
 I doubt that Maria or Peter self mutually seen have
 'I doubt that Maria or Peter saw each other.' (Stefan Keine, p.c.)

- c. ✓Jeder, der denkt, dass Maria oder Peter sich gegenseitig gesehen
 everyone who think that Maria or Peter self mutually seen
 haben, irrt sich.
 have is.wrong self

‘Everyone who thinks that Maria or Peter saw each other is wrong.’

(Stefan Keine, p.c.)

When disjunction appears in downward-entailing environments, acceptability with *respectively* also improves (Eggert 2000), as shown in (331):

- (331) a. Be sure to include –entry _DllMain12 and –target=i386-mingw32 in the set of options you pass to dllwrap. If you don’t, your extension will crash on startup, or the linker will produce an incorrect DLL, respectively.
- b. Neither Agency nor Contractor shall be held responsible for delay or default caused by fire, riot acts of God, or war where such cause was beyond the reasonable control of Agency or Contractor, respectively. (Eggert 2000:99)

In Eggert’s examples, disjunction does not control verbal agreement. We find that *respectively* is acceptable in downward-entailing environments with a disjunctive subject regardless of whether the subject controls plural, singular, or syncretic number agreement.

- (332) a. If John or Mary **arrive/?arrives** late or early, respectively, the party will be canceled.
- b. If John or Mary **had** arrived late or early, respectively, the party would have been be canceled.
- c. Sue doubts that John or Mary **speak/speaks** French or Spanish, respectively.
- d. Sue doubted that John or Mary **spoke** French or Spanish, respectively.

Eggert (2000:99) also provides an example of *respectively* being used with disjunction under a modal, where he draws attention to the free choice inference accompanying the modal.

Not all the diagnostics for semantic plurality behave differently depending on semantic environment, though. In particular, collectivity and cumulativity still fail when plural disjunctive agreement occurs in a downward-entailing environment:

- (333) a. *If John or Mary **meet**, they will become friends.
 b. *Sue doubts that John or Mary **are** meeting after school.
 c. If Mary or Tee **scramble** five eggs, then we will have enough.

Conditional antecedent is not satisfied if Mary scrambles exactly two eggs and Tee scrambles exactly three eggs. *cumulative reading

- d. Sue doubts that Mary or Tee **are** scrambling five eggs.

If Mary is scrambling exactly two eggs and Tee is scrambling exactly three eggs, Sue is not wrong. *cumulative reading

These data show us two things. First, the tests for semantic plurality that we have been using do not behave uniformly; that is, the divergence of collectivity and cumulativity, on one hand, from reciprocals and *respectively*, on the other, with disjunction in downward-entailing environments, indicates that these diagnostics are actually testing for different properties related to plurality. In the overwhelming majority of cases, these properties coincide, but disjunction in downward-entailing environments is an environment that distinguishes the diagnostics — providing avenues for further exploration of precisely what each of these diagnostics measure.

Second, and more specific to the present study on disjunctive agreement, the data regarding reciprocals and *respectively* suggest that sentences where disjunctions control plural agreement may actually represent a heterogeneous class. That is, we have been seeking a unified account of all sentences where disjunction controls plural agreement, but in fact, there may be multiple underlying derivational pathways which result in the same surface morphology. In any case, the

failure of semantic plurality tests in (327) and (332) indicates that plural disjunctive agreement does not require that the subject be semantically plural.

We might also consider the possibility that speakers' willingness to accept reciprocals and *respectively* in downward-entailing owes to errors in processing, and that these sentences are actually ungrammatical. If this is the case, then the question becomes: What about the downward-entailing environments leads speakers to be more willing to accept reciprocals and *respectively* with disjunctions — since in upward-entailing environments, they are easily judged to be unacceptable?

7.2 Double negation and bathroom sentences

We showed in Section 4.1 that the environments where disjunctive subjects control plural agreement closely align with the environments where indefinites do not introduce globally accessible discourse referents for the purposes of cross-sentential anaphora. This motivated our analysis, inspired by Giannakidou (1998, 2011)'s analysis of NPIs, which used the tools of DRT developed for cross-sentential anaphora to capture the distribution of plural disjunctive agreement. We should note, though, that our analysis does not explicitly tie the distributions together. That is, the similarities in predicted distribution between plural disjunctive agreement and indefinites that do not introduce globally accessible discourse referents is an emergent property of our proposed system. Underlyingly, the mechanisms are different: Plural-agreeing disjunction is blocked from taking widest scope by the semantics of X, whereas indefinites that appear in non-highest DRTs do not license cross-sentential anaphora due to constraints on variable accessibility between DRSs.

In fact, the behavior of plural-agreeing disjunction and anaphorically inaccessible indefinites do diverge in several kinds of sentences — namely, double negation sentences (Karttunen 1976; Krahmer and Muskens 1995) and 'bathroom' sentences (Evans 1977; Roberts 1987, 1989). Double negation and bathroom sentences have drawn attention in the dynamic semantics literature because they appear to be counterexamples demonstrating that indefinites embedded beneath

negation are not always anaphorically inaccessible outside the negation. Examples of double negation and bathroom sentences are shown in (334). In (334a), the indefinite *an umbrella* appears beneath two negation operators: *it's not true that* and *didn't*. Yet in the second sentence of (334a), the sentential subject *it* can mean *an umbrella* without issue. In (334b), the indefinite *a bathroom* occurs under negation in the first disjunct, yet can be picked out by *it* in the second.

- (334) a. It's not true that John didn't bring an umbrella_i. It_i was purple and stood in the hallway. (Krahmer and Muskens 1995:358)
- b. Either there isn't a bathroom_j in this house or it_j's in a funny place.
(adapted from Roberts 1989:702)

Double negation sentences and bathroom sentences pose a challenge for DRT because normally, negation blocks anaphoric links to indefinites inside the negation (see Section 4.1 and 5.1.2). Yet in each of the sentences in (334), embedding the negation beneath a second operator — another negation in (334a), and a disjunction in (334b) — makes the indefinite targetable by anaphora. This is unexpected under the assumptions about variable accessibility presented in Chapter 5; if anything, embedding the indefinite beneath a second operator would be expected to make it even more inaccessible (whatever that means) for the purposes of anaphora.

Different analyses have been proposed to reconcile problematic sentences like those in (334) with the tendency of negation and other operators to block discourse anaphora more generally (e.g., Kamp and Reyle 1993, Krahmer and Muskens 1995; Mandelkern 2022; Hofmann 2025). While a full treatment of these anaphora facts within a dynamic framework is outside the scope of this dissertation, I note here that these kinds of sentences are not exceptional in terms of their behavior with plural disjunctive agreement. That is, embedding a disjunctive subject beneath two negations, or embedding a disjunctive subject beneath negation and another disjunction, does not prevent the disjunctive subject from controlling plural verbal agreement.

To demonstrate, (335a) gives a baseline sentence where a disjunctive subject takes scope beneath a single negation, and can control plural agreement. Unlike with cross-sentential-anaphora,

embedding the negation and disjunction in (335a) beneath a second negation does not change the grammaticality with respect to plural verbal agreement; (335b) is acceptable with plural agreement. Likewise, in (335c), where the negation and disjunction are both embedded within the first disjunct of another disjunction — as in bathroom sentences — plural verbal agreement is also acceptable.

- (335) a. ✓John doesn't believe that Mary or Sue **are** coming. $(\neg > \exists)$
- b. ✓It's not true that John doesn't believe that Mary or Sue **are** coming. $(\neg > \neg > \exists)$
- c. ✓Either John doesn't believe that Mary or₁ Sue **are** coming, or₂ I've completely misread the situation. $(\exists_2 > \neg > \exists_1)$

The analysis presented in Chapter 5 correctly predicts the acceptability of plural agreement in (335b) and (335c): Embedding disjunction beneath a second operator in (335b) and (335c) does not change the fact that the disjunction does not take highest existential scope. That is, the requirement for disjunction to control plural agreement is still satisfied in (335b) and (335c).

We see, therefore, that the empirical patterns diverge between anaphoric inaccessibility and plural disjunctive agreement in double negation and bathroom sentences. So although DRT requires additional assumptions to distinguish indefinites in these environments from indefinites embedded beneath just a single negation, our analysis accounts for the possibility of plural agreement in these sentences without further modification.

7.3 More on presupposition

In Sections 2.4 and 4.2.1, we discussed how neither plural disjunctive agreement nor NPIs are possible in alternative questions (Guerzoni and Sharvit 2014).

- (336) a. ***Do** John or Mary play chess?_{AltQ}
- b. *Did John **ever** play chess or checkers?_{AltQ} (Guerzoni and Sharvit 2014:200)

I then argued in Section 5.1.2 that we can account for the unacceptability of plural agreement in alternative questions by evaluating the restrictions on discourse referents introduced by X not just relative to the asserted content of a sentence, but also to its presuppositional content. In this section, I examine two other empirical areas involving the interaction of presupposition, and their interaction with disjunctive agreement: embedded alternative questions, and factive complements.

The alternative question/polar question dichotomy for English disjunctive sentences that we previously examined for both matrix clause questions also extends to embedded clauses (Larson 1985). Guerzoni and Sharvit (2014) observe that the restriction on NPIs in alternative questions is not limited to matrix alternative questions: NPIs are ungrammatical in embedded alternative questions as well, in contrast to embedded polar questions (337).

- (337) a. Bill wondered whether Mary **ever** played chess or checkers. *AltQ, ✓PolQ
 b. Bill wondered whether **any professor** played chess or checkers. *AltQ, ✓PolQ
 (Guerzoni and Sharvit 2014:201)

We find that plural disjunctive agreement once again patterns with NPIs within embedded alternative questions: Disjunction cannot control plural agreement in such environments (338a). On the other hand, singular-agreeing disjunction is acceptable in embedded alternative questions (338b), as is non-agreeing disjunction (339) — showing that ungrammaticality of (338a) can be attributed to the agreement morphology rather than some other factor.

- (338) **Context:** *Alex is the casting director for a movie. For this movie (The BFG), he needs actors who are tall. Two actors who Alex is interested in are Tam and Cam, but for the lead role, Alex will only consider the taller of the two, whoever that is. Alex wants to know which of the two actors to invite to audition for the lead role.*
- a. *Alex wonders [whether Tam or Cam **are** taller (of the two)]_{AltQ}.
 b. ✓Alex wonders [whether Tam or Cam **is** taller (of the two)]_{AltQ}.

(339) **Context:** *Alex is the casting director for a movie. For this movie (Gulliver’s Travels 2), he needs actors who are tall and actors who are short; no medium-height actors are allowed. For Gulliver’s Travels 2, there are two different audition dates, one for tall people, and one for short people. Sam was in the original Gulliver’s Travels, so Alex knows she must be either tall or short, but Alex has forgotten which height category Sam was in. Alex wants to know which audition date to invite Sam to.*

✓ Alex wonders [whether Sam is tall or short]_{AltQ}.

For completeness, we note that both singular and plural agreement are possible with disjunctive subjects in embedded polar questions:

(340) **Context:** *Alex needs help getting something from a high shelf at work. Looking at the shift schedule, he sees that Tam and Cam — who he’s never met before — will be coming in shortly. He wonders if one of them will be able to help him.*

a. ✓ Alex wonders [whether Tam or Cam **are** tall]_{PolQ}.

b. ✓ Alex wonders [whether Tam or Cam **is** tall]_{PolQ}.

Like matrix alternative questions, embedded alternative questions encode existence presuppositions.¹ These presuppositions are evaluated relative to the matrix subject’s belief state, rather than to the speaker’s. Abenina-Adar and Sharvit (2021) demonstrate this fact via (341a), which shows that it is infelicitous to explicitly deny that the presupposition holds within the matrix subject’s belief state. As further evidence, (341b) shows that attributing to the speaker a belief state incompatible with the existence presupposition does not lead to infelicity.

¹Both matrix and embedded alternative questions also encode uniqueness presuppositions, but these are not needed for the analysis I present.

- (341) a. #John thinks that it's possible that Mary is neither swimming nor dancing, and he is wondering [whether she is swimming or dancing]_{AltQ}.

(Abenina-Adar and Sharvit 2021:60)

- b. ✓John is wondering [whether Mary is swimming or dancing]_{AltQ}. But he's mistaken — she's doing neither!

Therefore, in order to rule out plural agreement in (338), the condition preventing deviant presuppositions that we relied on in Section 5.1.2 must also extend to presuppositions that are evaluated relative to non-speaker attitude holders. This complicates the DRT analysis presented in Chapter 5. I leave this as an issue for future work, noting that Giannakidou (1998)'s proposal that NPI-licensing environments (defined by non-veridicality, in her analysis) are evaluated relative to all attitude holders, not just the speaker, may perhaps prove useful.

Another environment where presupposition might be expected to play a role is with factive verbs such as *know* and *realize*, which are said to presuppose the truth of their complement clauses (Kiparsky and Kiparsky 1970). For example, denying the embedded proposition *it was raining* in (342) leads to infelicity. Notice that in contrast to embedded alternative questions, the presupposition in (342) is evaluated relative to speaker's belief state rather than to the matrix subject's.

- (342) #Tiff realized/knew that it was raining, but it wasn't actually raining.

(343a) shows that plural disjunctive agreement can occur beneath factives. Since denying the presupposition leads to infelicity in (343b), we can confirm that the existence presupposition is indeed present in (343a).

- (343) a. Tiff realized/found out/discovered/knew that Ben or Liz **were** lying.
b. #Tiff realized/found out/discovered/knew that Ben or Liz **were** lying, but actually neither of them were lying.

Further evidence that the presupposition holds (i.e., that the embedded proposition must

be true in the speaker's belief state) comes from examining the contextual conditions under which factives can embed plural-agreeing disjunction. Recall from Section 6.4 that whether a (unquantified, un-negated) matrix disjunctive subject can control plural agreement depends on the speaker's epistemic/evidential state. For example, plural disjunctive agreement is possible in (344a) but not in (344b). We discussed in Section 6.4.5 that the distinguishing factor between (344a) and (344b) may be whether the speaker's evidence would allow them to, in some other context, pick out the individual that verifies the predicate within their utterance.

- (344) a. **Context:** 'Office'. Betty and Connie are outside the office where the Math department's three algebraists — Alexander, Saul, and Raphael — are meeting. Suddenly, Betty and Connie hear music coming out of the office and sounds that unequivocally indicate that someone is dancing on the table to the music. Betty says...
- b. **Context:** 'Lounge'. Betty and Connie are in the Math department lounge. They know that the only people who use the lounge's coffee machine are the department's three algebraists, Alexander, Saul, and Raphael. Betty and Connie see the three algebraists talking around the coffee machine, but they can't recognize who is who. All of a sudden, a burst of Brazilian music starts to play. One of the algebraists climbs onto the table and starts dancing. Unbeknownst to Betty and Connie, it's Alexander. Betty says...
- c. (Look!/Listen!) Alexander, Saul, or Raphael **is** dancing on the table!
✓ in (344a), ✓ in (344b)
- d. (Look!/Listen!) Alexander, Saul, or Raphael **are** dancing on the table!
✓ in (344a), # in (344a)

With presupposition projection from factives, we find the same evidential restrictions as in the non-factive cases. Consider (345a) and (345b), which modify (344a) and (344b) to support factive inferences. As with the non-factive cases, whether the speaker is in the same room or a different room as the professors affects whether plural disjunctive agreement is possible.

- (345) a. **Context:** ‘Office’. Betty and Connie are outside the office where the Math department’s three algebraists — Alexander, Saul, and Raphael — are meeting. Suddenly, Betty and Connie hear music coming out of the office and sounds that unequivocally indicate that someone is dancing on the table to the music. Betty, who knows that Ted, the security guard, is watching the security camera inside that office, says...
- b. **Context:** ‘Lounge’. Betty and Connie are in the Math department lounge. They know that the only people who use the lounge’s coffee machine are the department’s three algebraists, Alexander, Saul, and Raphael. Betty and Connie see the three algebraists talking around the coffee machine, but they can’t recognize who is who. All of a sudden, a burst of Brazilian music starts to play. One of the algebraists climbs onto the table and starts dancing. Unbeknownst to Betty and Connie, it’s Alexander. Betty, who knows that Ted, the security guard, is watching the security camera inside the lounge, says ...
- c. Ted knows that Alexander, Saul, or Raphael **is** dancing on the table.
✓ in (345a), ✓ in (345b)
- d. Ted knows that Alexander, Saul, or Raphael **are** dancing on the table.
✓ in (345a), # in (345a)

We note the evidential restrictions demonstrated by (345) apply to the speaker rather than to the matrix subject; whether the security footage that Ted is watching is grainy vs. clear, or whether Ted can identify the professors by appearance, does not affect the acceptability of (345c) or (345d). Similar results hold with other factives — e.g., *find out*, *realize*, and *discover* — in terms of speaker evidential requirements.

Summarizing what we have seen: Plural disjunctive agreement is acceptable beneath factives. Further, when plural disjunctive agreement occurs beneath a factive, not only do the truth conditions project, but so too do the evidential restrictions on plural disjunctive agreement.

The empirical evidence for projection from factives raises issues for the analysis of alternative

questions presented in in Section 5.1.2. On the one hand, we attributed the unacceptability of plural agreement in alternative questions to the existence presuppositions that alternative questions encode; on the other hand, presuppositions involving plural disjunctive agreement appear to project from beneath factives, yet plural disjunctive agreement is still possible in these environments. I discuss two analytical options here; adjudicating between these paths remains a question for future research.

One option is to forego our claim that presuppositions can yield violations on X's prohibition from introducing a discourse referent into the highest-level DRS. Pursuing this option would require identifying some other factor that is responsible for the ungrammaticality of plural disjunctive agreement in both matrix and embedded alternative questions. According to this approach, we might capitalize on the fact that many languages distinguish between disjoiners used in alternative vs. polar questions, and propose that this is the case in English as well — and that in English, alternative-question disjunction happens to be homophonous with standard disjunction, but the former cannot be modified by X.

The other option would be to assume that different kinds of presuppositions behave differently in terms of how they interact with X. This idea is supported by Tonhauser et al. (2018) and Degen and Tonhauser (2022)'s work showing that 'factives' are not a uniform class with respect to presupposition projection. They argue that presupposition projection from factives may be gradient rather than categorical. Future work pursuing this approach will need to delineate the relevant factors regarding projection that X is sensitive to.

The issue of presupposition also arises in connection with the focus particle *only*, which — even independently — deserves discussion due to its prominence in the NPI literature. I discuss *only* in the next section.

7.4 *Only* and disjunctive agreement

Given the similarities between the distribution of plural disjunctive agreement and that of NPIs (see Chapter 2 and Section 4.2.1) — for instance, both are licensed in downward-entailing environments and polar questions, but not in alternative questions — we might wonder whether other environments that license NPIs also license plural-agreeing disjunctions. I discuss here the case of *only* (Ladusaw 1979; Linebarger 1987; von Stechow 1999; Giannakidou 2006, 2011); another NPI-licensing environment to explore in future work is superlatives (Ladusaw 1979; von Stechow 1999; Gajewski 2007; Bumford and Sharvit 2022; see also (90c) and (131)).

Only licenses (weak) NPIs in both its restrictor (i.e., focus associate) and its nuclear scope. The focus associates are shown in (346) via brackets.

- (346) a. Only [the students who had **ever** read **anything** about phrenology]_F attended the lectures. (Ladusaw 1979:165)
- b. Only [John]_F had **ever** read anything about phrenology. (Ladusaw 1979:166)

Testing *only* with disjunctive agreement turns out to be more complicated than just creating disjunctive sentences with and without *only* and seeing what happens. Before incorporating agreement, let us first establish a baseline of how *only* interacts with disjunction. We assume, following Fox (2007), the denotation for *only* given in (347) (see also Groenendijk and Stokhof 1984, Alxatib 2020). The definition in (347) follows Horn (1969) in separating out the presuppositional content (that the sentence *S* without *only* is true) of an *only* statement from its asserted content (that focus alternatives to *S* are false), but excludes from the set *A* of focus alternatives those alternatives which would lead to a contradiction if they were to be denied.

$$(347) \quad \llbracket \text{only}(A)(S) \rrbracket = \lambda w : \llbracket S \rrbracket^w . \bigwedge \{ \neg \llbracket S' \rrbracket^w : S' \in \text{IE}(S)(A) \}$$

where

$$\text{IE}(S)(A) = \cap \{ A' \mid A' \text{ is a maximal subset of } A \text{ such that } \{ \neg q \mid q \in A' \} \cup \{ S \} \text{ is consistent} \},$$

i.e., the set of innocently excludable alternatives

To demonstrate, let us take the sentence (348).

(348) John only drank [Coke or Pepsi]_F.

For (348), the presupposition *S* is the analogous sentence without *only* (i.e., the ‘ordinary semantic value’, in the terminology of Rooth 1992): *John drinks Coke or Pepsi*. Since *Coke or Pepsi* is focused in (348), the focus alternatives are things that John might have drunk, e.g., Sprite, Fanta, Coke, and Pepsi.² Composing the focus alternatives with the rest of the sentence yields the alternative set *A* in (349):

(349) $A = \{\text{John drank Coke or Pepsi, John drank Sprite, John drank Fanta, John drank Coke, John drank Pepsi, } \dots\}$

Without innocent exclusion, denying all alternatives in (349) that are not entailed by *John drinks Coke or Pepsi* – as would result from applying a classical definition of *only* as in (350) that does not distinguish which alternatives are innocently excludable – would lead to denying the propositions (351a) and (351b) stemming from each of the individual disjuncts, since neither is individually entailed by *S*. But denying both (351a) and (351b) would contradict the presupposition, which states that the proposition holds for at least one of the disjuncts.

(350) $\llbracket \text{only}(A)(S) \rrbracket = \lambda w : \llbracket S \rrbracket^w . \bigwedge \{ \neg \llbracket S' \rrbracket^w : S' \in A \wedge S \not\Rightarrow S' \}$

(351) a. John drank Coke.

b. John drank Pepsi.

Instead, innocent exclusion applies, eliminating *John drank Coke* and *John drank Pepsi* from the set of alternatives that are denied by the assertive portion of *only*. Neither of these alternatives is innocently excludable by the definition in (347), since denying one, while maintaining the

²Following a suggestion by Alxatib (2020:fn. 3), we assume that *only* does not operate on the conjunctive alternative to a disjunctive focus associate. This seems to derive the correct truth conditions (see also (353)), though it remains an open question why alternatives to disjunction might differ between *only* statements and other statements involving standard neo-Gricean reasoning or exhaustification by *Exh*.

presupposition, entails the other. Thus, we have arrived at the final meaning for (348) that is shown in (352). The sentence presupposes that John drank Coke or Pepsi and asserts that he drank nothing else.

$$(352) \quad \llbracket (348) \rrbracket = \lambda w : \exists x \in \{\text{pepsi, coke}\} [\text{drank}^w(\text{john})(x)] \\ \quad \quad \quad \cdot \neg \text{drank}^w(\text{john})(\text{sprite}) \wedge \neg \text{drank}^w(\text{john})(\text{fanta}) \wedge \dots$$

For NPIs, von Stechow (1999) proposes a semantic approach to deriving *only*'s role as a licenser via a definition of downward-entailment that relativizes monotonicity to situations where presuppositions are satisfied. Other approaches to NPI licensing invoke negative inferences that accompany *only* (Linebarger 1987; Giannakidou 2006, 2011).

With this background in place, let us now turn to disjunctive agreement with *only*. Given the presuppositional content shown in (352) — which involves wide-scope quantification over the disjunctive variable — we might expect plural agreement to be wholesale unacceptable with a disjunctive subject that is the focus associate of *only*, based on what we saw previously with alternative questions. In fact, as with factives (Section 7.3), the situation is more complicated.

First, we note that at least in some contexts, a plural-agreeing disjunctive subject can be the focus associate of *only*. For example, suppose that there are four contextually salient dogs: Lily, Bruin, Mochi, and Bella. Lily and Bruin are white, while Mochi and Bella are brown. Seeing white fur on the couch and no brown fur on the couch, someone could felicitously say (353). Any agreement form — singular, plural, or unmarked/syncretic — is acceptable. In this context, (353) presupposes that one of Lily and Bruin was on the couch, and asserts that neither Mochi nor Bella was.

$$(353) \quad \checkmark \text{Only Lily or Bruin } \mathbf{was/were/sat} \text{ on the couch.}$$

The acceptability of (353) shows that *only* is not incompatible with plural disjunctive agreement. However, (353) does not show that *only* licenses plural disjunctive agreement. Whereas minimal pairs such as (354) — where NPIs are acceptable with *only* but unacceptable without it — clearly

point to *only*'s role in licensing the NPIs in (354a), the acceptability of (355) uttered in same context as (353) means that it might not actually be *only* that is licensing plural disjunctive agreement in (353). Rather, the context and speaker evidence in (353) and (355) seem to license plural disjunctive agreement independently of *only*, like in the contexts studied in Chapter 6.

(354) a. ✓Only Lily **ever** caught **any** rabbit.

b. *Lily **ever** caught **any** rabbit.

(355) ✓Lily or Bruin **was/were/sat** on the couch.

To test whether *only* itself can license plural disjunctive agreement, we require a context where without *only*, plural disjunctive agreement is unacceptable. The test, then, is whether plural disjunctive agreement becomes acceptable when *only* is added. Such a context also requires that the conditions for *only* to be felicitous are satisfied — namely, we need the presupposition to hold and for there to be contextually salient alternatives that the assertive contribution of *only* can negate.

Again turning to Chapter 6 for inspiration, (356) gives an attempt at constructing a context meeting the above requirements, albeit somewhat imperfect since *only* is marked in (356b). Singular disjunctive agreement is acceptable in (356a) and (356b), establishing that without plural agreement, a disjunctive utterance is well-formed and appropriate for the context, regardless of the presence of *only*. Plural agreement is unacceptable without *only* in (356c), showing that the context alone does not provide the necessary components for licensing plural disjunctive agreement. (356d) is the crucial test case. Its unacceptability indicates that *only* alone is not sufficient to license plural disjunctive agreement.

(356) **Context:** *Alf and Bea are hosting a surprise party for Cal. Alf and Bea know almost all of the guests — the only exceptions are Dee and Fey, who Bea has never met. There's a knock at the door, and Bea opens it to see a guest who she doesn't recognize. Bea infers that the person she's looking at is Dee or Fey. Alf calls from the other room, 'Is that*

Cal? Bea responds:

- a. ✓ No, but Dee or Fey **is** here.
- b. ?/✓ No, only Dee or Fey **is** here.
- c. *No, but Dee or Fey **are** here.
- d. *No, only Dee or Fey **are** here.

The judgments in (356) are subtle, but certainly, whatever improvement in acceptability may exist from (356c) to (356d) is appreciably less in magnitude than the ameliorative effect that *only* has on NPIs (e.g., in (354)). Further fleshing out of the empirical picture in this domain through more robust testing of contexts is needed; doing so would facilitate incorporating the behavior of disjunctive agreement with *only* into the theoretical proposal. I leave both these tasks as topics for future research.

7.5 Conjunctive agreement and ϕ -features beyond number

Beyond disjunctive agreement, agreement with coordinated nominals has also been studied in the context of partial agreement. Partial agreement describes a pattern where agreement morphology reflects the features of just one nominal out of two or more nominals that are conjoined. Most common among partial agreement patterns is closest conjunct agreement, where the verb reflects the features of the linearly closest conjunct. For example, ‘see’ in (357) is inflected with the second-person singular features of the closest conjunct *ti* rather than with the second-person plural features of the entire conjunction (which do appear on the reflexive pronoun).

- (357) **Gwelais** *ti* *a* Megan ein hunain.
see.PAST.2SG you.SG and Megan 2PL SELF

‘You and Megan saw yourselves.’

(Welsh; Borsley 2009:243)

Closest conjunct agreement has been documented in many languages, including Irish (McCloskey 1986), Arabic (Aoun et al. 1994), and Finnish (Crone 2016). Other partial agreement patterns include first conjunct agreement, last conjunct agreement, and highest conjunct agreement (see Nevins and Weisser 2019 for an overview). The partial agreement literature is too rich to comprehensively cover here, but I highlight in this section connections to the present study on disjunctive agreement, as well as relevant directions for future research connecting these areas.

Within a language, partial agreement often coexists with resolved agreement and/or default agreement. Resolved agreement describes agreement with the conjunction as a whole, while default agreement describes a last-resort morphological operation to supply an agreement value when other agreement processes — such as resolved agreement or closest conjunct agreement — fail.

Resolved and default agreement are shown in the German example (358). In the resolved agreement case with *wusstet*, the second-person singular ‘you’ and third-person singular ‘your friend’ combine together to yield second-person plural verbal agreement. The third-person plural verbal form *wussten*, on the other hand, can be inferred to be a default form due to its being syncretic with the first-person form (Nevins and Weisser 2019:227).

(358) Du und dein Freund **wusste-t/wusst-en** alle Antworten.

you and your friend knew-2PL/knew-3PL all answers

‘You and your friend knew all the answers.’ (Driemel 2025:5)

We could analyze the alternation in the present study between singular agreement and plural agreement with disjoined SG-SG subjects as an alternation between closest disjunct and resolved agreement, under the assumption that plural agreement is resolved agreement. Indeed, though closest disjunct agreement has received comparatively less attention than its conjunctive counterpart, Smith et al. (2018), Marušič and Shen (2021), and Himmelreich and Hartmann (2023) do characterize plural agreement with disjunctive subjects as resolved agreement. Viewed through

the lens of closest disjunct vs. resolved agreement, Ivlieva's Generalization (see Chapter 2) states that resolved agreement with disjunction is only possible in downward-entailing and quantificational environments as well as polar questions; and, within the DRT analysis presented in Chapter 5, we would state that a disjunction that introduces its discourse referent into the highest DRS cannot control resolved agreement.

I am not aware of any patterns where scope or semantic environment affect which agreement mechanisms are available involving conjunctive agreement. Thus, investigating whether analogous patterns hold for conjunctive agreement stands out as a direction for future research. For example, are there languages that allow both partial agreement and resolved agreement in certain sentences, but where the two agreement patterns lead to different readings when other scopal operators are considered? Or are there languages where a particular agreement strategy is only possible in certain semantic environments, e.g., a language where partial agreement is limited to downward-entailing/NPI-licensing environments?

Another area for future research, building on the conjunctive agreement literature, is to expand the scope of inquiry of disjunctive agreement to other ϕ -features beyond number, e.g., person and gender. In the conjunction literature, different kinds of features have been found to behave differently with respect to agreement in coordinations. For example, in Bosnian/Serbian/Croatian, when a singular feminine noun is conjoined with a singular neuter noun, number agreement is resolved to plural, whereas gender agreement defaults to masculine (359). And in Greek, when conjoined nominals are mismatched in gender, verbal gender agreement depends on animacy (360) (Kazana 2011; Adamson and Anagnostopoulou 2024). This dissertation has shown disjunctive number agreement to be sensitive to scope and semantic environment; it remains to see whether other ϕ -features show similar effects.

- (359) a. Juče su **uništeni** /***uništene** jedna varošica i
 yesterday are destroyed.PL.MASC /destroyed.PL.FEM one town.FEM and
 jedno selo.
 one village.NEUT

(Bošković 2009:461)

- b. Juče su **uništeni** /***uništene** jedno selo
 yesterday are destroyed.PL.MASC /destroyed.PL.NEUT one village.NEUT
 i jedna varošica.
 and one town.FEM

(Bošković 2009:461)

- (360) a. O andras ke i gineka ina **eksipni**
 the.MASC.SG man and the.FEM.SG woman are intelligent.MASC.PL
 /***eksipna**.
 /intelligent.NEUT.PL

‘The man and the woman are intelligent.’

(Adamson and Anagnostopoulou 2024:11)

- b. O pinakas ke i karekla ina **vromika**
 the.MASC.SG blackboard and the.FEM.SG chair are dirty.NEUT.PL
 /***vromiki**.
 /dirty.MASC.PL

‘The blackboard and the chair are dirty.’

(Adamson and Anagnostopoulou 2024:11)

Testing disjunctive agreement in a language with gender (or noun class) agreement would allow for factoring out semantic effects which might be intertwined with number agreement.

As we will discuss in Section 7.6, number agreement has semantic effects outside of disjunction; interpretative effects likely interact with some of the data we have examined in this dissertation, especially in Chapter 6. Since gender on inanimate nominals is purely formal — i.e., lacking semantic correlates — studying gender agreement with disjoined inanimate nominals would guarantee that any observed variations in agreement are due to purely morphosyntactic factors.

As a word of caution: At least in English, I have found judgments involving disjoined subjects of mismatched person to be unstable across and within speakers — even moreso than with disjoined third-person subjects. This is also reported by Zwicky (2009). Winans (2019) notes that speakers of Egyptian Arabic report uncertainty in judgments for sentences where disjunctive subjects mismatch in gender, preferring instead to change the target sentence to avoid agreement with the difficult disjunctive subject. Hopefully, equipped with this dissertation’s findings on what are the relevant contextual and semantic factors that affect disjunctive agreement, larger-scale experimental studies that control for pragmatic context will be able to more systematically test for patterns in disjunctive agreement involving ϕ -features besides number.

7.6 Semantic agreement

The present study of disjunctive agreement fits into a larger body of work examining the interaction between semantics and agreement. While agreement cannot be entirely semantic — e.g., in English, singular *they* and words like *pants* control plural agreement despite picking out one single entity in the real world; in languages with gender agreement, inanimate nouns still control gender agreement despite their gender being semantically meaningless; and agreement with imposter (pro)nouns (Collins and Postal 2012) reflects the syntactic features of the agreement controller rather the semantic features of the controller’s referent — there are a number of areas where agreement has been shown to have interpretative effects. I highlight several here; for recent work on semantic vs. syntactic agreement, see Smith (2021) and Corbett (2023).

One area where a change in agreement morphology covaries with interpretational differences is with degree-denoting expressions (Morgan 1972; Rett 2014). Consider, for example, the DP *four drinks*. As a sentential subject, *four drinks* typically controls plural verbal agreement, as in (361a). However, under an interpretation where *four drinks* denotes a degree rather than a set of individuals, singular agreement can be used instead, as in (361b). For nominals that are polysemous between individual and degree interpretations, the semantic properties of the sentential subject are reflected in the verbal agreement on the predicate.³

(361) a. Four drinks **are**/***is** in the fridge/sold at that shop.

b. Four drinks **is**/**are** enough to get me drunk. (Rett 2014:247)

Though nominals that are polysemous between individual-denoting and degree-denoting interpretations do have in common with disjunctive subjects the ability to control both singular and plural agreement, the empirical contour is somewhat different. In terms of what semantic properties they are sensitive to, the relevant semantic environment is different for individual/degree-polysemous nominals versus for disjunctive subjects. For individual/degree-polysemous nominals, the specific predicate dictates whether a nominal like *four drinks* is interpreted as individual- or degree-denoting: *Be in the fridge* is a predicate over individuals, whereas *be enough to get me drunk* is ambiguous in what kind of argument it takes (Rett 2014). With disjunctive agreement, on the other hand, we have seen no evidence of any sensitivity to the particular predicate, in terms of which agreement forms are possible.⁴ Instead, disjunctive agreement is sensitive to the global semantic environment. That is, for disjunctive agreement, the entire sentential context matters, in a similar way to NPI licensing: Disjunctive agreement patterns differently in polar questions vs. alternative questions, and in matrix environments vs. in conditional antecedents. Such effects are not seen with individual/degree-polysemous nominals: The agreement facts of (361) are unchanged in polar questions and within conditionals, as shown in (362).

³See Rett (2014) for other constructions argued to involve individual/degree polysemy.

⁴Foppolo and Staub (2020), testing ‘inclusive’ predicates (i.e., predicates which can plausibly be satisfied by multiple individuals) vs. ‘exclusive’ predicates (i.e., predicates that can be satisfied by only one individual), find no significant effect on agreement morphology.

- (362) a. **Are/*Is** four drinks in the fridge/sold at that shop?
 b. **Are/Is** four drinks enough to get me drunk?
 c. If four drinks **are/*is** in the fridge, you can take one.
 d. If four drinks **are/is** enough to get me drunk, then I'd better stop for today.

Semantically sensitive agreement patterns also arise with coordination. In particular, conjoined nominals allow both split and joint readings (following the terminology used by Heycock and Zamparelli 2005). That is, two conjoined nominals can alternatively refer to two different individuals — the split reading, as in (363) — or else to one individual — the joint reading, as in (364). For the split reading, verbal agreement is plural, whereas for the joint reading, agreement is singular (Morgan 1972; Quirk et al. 1972; McCawley 1998; Wechsler and Zlatić 2003; King and Dalrymple 2004; Grosz 2015).

- (363) a. This man and woman **are** in love.
 b. This soldier and sailor **are** inseparable. (Heycock and Zamparelli 2005:204)
- (364) a. My friend and colleague **is** writing a paper.
 b. That liar and cheat **is** not to be trusted. (Heycock and Zamparelli 2005:204)

McCloskey (1991) discusses a similar phenomenon with CP subjects where verbal agreement depends on the semantic relation between the two conjoined CP propositions. When the two conjoined CPs denote mutually incompatible situations that represent alternatives to each other, plural agreement is preferred, as in (365a). On the other hand, when the conjoined CPs jointly denote a single complex situation, as in (365b), singular agreement is preferred.

- (365) a. That he'll resign and that he'll stay in office **seem** at this point equally possible.
 b. That the shares are overvalued and that a decline is in order **is/??are** widely believed on Wall St. (McCloskey 1991:564–565)

Given the discussion in the previous section, the reader may wonder whether split vs. joint

readings of conjoined nominals are simply partial vs. resolved agreement in another guise. I am not aware of work that aims to bridge this gap, i.e., work in the partial vs. resolved agreement literature (which tends to be syntactically focused) that studies referential effects of the agreement alternation; or work from the split vs. joint reading perspective that examines different syntactic environments where the conjoined nominal might occur. If indeed such work does not exist, it would seem a fruitful direction for future research.

In comparison to disjunctive agreement, split vs. joint readings of conjoined nominals display a different empirical profile. Although the issues discussed in Chapter 6 — where disjunctive agreement is sensitive to speaker evidence and pragmatic context — may well be connected to reference, the connection is certainly less transparent than with split vs. joint readings, which are defined in terms of reference. On the other hand, the availability of split and joint readings are not dependent on the larger semantic environment. For instance, split and joint readings are just as acceptable in polar questions and conditional antecedents, (366), as they are in unembedded statements like (363) and (364). As with the individual/degree-polysemous nominals discussed above, therefore, the kind of semantic sensitivity appears to be different between these different kinds of conjunctive agreement vs. with disjunctive agreement.

- | | | |
|----------|---|--------|
| (366) a. | Are this man and woman in love? | ✓split |
| b. | If this man and woman are in love, they will get married. | ✓split |
| c. | Is my friend and colleague writing a paper? | ✓joint |
| d. | If my friend and colleague is writing a paper, she will be unavailable this afternoon. | ✓joint |

Among nominals that alternate between different verbal agreement forms that they can control, the closest parallel with disjunctive agreement, as far as I can see, pertains to group-denoting nominals. Group-denoting nominals (also called ‘collective’ nominals) — such as *group*, *team*, and *government* — denote collective units composed of individual elements, and can control alternatively singular and plural agreement, as demonstrated in (367) (Barker 1992; Pollard and Sag

1994; Schwarzschild 1996; Munn 1999). (367a), which has singular agreement, is a statement about the age of the committee itself rather than of its constituent members; (367a) does not require that any individual committee member is old. On the other hand, (367b), which has plural agreement, is a statement about the age of the committee members; (367b) is true just in case the individual committee members are old – even if the committee was formed just the day before.

(367) a. The committee **is** old.

b. The committee **are** old. (Barker 1992:89)

We discussed in Section 3.1 how group-denoting nominals behave differently from disjunctive subjects in terms of coordinated verbs and anaphora. In this section, I wish to highlight a similarity: Sentences where group-denoting nominals control agreement have different scope possibilities depending on the verbal agreement form. In particular – just like with disjunctive subjects – sentences where group-denoting nominals control plural agreement are restricted relative to sentences where group-denoting nominals control singular agreement, in terms of what scope readings are available. This fact was first noted by Elbourne (1999) and Sauerland and Elbourne (2002), and is demonstrated in (368). The scope relation of interest in (368) is between the existential force of the indefinite group-denoting subject *a northern team* and the quantificational force of *likely*. With singular agreement, (368a), both scope configurations are possible: (368a) can alternatively mean that there is a particular northern team with a high chance to make the final, or that there is a high chance that out of the several northern teams, at least one makes the final. With plural agreement, (368b), only the first of these readings is possible.

(368) a. A northern team **is** likely to be in the final. $\checkmark \exists > \text{likely}, \checkmark \text{likely} > \exists$

b. A northern team **are** likely to be in the final. $\checkmark \exists > \text{likely}, * \text{likely} > \exists$

(Elbourne 1999:89)

Ivlieva and Podobryaev (2019) discuss a similar phenomenon in Russian, where certain quantified nominals can control both singular and plural verbal agreement, and again, plural agreement

is restricted in distribution:

- (369) a. Bol'she pjati pisem do adresata ne **došl-o**.
 more.than five letters to addressee not reached-NEUT.SG
 'There were more than 5 letters that didn't reach the addressee.'
 ✓more than 5 > not
 'At most 5 letters reached the addressee.' ✓not > more than 5
- b. Bol'she pjati pisem do adresata ne **došl-i**.
 more.than five letters to addressee not reached-PL
 'There were more than 5 letters that didn't reach the addressee.'
 ✓more than 5 > not
 *not > more than 5
 (Ivlieva and Podobryaev 2019:52)

To explain the data in (368), Sauerland and Elbourne (2002) and Smith (2015, 2017, 2021) argue that different types of number features are responsible for the different agreement forms that can be observed with group-denoting nominals. Singular agreement, as in (368a), results from agreement with the formal singular feature of the group-denoting nominal. Agreement with the formal singular feature does not restrict where the nominal can be interpreted. On the other hand, plural agreement, as in (368b), is due to agreement with a semantic plural number feature on the nominal. When agreement is with the semantic plural feature, interpretations are restricted, because semantic agreement requires that movement be visible to LF. The analyses diverge on what exactly is responsible for the restriction,⁵ but in both cases, the upshot is that semantic agreement leads to scope freezing, such that interpreting the group-denoting nominal in its base position is not possible. Syntactic agreement, on the other hand, does not freeze scope. Klingvall

⁵For Sauerland and Elbourne, the restriction is because semantic agreement requires movement that occurs before LF. For Smith, the restriction is because semantic agreement requires the agreement controller to c-command the agreement target at LF. In either case, the consequence is that *a northern team* must outscope *likely* in (368) in order for plural agreement to be possible.

(2018) also discusses evidence from Swedish that ϕ -agreement freezes scope.

The pattern in (368) and (369) recalls the pattern with plural-agreeing disjunction discussed in Chapter 2, namely that plural-agreeing disjunction also has restricted scope possibilities relative to other sentential operators, but singular-agreeing disjunction does not. Examples with comparatives and conditionals are shown in (370):

- (370) a. Ann grades more papers than Bob or Cal **does**. ✓Comp > $\exists$, ✓ $\exists$ > Comp
 b. Ann grades more papers than Sue or Ellen **do**. ✓Comp > $\exists$, * $\exists$ > Comp
 c. If Uncle Jim or Grandpa Jack **dies**, Alex will be rich. ✓if > $\exists$, ✓ $\exists$ > if
 d. If Uncle Jim or Grandpa Jack **die**, Alex will be rich. ✓if > $\exists$, * $\exists$ > if

The generalization that semantic agreement freezes scope appears promising for explaining the asymmetry in (370) as well: If we assume that plural disjunctive agreement is semantic agreement (see Himmelreich and Hartmann 2023), then it follows that when a disjunction controls plural agreement, the scope will be fixed — thus explaining the impossibility of wide-scope existential readings in (370b) and (370d). However, as we showed in Section 2.3, data like (370) do not tell the whole picture: Disjunction actually can take scope above another operator, provided it still scopes under a second. For example, the disjunctive subject can take existential scope out of the comparative in (371).

- (371) If Ann grades more papers than Bob or Cal **do**, then she's doing too much.
 ✓if > $\exists$ > Comp

Crucial data involving multiple scopal operators such as (371) — along with plural disjunctive agreement's NPI-like distribution and parallels with cross-sentential anaphora detailed in Chapter 4 — ultimately led me to the discourse referent-based analysis presented in Chapter 5, where plural agreement results from a syntactic head with downstream semantic effects. Still, the uncanny similarity between (368) and (370) — especially the fact that in both cases, it is plural agreement that is restricted semantically — beckons for a unified account. I hope that the present study

provides the groundwork for future work to this end.

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