University of Massachusetts Amherst
ScholarWorks@UMass Amherst

Doctoral Dissertations | Dissertations and Theses

October 2018

Typology of bizarre ellipsis varieties

David Erschler
University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/dissertations_2

Part of the Syntax Commons, and the Typological Linguistics and Linguistic Diversity Commons

Recommended Citation

Erschler, David, "Typology of bizarre ellipsis varieties" (2018). *Doctoral Dissertations*. 1337.
https://scholarworks.umass.edu/dissertations_2/1337

This Open Access Dissertation is brought to you for free and open access by the Dissertations and Theses at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctoral Dissertations by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

TYPOLOGY
OF BIZARRE ELLIPSIS VARIETIES

A Dissertation Presented

By

DAVID ERSCHLER

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 2018

Linguistics

© Copyright by David Erschler 2018
All Rights Reserved

TYPOLOGY
OF BIZARRE ELLIPSIS VARIETIES

A Dissertation Presented

By

DAVID ERSCHLER

Approved as to style and content by

_____
Kyle Johnson, Chair

_____
Alice Harris, Member

_____
Jeremy Hartman, Member

_____
Ellen Woolford, Member

_____
Luiz Amaral, Member

_____
Joe Pater, Department Head
Department of Linguistics

In memory of my brother Ilya Erschler (1960-2018)

ACKNOWLEDGEMENTS

First and foremost, I should like to thank the members of my committee: Kyle Johnson, Alice Harris, Ellen Woolford, Jeremy Hartman, and Luiz Amaral.

I thank Kyle for agreeing to be the chair of the committee and patiently bearing with me despite our vastly different perceptions of linguistics. It is impossible to express how much the current shape of this dissertation owes to his advice.

I have learned a lot from Alice. Her advice was instrumental in my decision to go to grad school in linguistic at a relatively late stage in my career. I have always immensely benefitted from her incisive comments to the writings I have shown to her.

I am immensely grateful to Ellen for constant encouragement. Her uncommon knack to discover unclarities and missing logical steps in a reasoning, and to suggest a way to restructure the text contributed much not only to improvement of my writing, but to my learning to think more clearly about my research.

Jeremy provided ample feedback on my work, not limited to what ended up in this dissertation, starting from early stages of the project.

I appreciate Luiz Amaral's willingness to become the external member of the committee, although unfortunately we did not have much chance to talk.

I am very grateful to the UMass faculty for the very stimulating and experience-rich years that I spent at the department. Apart from those whose name I have already mentioned, I would also like to especially thank Rajesh Bhatt, Seth Cable, Lisa Green, John Kingston, John McCarthy, Magda Oiry, Joe Pater, and Tom Roeper,

and, in the wider UMass community, Shmuel Bolotzky, Jim Cathey, and Rex Wallace. I thank Tom Maxfield and Michelle McBride for helping me to avoid multiple administrative pitfalls.

My transition from a mathematician to a linguist would have been impossible without the help of Yakov Testelets, Vladimir Plungian, Anna Dybo, Elena Kalinina, Tatiana Agranat, Nina Sumbatova, and Vitaly Volk. The cultural differences between the two fields, linguistics and mathematics, are immense. I could not have entered Western linguistics without the guidance and help of Barbara Partee. I thank Masha Polinsky for her mentorship and numerous stimulating discussions over all these years.

At the Linguistics Department of UMass, I would like to thank the members of my cohort: Caroline Andrews, Sakshi Bhatia, Ivy Hauser, Coral Hughto, Jyoti Iyer, Leland Kusmer, and Katia Vostrikova.

In and around the department, and in the vast panlinguistic world, for chats, company, and good company at conferences, I thank Daniel Altshuler, Natasha Aralova, Gašper Beguš, Lena Borise, Thui Buy, Lucas Champollion, Tracy Conner, Patrick Elliott, Javi Fernández-Sánchez, Rodica Ivan, Hsin-Lun Huang, Kaden Holladay, Natasha Korotkova, Peter Kusliy, Andrew Lamont, Sang-Im Lee-Kim, Lanko Marušič, Troy Messick, Claire Moore-Cantwell, Andy Murphy, Ayoub Noamane, Mark Norris, Deniz Özyıldız, Jérémy Pasquereau, Tanya Philippova, Ethan Poole, Brandon Prickett, Ezer Rasin, Alexander Rostovtsev-Popiel, Amanda Rysling, Adrian Stegovec, Rong Yin, Katia Vostrikova, Thomas Wier, Alena Witzlack-Makarevich, and Becky Wood. I thank Alexey Nazarov for his friendship and constant encouragement.

At various stages of the research culminating in this dissertation, I had an opportunity to discuss it with Peter Arkadiev, Jeroen van Craenenbroeck, Nomi Erteschik-Shir, Danny Fox, Lyn Frazier, Pavel Iosad, Jaklin Kornfilt, Idan Landau, Anikó Lipták, Ekaterina Lyutikova, Timur Maysak, Jason Merchant, David Pesetsky, Nina Radkevich, Pavel Rudnev, Peter Staroverov, Nina Sumbatova, Anna Szabolcsi, Sergey Tatevosov, Ekaterina Vostrikova, and Andrew Weir.

Much of the research presented here draws on Digor and Iron Ossetic, languages I have been working on continuously since 2007. My first field trip to Ossetia in 2007 was made possible by the help of Aslan Guriev. It proved to be a life-changing experience for me. Further fieldwork in Ossetia would have been impossible without the help of Elizaveta Kochieva. I am thankful to all those who shared their language with me over all these years: Arbilana Abaeva, Uruzmag Abaev, Aleta Bichilova, Tsara Dzhanaev, Sveta Gatieva, Aslan Kasaev, Artur Khachirov, Marina Khamitsaeva, Andzhela Kudzoeva, Elizaveta Kochieva, Khasan Maliev†, Vera Takazova, Chermen Takazov, and Fedar Takazov. I am deeply grateful to Madina and Soslan, two entirely fictitious characters, who were put into a multitude of awkward situations in constructed examples in the course of my more than a decade long work on Ossetic.

I thank Liza Dolidze, Natia Dundua, Ketevan Gadilia, Lasha Kokilashvili, and Giorgi Sakandelidze for the Georgian data, and Fr. Giorgi Chartolani, Irma Japaridze, Sveta Mchedliani, Archil Murghvliani, Maia Nakani, Nargiza Niguriani, and Lia Nikoloziani for the Svan data.

Collecting data for typological studies is an arduous task, and I thank all those who kindly provided data and judgments and data from their languages. I thank Murad Ziralov, Magomed Abdulganov, and Shamil Sadrudinov (Avar); Maame Appiah-Korang (Twi); Ayten Babalieva (Lezgian); Irina Bagirokova (Bzhedugh Adyghe); Tilman Beger, Hagen Blix, Alexander Göbel, Martin Haspelmath, Stefan Keine, and Agnes Korn (German); Sakshi Bhatia and Jyoti Iyer (Hindi); Andrey Boskhomdzhiev (Kalmyk); Thuy Bui (Vietnamese); Emiliana Cruz (Chatino); Boban Arsenijević, Jovan Damjanović, and Dejan Matić (Serbian); Ivan Derzhanski (Bulgarian); Maguette Diamé (Wolof); Lisbeth Heidemann Torfing and Rolf Stavnem (Danish); Stanisław Dunin-Horkawicz, Łukasz Jędrzejowski, Mateusz Koryciński, Aga Latos, and Krszysztof Migdalski (Polish); Ronny Hadani, Daniel Margulis, and Shahar Shirtz (Hebrew); Lena Hallonblad and Seppo Kittilä (Finnish); Sindhu Herur (Kannada); Hsin-Lun Huang (Mandarin); Henri Israelyan and Olya Yordanyan (Eastern Armenian); Monica Alexandina Irimia and Rodica Ivan(Romanian); Nikos Angelopouos and Natalia Kappos (Greek); Emmanuel Ethelbert Kari (Degema); Madzhid Khalilov (Bezhta); Kiyomi Kusumoto (Japanese); Adam Lafishev (Abaza); Gašper Beguš, Lanko Marušič, and Adrian Stegovec (Slovenian); Semen Makarov (Yakut); Nerea Madariaga and Jon-Ander Mendia (Basque and Spanish); Zarina Molochieva (Chechen); Rasul Mutalov (Dargwa); Marcia Naciamento (Kaingang); Alex Nazarov, Johan Rooryck, and Jenneke van der Wal (Dutch); Ayoub Noamane (Moroccan Arabic); Crisitane Oliveira (Brazilian Portuguese); Deniz Özyıldız (Turkish); Jeremy Pasquereau (French); Anne Tjerk Popkema (West Frisian); Daniel Sävborg (Swedish); Arzhaana Syuryun (Tyvan); Jana Taperte and Leonids Kotovics

(Latvian); Vittorio Tommelleri (Italian); and Chaim Welz (Yiddish). I am obliged to colleagues who elicited data from their field work languages for me: Peter Arkadiev (Lithuanian); Sergey Dmitrenko (Khmer); Nina Dobrushina and Stepan Mikhaylov (Rutul), Anna Howell (Samoan); Ivan Kapitonov (Kunbarlang); Maxim Makartsev (Albanian); Carlos Molina-Vital (Quechua); Nikolay Steblin-Kamensky (Amharic); Vera Tsukanova (Arabic); and Igor Vinogradov (Pokomchi). I thank Seth Cable, Monica Laura Lau, Ilya Serzhant, Ilya Sverdlov, and the staff of the Five College Language Center for helping me get access to speakers of a number of languages.

I thank Pavel Iosad, Ivan Kapitonov, Misha Knyazev, Pavel Rudnev, and Vitaly Volk for staying in touch.

Finally, I would like to thank my family for their support and understanding. My eldest brother, Ilya, passed away while I was writing this dissertation. I dedicate it to his memory.

ABSTRACT

TYPOLOGY OF BIZARRE ELLIPSIS VARIETIES

SEPTEMBER 2018

DAVID ERSCHLER

M.SC., INDEPENDENT UNIVERSITY OF MOSCOW

PH.D., TEL AVIV UNIVERSITY

PH.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Kyle Johnson

This dissertation deals with the typology and analysis of several types of ellipsis that have received little or no attention so far in the literature. The theoretical goal of the dissertation is to propose analyses of sluicing and gapping that will be able to account for cross-linguistic variation in this domain.

While the overall approach of the dissertation is typological, a particular focus is made upon data from Russian, Georgian (the South Caucasian language family), as well as Digor and Iron Ossetic (Iranian; Indo-European).

In the analysis of ellipsis, I follow extensive earlier literature in assuming that it is constituents that undergo deletion. The material that survives deletion is evacuated via movement at an earlier stage of derivation. As was proposed by Merchant (2001) building on Lobeck (1995), deletion is licensed by a dedicated

feature, E. In the original formulation, the E-feature is hosted by the head whose complement is to be deleted. However, Aelbrecht (2010) has shown that to make the account empirically adequate, one must allow two separate heads to be involved in the licensing: the head X^0 whose complement ZP is to be deleted and some higher head L^0. Somewhat modifying the original proposal of Aelbrecht's, I place the licensing E-feature on the higher head, L^0, and make it agree with the X^0 whose complement ZP is to be deleted.

I apply this formalism to two case studies to explore how it allows to derive the observed cross-linguistic variation. I will illustrate here the relevant constructions with schematic pseudo-English sentences.

The first case study deals with GAPPING – an ellipsis variety that removes the finite verb (together with the auxiliary, if there is one in the clause). Typically, gapping occurs in coordinations: *Mary keeps a dragon, and John a unicorn*. Languages vary in that whether the gapping site, i.e. the clause with a missing verb, and the antecedent may be separated by a CP boundary: **Mary keeps a dragon, and rumor has it [that John a unicorn]*. While sharply ungrammatical in English, the translational equivalent of this sentence in Russian or Georgian is fully acceptable. In chapter 4, I demonstrate that this construction is present in a number of languages; and show that licensing by agreement can account for this variation in a principled manner. I connect the presence or absence of embeddable gaps in a given language with the locus of the licensing feature. If only the $\&^0$ head is able to host the E-feature, we obtain English-like gapping. On the other hand, if the E-feature can be hosted in the left periphery of the clause that contains the gap, say, by Top^0 head, we obtain the pattern gapping that

is observed in Russian or Georgian. I show that predictions of this analysis are consistent with observed facts.

The second case study deals with a generalization of sluicing to alternative and polar questions. Recall that regular sluicing is a construction where only the wh-phrase is retained from an (embedded) wh-question: *Mary caught something, but I don't know what animal*. In this dissertation, I explore constructions of the following type. For alternative questions, it is **Mary caught something, but I don't know whether a dragon or a unicorn.* The intended meaning is: 'Mary caught something, but I don't know whether she caught a dragon or a unicorn.'. I call such a construction an Alt-sluice. For polar questions, I consider constructions of the type **Mary caught something, but I don't know whether a dragon.* The intended meaning is 'Mary caught something, but I don't know whether she caught a dragon.' I call these Pol-sluices. I show that Alt- and Pol-sluices share all basic properties with regular sluices. I demonstrate that the following implicational universal holds.

- If a given language allows Pol-sluicing, it allows Alt-sluicing.
- If a given language allows Alt-sluicing, it allows regular sluicing.

I verify this universal against a sample of about 60 languages, and propose an analysis of embedded questions that, together with the licensing by agreement approach, derives this universal. Specifically, I propose that the left periphery of an embedded question hosts a hierarchy of heads, [Q_{WH} [Q_{ALT} [Q_{POL} …]…]. The head Q_{POL} is merged in all questions; Q_{ALT} is merged on top of Q_{POL} in alternative questions; and Q_{WH} is merged on top of Q_{ALT} in wh-questions. I show that the agreement-based approach derives the universal if we assume that the E-feature can be only hosted by a Q head of one type

in a given language. If the hosting head is Q_{WH}, we obtain a language like English, where only regular sluicing is possible. If the hosting head is Q_{ALT}, sluicing will be possible in alternative questions as well. Finally, if it is Q_{POL}, sluicing will be possible in all the three types of questions.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS……v

ABSTRACT……x

LIST OF TABLES……xx

LIST OF ABBREVIATIONS……xxi

CHAPTER

1. INTRODUCTION……1

1.1 Ellipsis……1

1.2 Derivation of ellipsis……2

1.3 Case study 1: Gapping……3

1.4 Sluicing in Wh- and Non-Wh-Questions……9

1.5 Languages of the study……10

1.6 Roadmap……11

2. THE LANDSCAPE OF ELLIPSIS……12

2.1 Introduction……12

2.2. Taxonomy of ellipses……13

2.2.1 Ellipsis within the noun phrase……13

2.2.2 Argument omission……15

2.2.3 Verb phrase ellipsis……17

2.2.3.1 Modal complement ellipsis……18

2.2.4 Gapping, pseudogapping, subgapping,

and right node raising……19

2.2.4.1 Gapping……19

2.2.4.2 Pseudogapping……22

2.2.4.3 Subgapping……23

2.2.4.4 Right node raising……24

2.2.5 Ellipsis in comparative constructions……24

2.2.6 Stripping……25

2.2.7 Ellipses involving negation……26

2.2.8 Sluicing……28

2.2.8.1 Classical Sluicing……28

2.2.8.2 Pseudosluicing……30

2.2.8.3 Generalizations of Sluicing beyond Wh-questions……31

2.2.9 Fragments……32

3. THE THEORETICAL FRAMEWORK……34

3.1. Accounts of ellipsis……34

3.2. Move and Delete approach to ellipsis……41

3.3. Licensing ellipsis: E-features……47

3.4. Licensing by agreement……51

3.5. Conclusion……54

4. GAPPING……56

4.1. Introduction……56

4.2. Empirical properties of gapping……60

4.2.1 Presence of gapping in a given language……60

4.2.2 Properties of gapping according to previous literature……62

4.2.3 Cross-linguistic properties of gapping……67

4.2.3.1 Contrast and choice of conjunctions……67

4.2.3.2 Parallelism between the antecedent

and the gapping site……73

4.2.3.3 Tense, aspect, and mood……76

4.2.3.4 Voice……80

4.2.3.5 Polarity……80

4.2.4 Summary……84

4.3. Analyses in previous literature……84

4.3.1 Across the Board movement analyses……85

4.3.2 LF copying type analyses……87

4.3.3 Move & Delete analyses……88

4.3.4 Summary……89

4.4. Proposal……89

4.4.1 Creating the remnant……89

4.4.2 Licensing deletion: E-feature on &^{0}……94

4.4.3 Embedded gapping with the E-feature on &^{0}……102

4.4.4 Low licensing of deletion: E-feature on Top^0……107

4.5. Predictions……108

4.5.1 Gaps in islands……108

4.5.2 Gapping in the absence of coordination……..……..112

4.5.3 The antecedent and the gap embedded

under separate matrix verbs……..……..116

4.5.4 Directionality of ellipsis……..……..118

4.5.5 Summary……..……..125

4.6. Size of the deleted constituent……..……..127

4.7. Size of conjuncts under gapping……..……..129

4.7.1 Methods of estimating the size of conjuncts……..……..130

4.7.2 Size of conjuncts in languages with high licensing

of gapping……..……..132

4.7.3 Size of conjuncts in languages with low licensing

of gapping……..……..137

4.8. Applying the analysis to specific languages……..……..147

4.9. Potential alternative analyses……..……..151

4.9.1 Gapping or pseudogapping……..……..151

4.9.2 Deep or surface ellipsis?……..……..156

4.10. Directions for further research……..……..158

4.10.1 Standing challenge: Directionality of gapping……..158

4.10.2 The role of semantic parallelism in licensing

of gapping……..……..160

4.10.3 Constructions similar to gapping……..……..162

4.11. Conclusion……..……..164

5. TYPOLOGY OF SLUICING IN WH- AND NON-WH-QUESTIONS……165

5.1. Introduction: Sluicing beyond English and wh-phrases……165

5.2. Why are Pol-sluicing and Alt-sluicing indeed related

to sluicing?……171

5.2.1 Pol-sluicing: Russian……172

5.2.2 Alt-sluicing: Georgian……177

5.3. Relation between the 3 types of sluicing……181

5.4. How to make sense of these facts?……191

5.4.1 Failure to front as an obstacle to sluicing……192

5.4.2 Failure to elide……193

5.4.3 Role of embedding in sluicing……195

5.5. Feature-triggered deletion……200

5.6. Deriving the universal……203

5.6.1 A syntactic explanation of the universal:

a hierarchy of interrogative heads……204

5.6.2 A semantic explanation of the universal:

The Contents of the E-feature……207

5.6.2.1 Identity with the antecedent……207

5.6.2.2 Conditions on the embedded question……208

5.7. Syntax of questions……211

5.7.1 Sluicing in polar questions……211

5.7.2 Sluicing in alternative questions……214

5.7.2.1 Derivation of alternative questions……214

5.8. Conclusions……219

REFERENCES……221

LIST OF TABLES

Table **Page**

1. Parameters of variation and predictions ……..8

2. Languages representing the types ……8

3. Parameters of variation and predictions ……..126

4. Languages representing the types ……..126

5. Types of generalized sluicing cross-linguistically ……182

LIST OF ABBREVIATIONS

ABL	Ablative
ACC	Accusative
AGR	Agreement
ALL	Allative
AOR	Aorist
ASP	Aspect
AUX	Auxiliary
CL	Clitic
COM	Comitative
COMP	Complementizer
COP	Copula
CTR	Contrastive
CVB	Converb
DAT	Dative
DEF	Definite
DYN	Dynamic
EMP	Emphatic
ERG	Ergative
F	Feminine
FOC	Focus marker
FUT	Future
GEN	Genitive

HAB	Habitual
IND	Indicative
INF	Infinitive
INS	Instrumental
INT	Interrogative
IPF	Imperfective
IRR	Irrealis
LAT	Lative
LOC	Locative
M	Masculine
NEG	Negation
NOM	Nominative
NMZ	Nominalizer
OBL	Oblique
PF	Perfective
PL	Plural
PREP	Prepositional
PRS	Present
PRT	Particle
PRTC	Participle
PRV	Preverb
PST	Past
Q	Interrogative

QUOT	Quotative
REL	Relativizer
S	Subject
SG	Singular
SM	Subject marker
SUP	Superessive
TAM	Tense-Aspect-Mood
TOP	Topic

CHAPTER 1

INTRODUCTION

1.1 Ellipsis

A comprehensive formal definition of ellipsis is difficult, and perhaps impossible, to give. To quote van Craenenbroeck & Merchant (to appear), "Ellipsis phenomena – or deletions, in traditional generative terms – involve a number of cases where otherwise expected material goes missing under some conditions". A formalization of "going missing" is non-trivial and admittedly theory-dependent. This dissertation, along with much of the current generative research on ellipsis, will focus on cases when it can be demonstrated that the unpronounced material was present at some earlier stage of derivation.

Since the late 1960s, especially since the seminal dissertation Ross (1967), the study of ellipsis has occupied the center stage in generative syntax. Until the late 1990s – early 2000s, however, only very few languages were systematically investigated, with English data playing a disproportionately large role in theoretical arguments. This has led, on the one hand, to the increasing sophistication of proposed analyses, but, on the other hand, it has restricted the range of commonly addressed ellipsis phenomena to those typical of English. A closer look at ellipsis in lesser-studied languages immediately reveals a plethora of ellipsis varieties that have been almost completely overlooked in the theoretical literature so far.

In this dissertation, I use data from a range of less commonly analyzed languages to argue for a specific theoretical approach to ellipsis. I will test this

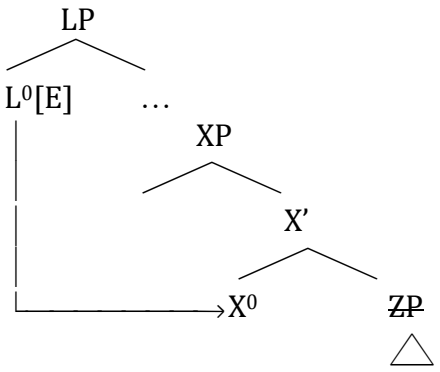
approach against two ellipsis varieties, neither of which is attested in English: verb deletion in embedded clauses (which I will call "embedded gapping"), and ellipsis in embedded polar and alternative questions (which I will call "Pol-sluicing" and "Alt-sluicing", respectively).

In the rest of this introduction, I overview the main ideas and findings of the dissertation in more detail.

1.2 Derivation of Ellipsis

I follow extensive earlier literature in assuming that it is constituents that undergo deletion. The material that survives deletion is evacuated via movement at an earlier stage of derivation. As was proposed by Merchant (2001) building on Lobeck (1995), deletion is licensed by a dedicated feature, E. In the original formulation, the E-feature is hosted by the head whose complement is to be deleted. However, Aelbrecht (2010) has argued persuasively that to make the account empirically adequate, one must allow two separate heads to be involved in the licensing: the head X^0 whose complement ZP is to be deleted and some higher head L^0. Somewhat modifying the original proposal of Aelbrecht's, I place the licensing feature on the higher head, L^0 in (100), and make it agree with the X^0 whose complement ZP is to be deleted.

(1)



A key novel ingredient that I introduce that an E-feature of a given type can be hosted by different heads in different languages. I propose that the variation in the locus of the feature is one of the main sources of observable cross-linguistic variation in the realm of ellipsis.

1.3 Case study 1: Gapping

Under gapping, the lexical verb and the auxiliary, if there is any, are missing, but the sentence would remain grammatical should they be reconstructed. This is illustrated by the English sentence in (2a), and the Russian and Dutch ones in (2 b-c).

(2) a. Some will eat beans, and others ~~will eat~~ rice.

b. Russian
Vasja p^{j}jot vodku a Oleg ~~p^{j}jot~~ samogon
Vasya drinks vodka.ACC CTR Oleg drinks moonshine.ACC
‘Vasya drinks vodka and Oleg moonshine.’

c. Dutch

Karel	schrijft	met	een	potlood	en
K.	writes	with	a	pencil	and
John	~~schrijft~~	met	een	pen	
J.	writes	with	a	pen	

'Karel writes with a pencil and John with a pen.' Neijt (1979: 19)

One of the key observations about gapping has been that in the languages examined in the earlier literature a gapping site cannot be embedded while its antecedent is located in a superordinate clause, Hankamer (1979) and the subsequent literature. This is illustrated in (3a) for English and in (3b) for Dutch. This property has been taken as one of defining properties of gapping, Johnson (2014).

(3) a. *Some ate mussels, and she claims that others ~~ate~~ shrimp.
Johnson (2009)

b. Dutch

*Peter	houdt	van	bananen,	en	ik	denk
Peter	likes	of	bananas	and	I	think
dat	Jessica	van	peren.			
COMP	J.	of	pears			

*'Peter likes bananas and I think that Jessica pears.'
Aelbrecht (2007)

In the recent years, however, a number of counterexamples have been discovered to this generalization. Embedded gapping is illustrated in (4). It is worth noting that in both sentences in (4), a complementizer is present in the clause that hosts gapping, which shows that it's indeed an embedded clause rather than a direct quotation.

(4) a. Georgian

ia	svams	čais	da	vpikrob	[**rom**	uča	ɣwinos]
Ia	drinks	tea	and	I.think	COMP	Ucha	wine

'Ia drinks tea and I think that Ucha (drinks) wine.'

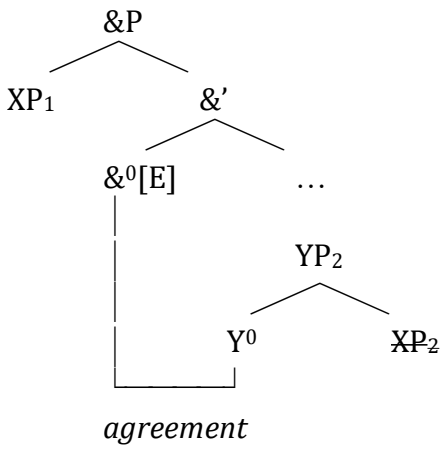
b. Russian

Vasja	p'jot	samogon	i	mne	kažetsja
Vasya	drinks	moonshine.ACC	and	I.DAT	seems
[**što**	Oleg	vodku]			
COMP	Oleg	vodka.ACC			

'Vasya drinks moonshine and it seems to me that Oleg (drinks) vodka.'

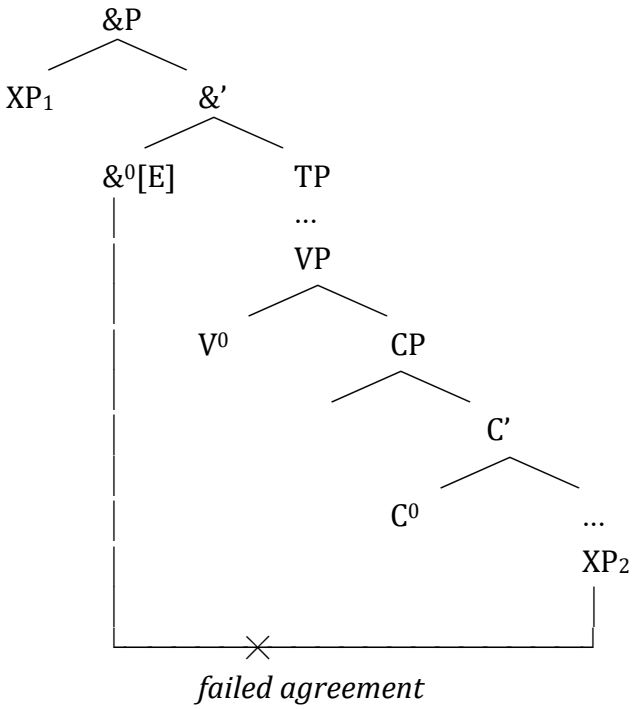
Applied to gapping, the idea that I explore is that languages vary in where the E-feature is situated that is responsible for gapping. In languages such as English or Dutch that mostly restrict gapping to coordinations, the E-feature is hosted by $\&^0$ – I will call this "high" licensing of gapping (5).

(5)



Now, if the gapping site is *embedded* in a finite clause and the E-feature is hosted on $\&^0$, agreement fails to occur for locality reasons (6). Consequently, embedded gapping in such languages is predicted to be ungrammatical.

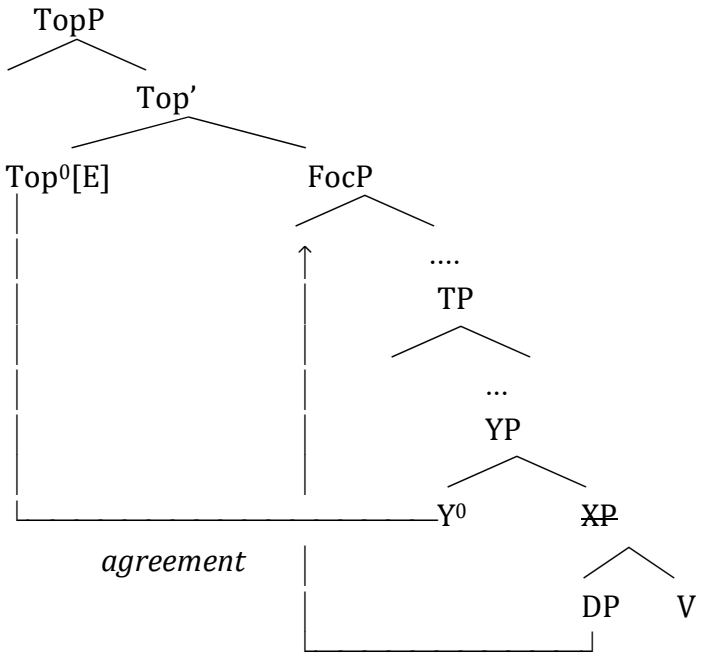
(6) a.



b. *Mary drinks tea and I think [that John ~~drinks~~ coffee]

To account for embedded gapping in the languages where it can occur in islands, I propose that the E-feature is hosted in such languages in the left periphery of the gapping clause itself, say, by Top^0, as schematized in (7).

(7)



We immediately rule in embedded gapping, as agreement is no longer impeded by locality.

Let us summarize the predictions our system makes for various types of languages. The relevant parameters are the locus of the E-feature, the size of the left periphery in the hosting clause, and the ability of the material to be deleted to move out of an embedded clause.

The size of the left periphery plays a role because the left periphery must provide a landing site for the movement of the remnant that feeds deletion.

Table 1 presents the resulting typology. Table 2 gives a list of languages that realize each of the resultings types. It is worth noting that there is considerable inter-speaker variation when judgments about embedded gapping are concerned.

Table 1. Parameters of variation and predictions

Height of E-feature	Size of left periphery	Movement out of embedded clause	Gapping in embedded non-islands	Gapping in islands	Type of Language
High ($\&^0$)	Irrelevant	Impossible	*	*	I
High ($\&^0$)	Large	Possible	ok	*	I a
Low (Top^0)	Large	Irrelevant	ok	ok	II

Table 2. Languages representing the types.

Type I	English; Dutch; German; Serbian; Slovenian.
Type Ia	Persian as described by Farudi (2013); Complementizerless clauses in English and Dutch
Type II	Russian; Georgian; Svan; Digor Ossetic; Iron Ossetic; Polish; Spanish, Hebrew

For some of the languages that exhibit embedded gapping of some sort, more data are necessary to assign them to one of the classes. This concerns Hungarian, Hindi (for speakers who allow embedded gapping), Eastern Armenian, Finnish, and Albanian.

Another, completely independent, parameter of variation is the extent to which polarity, tense, aspect, and modality should coincide between the antecedent and the gap. What controls the effects of this type is the size of the deleted constituent, Merchant (2013).

1.4 Sluicing in Wh- and Non-Wh-Questions

Among the major empirical breakthroughs of the 20th century linguistics there were the discovery of implicational universals by Greenberg, and, within a fairly different intellectual tradition, Ross' (1967, 1969, 1970) discovery of a wealth of new syntactic phenomena. In the course of the last two decades, these approaches have been fruitfully combined in a quest to find, and explain, implicational universals connecting newly discovered syntactic phenomena, see, e.g., Baker (2005, 2008, 2015); Bošković (2009); Harbour (2016), and Woolford (1999, 2006). In this dissertation, I implement this research program in the domain of embedded questions and ellipsis. Specifically, I formulate, and propose a derivation of, an implicational universal that predicts a relation between sluicing in embedded wh-questions, alternative questions, and polar questions in a given language.

Let us call *Pol-sluicing* the construction exemplified in (8a) and *Alt-sluicing* the construction exemplified in (8b). Although severely ungrammatical in English, crosslinguistically they fare quite well.

(8) Pseudo-English

a. Mary cooked something, but I don't know *whether rice*.
Intended reading: 'Mary cooked something, but I don't know whether it is rice that she cooked.'

b. Mary cooked something, but I don't know *whether rice or beans*.
Intended reading: 'Mary cooked something, but I don't know whether she cooked rice or whether she cooked beans.'

The cross-linguistic data I have collected (currently, the sample comprises about 60 languages) support the following implicational universal.

(a) **Pol ⇒ Alt**
If a language allows Pol-sluicing, it will allow Alt-sluicing.

(b) **Alt ⇒ Wh**
If a language allows Alt-sluicing, it will also allow regular sluicing.

I propose a derivation for Alt- and Pol-sluices from which this universal naturally follows. The derivation is again couched in the framework of agreement-based deletion licensing. An abridged earlier version of this chapter with a different analysis appeared as Erschler (2017).

1.5 Languages of the study

While large language samples are used here whenever possible, the bulk of the data come from Russian and from several head-final languages of the Caucasus: Georgian, a member of the South Caucasian family; as well as Digor Ossetic, and Iron Ossetic, Iranian languages closely related to each other and rather distantly to the other Iranian languages.

For an overview of the South Caucasian languages, a small language family autochthonously only spoken in the Caucasus, see Boeder (2005). The Ossetic languages, although Indo-European and therefore genetically unrelated to the South

Caucasian, show nevertheless some typological similarities to the latter due to extensive contacts, see Erschler (2012a) and Erschler (to appear).

1.6 Roadmap

- Chapter 2 lays out the general empirical landscape of ellipsis inasmuch as it is relevant for the treatmet of the case studies addressed later in the work.

- Chapter 3 introduces the theoretical framework of this dissertation. It motivates the deletion-based approach to ellipsis and presents agreement-based ellipsis licensing, a key technical ingredient of the case studies in Chapters 4 and 5.

- Chapter 4 applies the framework introduced in Chapter 3 to a cross-linguistic study of gapping.

- Chapter 5 addresses typology of sluicing.

CHAPTER 2

THE LANDSCAPE OF ELLIPSIS

2.1 Introduction

The purpose of this chapter is to overview several major types of ellipsis often discussed in the literature and to introduce the relevant terminology and notation. Although the theoretical validity of the respective taxonomic categories is not necessarily clear, they nevertheless can serve as a source for convenient, even if not theoretically valid, labels to use in a discussion of ellipsis.

Throughout this dissertation, I will indicate ellipsis with the strikethrough. When translating elliptic constructions that are ungrammatical or nearly ungrammatical in English, I will sometimes use the strikethrough in a grammatical English translation, as illustrated in the Avar multiple sluicing example in (9).

(9) Avar (Northeast Caucasian)

kinalgo	ɬimalaz	co-co	žo	b-aq͡χ:ana
all	kids.ERG[1]	one-one	thing(III[2])	III-draw.PST
amma dida	ɬala-ro	ɬic:a	š:i-žo	~~b-aq͡χ:ana~~
but I.SUP	know-NEG	who.ERG	what-thing	III-draw.PST

'All the kids drew something, but I don't know who ~~drew~~ what.'

[1] Glosses: ABL ablative; ACC accusative; AGR agreement; ALL allative; AOR aorist; COM comitative; COMP complementizer; COP copula; CTR contrastive topic; CVB converb; DAT dative; DEF definite; DYN dynamic; EMP emphatic; ERG ergative; GEN genitive; HAB habitual; INF infinitive; INS instrumental; IPF imperfective; LAT lative; LOC locative; NEG negation; NOM nominative; OBL oblique; NMZ nominalizer; PF perfective; PL plural; PRT particle; PRTC participle; PRV preverb; PST past; Q interrogative; QUOT quotative; S subject; SUP superessive; TOP topic.

[2] Roman numerals are used to gloss genders (also called noun classes) in Northeast Caucasian languages.

To specify the terminology, I will refer to the clause where a part is deleted as an ELLIPSIS SITE. The lexical material that is present in the ellipsis site will be called REMNANTS. The lexical material in the antecedent that corresponds to a given remnant will be called the CORRELATE of that remnant. In (9), *łic:a š:i-žo* ~~*b-aq͡χ:ana*~~ 'who drew what' is the ellipsis site, *łic:a* who.ERG and *š:i-žo* what.thing are the remnants, whose correlates are *kinalgo łimalaz* 'all kids.ERG' and *co-co žo* 'one-one thing', respectively.

2.2. Taxonomy of ellipses

It is a daunting task to provide a comprehensive taxonomy of ellipses, and this section only addresses the varieties more commonly discussed in the theoretical literature. For recent state-of-the-art overviews of research on ellipsis see Merchant (2013) and Merchant & van Craenenbroeck (2013). Sometimes, constructions resembling ellipsis do not actually involve unpronounced syntactic structure. Some such instances are illustrated below in (17) and (18) in Section 2.3. For a systematic overview of the properties used to diagnose the cases of true ellipsis and the reasoning behind these diagnostics, see Merchant (2013, to appear).

2.2.1 Ellipsis within the noun phrase

The head noun may go missing in a noun phrase[3], stranding the rest of it.

[3] For the time being, I stay agnostic as to whether all the languages under consideration project a DP; many of them lack overt articles.

(10) a. Mary is holding a black tulip, and Sue **a yellow one.**

b. The cat ate Mary's tulip, and the dog **Sue's**.

Completely descriptively, a stranded piece of an NP may be morphologically marked in different ways. First, it may appear with its regular morphology (i.e. the morphology that would be used in the presence of an overt head noun) and without a proform for the missing head noun like *Sue's* in (10b) and *rooie* 'red' in (11). Second, it can be marked with some morphology which would be absent without ellipsis. Third, it may appear together with a noun proform, such as *one* in the English sentence in (10a).

(11) Dutch

Ik	heb	een	groen-e	fiets	en	jij	**een**	**rooi-e**
I	have	a	green-AGR	bike	and	you	a	read-AGR

~~fiets~~.
bike
'I have a green bike, and you a red **one**.' Corver & Van Coppen (2009) Dutch

Dutch illustrates the strategy of using special morphology: for non-agreeing nouns, the agreement marker emerges on the adjective under ellipsis. For instance, regularly, the noun *konijn* 'rabbit' does not trigger agreement with an adjective in an indefinite DP.

(12) Dutch

een	wit-(*e)	konijn
a	white-AGR	rabbit

Dutch

However, to license deletion, the stranded adjective must bear agreement morphology, notice the agreement marker *-e* on the adjective *zwart-e* 'black' in (13).

(13) Dutch

Jan	heeft	[een	**wit**	konijn]	gekocht	en	Marie	heeft
Jan	has	a	white	rabbit	bought	and	Marie	has
[een	zwart-**e**	~~konijn~~]	gekocht					
a	black-AGR	~~rabbit~~	bought					

'Jan bought a white rabbit and Marie bought a black one.'
Corver & Van Coppen (2011: 374)

Furthermore, the marking strategy used in the language may depend on what is stranded: a possessor, an adjective, a quantifier, etc. For instance, this is so in English:

(14) a. Jill rides an old bike, and John repairs a new **one**.

b. Jill rides Jim's bike, and John repairs Jun's (***one**).

An additional challenge is to determine whether an incomplete noun phrase is actually a result of ellipsis, see the discussion in Saab (to appear) and in van Craenenbroeck & Merchant (to appear). Deletion of the head noun is not easy to distinguish from situations when a stranded modifier gets converted into a noun.

2.2.2 Argument omission

I will mostly leave out argument omission, although the topic played a prominent role in the early studies of ergativity in the Northeast Caucasian languages (by Alexander Kibrik and his co-authors), and is relatively often discussed in grammars: this

phenomenon is very hard to tell apart from occurrences of phonologically null arguments, see a discussion of this point in the case of Tsakhur in Testelets (1999). That said, argument drop is very frequent in many languages of the Caucasus, even in those that lack any overt agreement. In the Aghul sentence in (15a), both the subject and the object are dropped in the main clause 'he tied it to a goat' and in the dependent clause 'having brought the baby back', while in the Iron Ossetic sentence in (15b), the direct object 'letter' is missing in the second conjunct. The missing arguments are denoted here by *e*. I stay agnostic as to the nature of this phenomenon or phenomena, *cf*. a discussion in Takahashi (2008) of analytic possibilities and challenges to them in the case of similar phenomena in Japanese.

(15) a. Aghul (Lezgic, Northeast Caucasian), Maysak (2014: 130)

e_1	e_2	waχ.a-n	χaw	e_1	sa	c'eʜ.ala-l	e_2
		carry.PF-GEN	back		one	goat-SUP	

alart:u-naw
tie.PF-AOR
'(The shepherd$_1$) carried (the baby$_2$) back and tied (it) to a goat.'

b. Iron Ossetic

ɐž	p'išmo	nɐma	nə-ffəš-ton	šošlan=ta
I	letter	not.yet	PRV-write-PST.1SG	Soslan=CTR

e nə-ffəš-ta
PRV-write-PST.3SG
'I haven't yet written a letter, and Soslan has written ~~a letter~~.'

Another phenomenon that creates a semblance of argument ellipsis is V-stranding verb phrase ellipsis[4], see e.g. Goldberg (2005) and Gribanova (2013). Under this type of ellipsis, the verb evacuates from the VP, after which the VP is deleted. Tests used

[4] Admittedly, the existence of verb-stranding VPE is not undisputed, see Erteschik-Shir, Ibnbari & Taube (2013) and Landau (2018).

to detect V-stranding VPE are rather subtle and fall beyond the scope of the current chapter.

2.2.3 Verb phrase ellipsis

The prototypical verb phrase ellipsis (VPE) is attested in English (16): descriptively, an entire verb phrase is deleted in such cases, and what surfaces is only an appropriate form of the auxiliary or the infinitival *to*, bolded in the examples in (16). In terms of structure, the vP is deleted, while T^0, the head of the tense phrase is spelled out.

(16) a. Elves don't practice necromancy and trolls **do** ~~practice necromancy~~.

b. The elf has written a novel and the troll **has**n't ~~written a novel~~.

c. I wanted to pet the porcupine but the keeper didn't allow me **to** ~~pet the porcupine~~.

VPE in this narrow sense is very rare cross-linguistically, and much effort has been made to discover phenomena where deletion of the VP or vP is involved in languages other than English. Here, I list several phenomena that have been argued in the literature to involve VP or vP deletion.

VPE should not be confused with pragmatically controlled absence of a VP complement, where no hidden syntactic structure is detectable (17), see the discussion in Hankamer & Sag (1976) and Shopen (1972).

(17) [Indulgent father feeds baby chocolate bar for dinner.]
Mother: I don't approve.
Hankamer & Sag (1976: 411)

The same holds for *do it* or *do so* anaphora (18): see the discussion in Hankamer & Sag (1976) for the former, and in Houser (2010) for the latter.

(18) Steve has eaten an apple, and . . . [5]
a. John has done it, too.

b. John has done so, too. Houser (2010: 1).

2.2.3.1 Modal complement ellipsis

One relatively crosslinguistically common phenomenon is modal complement ellipsis (19): in (19a), the complement of *kan* 'can' is missing, and in (19b), the complement of *want*. The name of this ellipsis variety is self-explanatory. This phenomenon is essentially identical to VPE, as has been recently argued by Aelbrecht (2012) on the basis of Dutch data.

(19) a. Dutch Aelbrecht (2012: 1)
Roos wil Jelle wel helpen maar ze kan niet
Roos wants Jelle PRT to.help but she can NEG
'Roos wants to help Jelle, but she can't.'

b. Mag Wildwood wants to read Fred's story, and I also want to.
Johnson (2001)

[5] The VPE counterpart of these sentences will be

(i) Steve has eaten an apple, and John **has**, too.

As we will see below in Chapter 2, there are reasons to postulate the exstistence of silent structure in null modal complements.

2.2.4 Gapping, pseudogapping, subgapping, and right node raising

Gapping, Pseudogapping, and Right Node Raising (RNR) are theoretically distinct phenomena that are not necessarily easy to tell apart empirically in head final languages. This motivates treating them in a single subsection here.

2.2.4.1 Gapping

Gapping in English is illustrated in (20). Under gapping, the lexical verb is deleted, together with the auxiliary if there is one in the clause. The correlate and the elided verb do not need to match in number and person and, accordingly, in the phonological form. In English, the correlate must precede the elided verb.

(20) a. Mary drinks coffee and the kids/you ~~drink~~ tea.

b. Mary was drinking coffee and the kids/you ~~were~~ ~~drinking~~ tea.

In some languages, a similar process can proceed backwards, as illustrated in (21) for Dutch embedded clauses.

(21) Dutch Neijt (1979: 16)

Max	zei	dat	Jan	~~at~~	een	appel	en	Peter	een	peer
Max	said	that	Jan	ate	an	apple	and	Peter	a	pear
at										
ate										

'Max said that Jan ~~ate~~ an apple and Peter ate a pear.'

We will discuss backward gapping in more detail in Sections 3.5.5 and 3.10.1 of Chapter 3.

Negation under gapping is claimed, since Siegel (1984), to be able to have two different scopes. Suppose that the negative marker is in the first conjunct, and the conjunction is of the form ~Q & P. Under the "wide scope", the reading is "it is not the case that the situation P & Q takes place (P and Q are parts of the same situation). Under the "distributed scope", the reading is "it is not the case that P takes place and it is not the case the Q takes place. P and Q are independent situations". The wide scope reading is hard to impossible to get in many languages other than English (see a discussion in Winkler (2005) and Repp (2013) for German), and I will largely disregard it in this work. *Mutatis mutandis*, all this is also applicable to modals in the first conjunct.

Now, to obtain distributed scope readings, languages vary as to whether negation may be gapped alongside with the verb, Repp (2009). While this is possible and, indeed, obligatory in Russian (22a), Dutch (22b) and German require negation to be retained in the gapping clause.

(22) a. Russian

maša	ne	pila	moloko	a	vasʲa	(*ne)	pivo
Masha	NEG	drank	milk	CTR	Vasya	NEG	beer

'Masha didn't drink milk, and Vasya didn't drink beer.'

b. Dutch

Joop	heeft	de	vis	niet	opgegeten
Joop	has	the	fish	not	eaten.up
en	Jaap	het	vlees	*(niet)	
and	Jaap	the	meat	not	

'Joop hasn't finished the fish, and Jaap the meat.

In English and some other well studied languages, the clause with gapping cannot be embedded separately from its antecedent (23a), and this was widely believed to be one of the fundamental properties of gapping. However, it has recently been shown by Farudi (2013) that in Persian, gapping can occur in embedded clauses (23b).

(23) a. *Alfonse stole the emeralds and I think (that) Mugsy ~~stole~~ the pearls. Hankamer (1979: 19).

b. Persian, Farudi (2013: 76)

Mæhsa	in	ketab-ro	dust	dar-e	va	Minu
Mahsa	this	book-ACC	like	have-3SG	and	Minu
mi-dun-e	[ke	maman-eš	un	ketab-ro]		
IPF-know-3SG	COMP	mother-3SG	that	book-ACC		

'Mahsa likes this book and Minu knows that her mother (likes) that book.'

In chapter 3, we will systematically address the cross-linguistic behavior of gapping and analyses of gapping in the literature.

2.2.4.2 Pseudogapping

Another construction akin to gapping is *pseudogapping*, for a detailed discussion see e.g. Gengel (2013), Thoms (2016), and references there. Pseudogapping occurs in tenses that require an auxiliary, such as the English future or progressive. Under pseudogapping, the lexical verb is deleted while the auxiliary in the appropriate morphological form is retained (24). Pseudogapping differs from verb phrase ellipsis in that all syntactic material in the vP other than the lexical verb may be retained, and from gapping, in that the auxiliary is retained, while under gapping both the lexical verb and the auxiliary, if present, must be deleted. Not all speakers of English accept pseudogapping sentences.

(24) I'm not citing their analysis so much as I **am** ~~citing~~ their data. Levin (1986:12) via Gengel (2013: 10).

Pseudogapping is rare cross-linguistically, and so far has been mostly discussed in the literature on the basis of English data. Gengel (2013) reports that pseudogapping is grammatical in Norwegian and Danish[6], as well as in Icelandic, and, possibly, in European Portuguese and French. Analyses of pseudogapping proposed in the literature are similar to those of gapping, see an overview in Gengel (2013).

[6] But not in Swedish.

2.2.4.3 Subgapping

Subgapping is, in a sense, a mirror image of pseudogapping: under subgapping, the auxiliary or modal is deleted in the second conjunct while the main verb is retained. Subgapping has been described in English (25 a-b), German (25c), and Dutch (25d), see Lechner (2004: 106) and references there. It is possible in Russian as well, (25e). It is apparently unknown at present how widespread the phenomenon is cross-linguistically.

(25) a. John is sewing, and Bill ~~is~~ knitting. Lechner (2004: 106)

b. John can't go out, and Mary ~~can't~~ stay at home. Frazier (2015)

c. German
Ich muss ausgehen und du ~~musst~~ zuhause bleiben
I must go.out and you must home stay
'I must go out, and you (must) stay home.'

d. Dutch
Ik heb de haring opgegeten,
I have DEF herring eaten.up
en jij ~~heeft~~ het bier opgedronken
and you have DEF beer drunk.up
'I have eaten the herring and you (have) drunk the beer.'

e. Russian
klara budet pet^{j} a roza ~~budet~~ tancevat^{j}
Clara will sing CTR Rosa will dance
'Clara will sing and Rosa dance.'

2.2.4.4 Right node raising

Right Node Raising (RNR) involves arguments or adjuncts in English (26). In such constructions, the rightmost constituent (26a), or, more generally, the rightmost string, which need not be a constituent (26b), belongs in some sense to both clauses. Not all the analyses of RNR posit deletion[7], the strikethrough is only used in (26) for expository purposes.

(26) a. Mary caught ~~a porcupine~~ and Sue petted, a porcupine.

b. Mary baked ~~20 cakes in less than an hour~~, and George frosted 20 cakes in less than an hour. (Abbott 1976 *via* Citko 2017)

For backward gapping, especially in rigidly verb-final languages, it has been often claimed in the literature (starting from Hankamer 1979) that backward gapping should be considered right node raising.

2.2.5 Ellipsis in comparative constructions

As argued in detail in Lechner (2004), a gapping-like phenomenon occurs in comparative constructions in English, German, and Dutch.

[7] For an overview of proposed analyses and respective references, see Citko (2017). These include string-based deletion at the PF, rightward across the board movement of the remnant, and multidominance (i.e. positing a structure where the remnant belongs to both conjuncts at once). As argued in Barros & Vicente (2013) and Chaves (2014), RNR-like phenomena do not allow for a uniform analysis.

(27) Cats like fish more [than rabbits ~~like~~ kale].

Accordingly, it is natural to examine comparatives in a given language to check whether some kind of ellipsis is involved in their formation.

2.2.6 Stripping

Stripping, or *bare argument ellipsis*, is a construction where only one of the constituents of a clause survives. The remnant is typically accompanied by a focus marking morpheme or word, as the subject *Mr. Hyde* is accompanied by *too* in (28a). Sentences where the second conjunct contains negation, instead of a focus marker, such as in (28b) are also analyzed as stripping in the literature. Konietzko (2016) provides a state of the art overview of approaches to stripping. Most analyses assume that stripping has a clausal source in which the remnant undergoes some kind of fronting while the rest of the clause gets deleted.

(28) a. Dr. Jekyll lived in London and Mr. Hyde ~~lived in London~~ too.

b. Dana speaks Danish but not Dani.

While English disallows stripping to be separated from its antecedent by a clause boundary, this constraint does not hold cross-linguistically[8], as the Russian sentence in (29) illustrates. The embedded stripping remnant in (29) is 'hedgehogs too'.

[8] The putative German examples of embedded stripping in Konietzko (2016) all involve embedded polar questions, and instantiate what is called here Pol-sluicing, see section 5.2.8. As Wurmbrand (2017) and Weir (2014) show, in English and German stripping can occur in an embedded clause

(29) Russian

etot	kot	boitsja	myšej	i	ja	dumaju
this	cat	fears	mice.GEN	and	I	I.think
[što	~~on~~	~~boitsja~~	ježej		tože]	
COMP	he	fears	hedgehogs.GEN		too	

'This cat fears mice and I think that ~~it fears~~ hedgehogs too.'

Stripping is sometimes claimed to be a variety of gapping involving only one remnant. As data from the languages of the Caucasus show, however, stripping and gapping have different crosslinguistic distributions.

2.2.7 Ellipses involving negation

Some types of ellipsis require negation to be present in the clause. A construction similar to gapping and stripping was called *pseudostripping* in Depiante (2000) and, perhaps more felicitously, *y/n ellipsis* by Kolokonte (2008), and *polar ellipsis* by Gribanova (2013). In this construction, the antecedent lacks negation, while the ellipsis site lacks a VP, as illustrated by the Spanish sentence in (30a) and the Greek sentence in (30b).

provided no complementizer is used. Wurmbrand argues at length that sentences such as in (i) indeed involve clause embedding despite the absence of a complementizer.

(i) German

Leo	*spricht*	*Englisch*	*und*	*Kai*	*behauptet*	(**daß*)	*Lina*	*auch*
Leo	speaks	English	and	Kai	claims	(*that)	Lina	also

'Leo speaks English and Kai claims (*that) Lina, too'

(30) a. Kolokonte (2008: 8) Spanish

Juan	leyó	el	libro	pero	María	no
Juan	reads	the	book	but	Maria	NEG

'Juan reads the book but Maria doesn't.'

b. Kolokonte (2008: 1) Greek

o	Petros		latrevi	ti	θalasa
the	Petros.NOM		loves	the	sea.ACC
ala	i	Maria	ohi		
but	the	Maria.NOM	NEG		

'Peter loves the sea but Maria doesn't.'

Negative contrast ellipsis (31), a term coined by Kolokonte (2008), is fairly similar to stripping: (31) differs from the stripping example in (28b) only by the absence of a conjunction. It is not clear whether the two constructions can be consistently told apart cross-linguistically.

(31) Dana speaks Danish not Dani.

In terms of analysis, y/n stripping and negative contrast ellipsis are similar to stripping, although existent analyses differ in where negation should be placed in the structure.

2.2.8 Sluicing

2.2.8.1 Classical Sluicing

Sluicing is a type of ellipsis that deletes everything but the wh-phrase in an embedded wh-question. The wh-phrase usually has a correlate in the antecedent clause: either an indefinite (32a-b), or a DP the wh-phrase contrasts with (32c).

(32) a. John cooks something, but I don't know what ~~John cooks~~.

b. I have read this somewhere, but I forget where ~~I have read this~~.

c. John owns five DOGS, but I don't know how many CATS ~~John owns~~.

Sluicing can also occur when no overt correlate exists in the antecedent (33). This phenomenon was given the name of *sprouting* by Chung et al (1995).

(33) a. The cat is eating but I don't know *what* ~~the cat is eating~~.

b. The baby is crying but I don't know *why* ~~the baby is crying~~

Arguments in favor of ellipsis-based analysis of sluicing advanced by Ross (1969/2012) and Merchant (2001) include case connectivity effects: if the correlate in the antecedent is assigned a specific morphological case, this case should be matched by the remnant wh-phrase, as happens with 'someone' and 'who' in (34), which both carry the dative marking.

(34) German Ross (1969/2012)
Er will jemandem schmeicheln, aber sie wissennicht
he wants someone.DAT flatter.INF but they know not
wem/*wer/*wen.
who.DAT/who.NOM/who.ACC
'He wants to flatter someone, but they don't know who.'

As was noticed already by Ross (1969/2012), sluicing amnesties, or appears to amnesty, island violations. This is illustrated in (35) for a relative clause island: while movement of wh-phrase from the NP complement is impossible in an embedded question without ellipsis (35a), the corresponding sluice is grammatical (35b). The sentences are from Lasnik (2001).

(35) a. *Every linguist$_i$ met a philosopher who criticized some of his$_i$ work, but I'm not sure [how much of his$_i$ work]$_k$ [every linguist met a philosopher who criticized t$_k$]

b. Every linguist$_i$ met a philosopher who criticized some of his$_i$ work, but I'm not sure [how much of his$_i$ work]$_k$ ~~[every linguist met a philosopher who criticized t$_k$]~~

Not all islands are amnestied under sluicing. Accounts for the nature of this phenomenon vary, see e.g. Merchant (2001); Barros et al (2014); and Griffiths & Lipták (2014). Merchant (2001) and Barros et al (2014) argue that the islands that can be amnestied under sluicing are exactly those where a source can be constructed that does not involve island violations. For (35b), for example, this will be something like (36).

(36) Every linguist$_i$ met a philosopher who criticized some of his$_i$ work, but I'm not sure [how much of his$_i$ work]$_k$ ~~[she criticized t$_k$]~~

2.2.8.2 Pseudosluicing

A superficially similar construction, called pseudosluicing by Merchant (2001) involves a copular sentence as the source of a sluice, compare (32 a-b) with (37 a-b).

(37) a. John cooks something, but I don't know what ~~it is~~.

b. I have read this somewhere, but I forget where ~~it was~~.

In most languages with sufficiently rich case marking, the presence or absence of case connectivity effects usually allows one to tell apart sluices and pseudo-sluices: typically, in copular constructions, the pivot DP cannot bear a non-default case. Accordingly, the sentence in (38), where the wh-phrase must stand in the nominative, cannot serve as a source for (34), where it must stand in the dative.

(38) German
Er will jemandem schmeicheln, aber sie wissennicht
he wants someone.DAT flatter.INF but they know not
wer/*wem/*wen es ist
who.NOM/*who.DAT/*who.ACC it is
'He wants to flatter someone, but they don't know who it is.'

However, it has been argued that some languages allow case-marked DPs in copular constructions, see e.g. the discussion in Gribanova & Manetta (2016) and references there. One such language is Japanese: in (39), the source of what looks like a sluice (and was analyzed as such in Takahashi (1994)), *dare-o ka* who-ACC Q, is actually a copular sentence, Abe (2015); Nishiyama et al. (1996).

(39) Japanese; Abe (2015: 66-67)

minna-wa	[John-ga	dareka-o	aisiteiru	to]	itta	ga
everyone-TOP	John-NOM	someone-ACC	love	COMP	said	but
boku-wa	[dare-o	~~da~~	ka]	wakara-nai		
I-TOP	who-ACC	COP	Q	know-NEG		

'Everyone said the John loved someone, but I don't know who (John loved).'

2.2.8.3 Generalizations of Sluicing beyond Wh-questions

An ellipsis variety similar to sluicing can occur in other types of embedded questions and, more widely, in embedded clauses with focus, van Craenenbroeck & Lipták (2006). Under this type of ellipsis, only the focus survives.

(40) a. Sluicing in an alternative question

(Der)	Hans	hat	jemandem	geschmeichelt,		aber	ich
DEF	Hans	has	someone.DAT	flatter.PRTC		but	I
weiß		nicht	ob	**(dem)**	**Uwe**	**oder**	
know.PRS.1SG		NEG	Q	DEF.DAT	U.	or	
(dem)	**Jan**	~~(der)~~	~~Hans~~	~~geschmeichelt~~		~~hat.~~	
DEF.DAT	J.	DEF	Hans	flatter.PRTC		has	

'Hans flattered someone, but I don't know whether (it is) Uwe or Jan (that Hans flattered).' German

b. sluicing in a polar question[9]

?(Der)	Hans	hat	jemandem	geschmeichelt,		
DEF	Hans	has	someone.DAT	flatter.PRTC		
aber	ich	weiß	nicht	ob	**(dem)**	**Uwe**
but	I	know.PRS.1SG	NEG	Q	DEF.DAT	U.

~~(der) Hans geschmeichelt hat.~~

'Hans flattered someone, but I don't know whether (it is) Uwe (that Hans flattered).' German

[9] Speakers of German vary in their judgments about Pol-sluicing.

c. sluicing in a relative clause

Kornél	az-t	a	lány-t	hívta	meg
Kornél	that-ACC	DEF	girl-ACC	invited	PRV
akit	**Zoltán**	~~hívott~~			~~meg~~
REL.who.ACC	Zoltán	invited			PRV

'The girl who Kornél invited was the one who Zoltán did.' Hungarian
van Craenenboeck & Lipták (2006)

Erschler (2017) proposed an implicational universal connecting the presence of different types of sluicing in a given language: if a language allows sluicing in polar questions, it will allow sluicing in alternative questions and wh-questions, and if it allows sluicing in alternative questions, it will allow sluicing in wh-questions. We will discuss this in more detail in Chapter 4.

2.2.9 Fragments

Languages vary in that whether they allow fragments as questions and answers. By fragments, utterances smaller than a clause are meant here. For instance, '*When?*', '*Coffee or tea?*', *'Why not?'* or '*Why today?*' are fragment questions, while '*This Sunday*', '*Both'*, and '*Because reasons*' are fragment answers. Fragments are not necessarily constituents, but not any language freely allows non-constituents as fragment answers or questions. At least some fragments result from ellipsis in full clauses, although there is no consensus so far about their derivation. Merchant (2004; 2008) and much of the ensuing research argue for exceptional[10] focus movement of the

[10] That is, ungrammatical in the absence of ellipsis.

remnants followed by deletion, while Abe (2016) proposed an *in situ* derivation of fragments, see also Griffiths & Lipták (2014) and Weir (2014).

CHAPTER 3

THE THEORETICAL FRAMEWORK

The purpose of this chapter is to outline the framework in which the theoretical discussion will proceed in the next chapters. For recent overviews of the literature on ellipsis, see van Craenenbroeck & Merchant (2013), Merchant (to appear), and other chapters in van Craenenbroeck & Temmerman (to appear), which this chapter does not aspire to supplant.

3.1. Accounts of ellipsis

Available approaches to ellipsis can be roughly subdivided into several types. In NON-STRUCTURAL APPROACHES, to use the term of Merchant (to appear), no more structure is posited in an elliptical sentence than what is actually pronounced. The representatives of this approach include e.g. Ginzburg & Sag (2000) and Culicover & Jackendoff (2005). The dynamic syntax treatment of ellipsis in Kempson et al (2015) and Kempson et al (2016) can also be included in this group.

STRUCTURAL approaches, on the other hand, assume the existence of some silent material in the ellipsis site. This structure can be realized either as dedicated phonologically null elements that are interpreted at the LF or as regular syntactic structure that remains unpronounced. The null anaphor approach is implemented, for instance, in Hardt (1993) for Verb Phrase Ellipsis in English, in Lobeck (1995) for

a wide variety of ellipses, in López (2000) for sluicing, NP ellipsis and VP ellipsis, and in Tang (2001) who proposed this way of analyzing Gapping in Mandarin Chinese.

Proposals that ellipsis sites contain articulate syntactic structure, more or less the same as would have existed in the absence of ellipsis, but which remains silent begin with Ross (1967, 1969). It is this approach that will be taken up in the present study. An approach that is similar in spirit, but somewhat different in technical implementation posits LF copying of the missing structure from the antecedent, Chung et al (1995).

These approaches are not mutually exclusive: it is clear that instances of "deep anaphora" exist, i.e. ellipses that do not need an overt linguistic antecedent, Hankamer & Sag (1976), an observation which favors positing null elements. Furthermore, some fragment utterances may truly lack any additional structure, see the discussion and references in Merchant (2010; 2016). It can also be the case that both deletion and anaphoric lexical items may be involved in some types of ellipsis, see e.g. Authier (2011) and Baltin (2012).

In this study, I adopt the approach that assumes a rich unpronounced structure. Below, I address some properties of ellipsis that motivate this choice. For a more detailed discussion, see e.g. Authier (2011), İnce (2012); Merchant (2013; 2016), and references there.

First and foremost, various connectivity effects between the antecedent and the gapping site are easily accountable for by the deletion approach. For instance, under sluicing, the case of the wh remnant must match that of its correlate. In the absence of hidden structure, we need to posit a rather rich idiosyncratic set of case

assignment rules (under surface-true approaches) or of null anaphors (under null anaphor approaches). Essentially, every type of a verb in a given language will require a separate null anaphor to ensure correct case assignment. This phenomenon is illustrated in (41) with examples from Ross (1969: 253): in German, the verb *schmeicheln* 'to flatter' assigns the dative to its complement, while *loben* 'to praise' assigns the accusative. Accordingly, the sluice in (41a) must stand in the dative, and in (41b), in the accusative.

(41) German

a. Hans hat jemand**em** geschmeichelt, aber ich
Hans has someone.DAT flatter.PRTC but I
weiß nicht **wem/** ***wer/** ***wen**
I.know NEG who.DAT who.NOM / who.ACC
'Hans flattered someone, but I don't know who.'

b. Hans hat jemand**en** gelobt aber ich
Hans has someone.ACC praise.PRTC but I
weiß nicht **wen/** ***wer/** ***wem**
I.know NEG who.ACC who.NOM /who.DAT
'Hans flattered someone, but I don't know who.'

Furthermore, in languages that show Tense-Aspect-Mood based case marking splits, such as Georgian, the case marking of the remnant should be the one corresponding to the verb in the antecedent. In the present, the subject of a transitive verb stands in the nominative, and the direct object, in the dative; while in the aorist, the respective cases are the ergative and the nominative. Accordingly, the remnant in (42a) stands in the dative, and in (42b), in the nominative.

(42) Georgian

a. ia **raɣacas** amzadebs magram ar vici
Ia.NOM something.DAT cooks but NEG I.know
ras /***ra**
what.DAT what.NOM
'Ia is cooking something, but I don't know what.'

b. ia-m **raɣaca** moamzada magram ar vici
Ia.ERG something.NOM cooked but NEG I.know
ra /***ras**
what.NOM what. DAT
'Ia has cooked something, but I don't know what.'

An additional argument in favor of a rich underlying structure is the fact that ellipsis sites can be extracted out of, as illustrated for the English VP ellipsis[11] in (43a-c) and the Modal Complement ellipsis in French in (43d). A further discussion of extraction from ellipsis sites can be found in Aelbrecht (2012).

(43) Merchant (2013)

a. Which films did he refuse to see, and which films did he agree *(to)?

b. Which films did he refuse to see, and which films did he agree to [~~VP see t~~]?

[11] Admittedly, VPE is somewhat different in its properties from all other ellipsis varieties in English, for instance, it allows a voice mismatch between the antecedent and the ellipsis site, Johnson (2001); Merchant (2013). However, this property appears to be English-specific. In Russian, VPE does not allow voice mismatches (i a), but extraction is still possible out of it (i b).

(i) Russian

a. *stat^{j}ja pisalas^{j} vasej
article.NOM was.being.written Vasya.INS
i maša <tože> budet <tože> [$_{VP}$~~pisat^{j} stat^{j}ju~~]
and Masha.NOM too will too write.INF article.ACC
'An article was being written by Vasya and Masha will (be writing an article) too.'
(intended)

b. ja znaju [kakie stat^{j}ji]$_{i}$ maša uže napisalat$_{i}$,
I know which papers Masha already wrote
a kakie tol^{j}ko budet [$_{VP}$~~pisat^{j} t$_{kakie}$~~]
CTR which only will write.INF t$_{which}$
'I know which articles she already wrote, and which ones she's only going to.'

c. I know which books she READ, and which she DIDN'T.
Merchant (2008: 140)

d. French, Authier (2011: 177)
(Speaker admiring a guitar collection)

Je	me	demande	lesquelles	on	peut	toucher
I	me	wonder	which-ones	one	can	touch
et	lesquelles	on	peut	pas.		
and	which-ones	one	can	not		

'I wonder which ones you can touch, and which ones you can't.'

Additionally, ellipsis sites give rise to the "missing antecedent effects". As was first observed by Grinder and Postal (1971), pronouns may refer to, or be bound by, the material contained in an ellipsis site[12]. In (44), 'it' refers to the camel that Sue rode. In (44a), the sentence involves ellipsis where the pronoun can find an antecedent, whereas in (44b) this is impossible, although the sentence implies that Sue has ridden some camel.

(44) a. I never managed to ride a camel, but Sue did ~~manage to ride a camel$_i$~~, and it$_i$ was the two humped variety. Hankamer & Sag (1976)

b. I never managed to ride a camel, unlike Sue. *It had two humps.
Kyle Johnson, p.c.

Let us see how the tests described above apply to a given ellipsis variety, Modal Complement Ellipsis in Russian. Modals in Russian allow the complement to be phonologically null (45). To the best of my knowledge, this ellipsis variety in

[12] The status of this diagnostic is disputed, however: Hardt (1993) observed that the English 'do so' anaphora can give rise to the missing antecedent effect (i), although no hidden syntactic structure is assumed to exist in this case.

(i) Jerry wouldn't read a book by Babel, but Meryl has done so and it was pretty good.

See Johnson (2001) and Frazier (2010) for more discussion.

Russian has not been addressed in the generative literature, although see McShane (2005) for many examples of ellipsis of this type. Let us show how the tests described above allow one to conclude that the phonologically null complement is actually a full-fledged infinitival clause, although unpronounced.

(45) a. vas^{j}a naučil svoju košku tancevat^{j} a pet^{j}a ne **možet**
Vasya taught self's cat dance.INF CTR[13] Petya NEG can
~~naučit^{j} svoju košku tancevat^{j}~~
teach.INF self's cat dance.INF
'Vasya has taught his cat to dance, and Petya can't (teach his cat to dance).'

b. oni razveli konspiraciju, vot ja i rešil
they established conspiracy so I FOC decided
što nam tože **nado** ~~razvesti konspiraciju~~
COMP we.DAT too necessary establish.INF conspiracy
'They've gotten a conspiracy going, so I figure we should, too.'
McShane (2005: 148)

First, pronouns may refer to, or be bound by[14], the contents of the ellipsis site: in (46a), the pronoun *ta* 'that one (feminine)' refers to Petya's cat. Speakers vary in their preferences for *ta* and *ona* 'she' in this context, but this is not directly relevant for us: either pronoun has an antecedent of some kind in the ellipsis site. On the other hand, in (46b), where the modal has an overt complement *etogo sdelat^{j}* 'do this', anaphora is impossible, although 'do this' can mean 'teach Petya's cat to dance'.

[13] The coordinator *a* (glossed CTR) is used to coordinate contrasting clauses. Informally speaking, it's midway between *i* 'and', which cannot coordinate contrasting clauses, unlike its English counterpart, and *no* 'but'.

[14] The difference between coreference and binding is irrelevant for my present purposes: in any case, there is an entity in the ellipsis to establish some relation with.

(46) a. vas^{j}a naučil svoju košku tancevat^{j} a pet^{j}a ne možet
Vasya taught self's cat dance.INF CTR Petya NEG can
~~naučit^{j} svoju košku$_{i}$ tancevat^{j}~~
teach.INF self's cat dance.INF
potomu što ta$_{i}$ pl^{j}uševaja
because that.one.F of.plush.F
'Vasya has taught his cat to dance, and Petya can't (teach his cat to dance) because it is a stuffed one.'

b. vas^{j}a naučil svoju košku tancevat^{j} a pet^{j}a ne možet
Vasya taught self's cat dance.INF CTR Petya NEG can
etogo sdelat^{j} (*potomu što ta pl^{j}uševaja)
this.GEN do.INF because that.one.F of.plush.F
'Vasya has taught his cat to dance, and Petya can't do so, because it (Petya's cat) is a stuffed one.' (intended)

Furthermore, the null complement of a modal can be extracted from: in (47), *kakoj* 'which' must be extracted from the ellipsis site.

(47) vas^{j}a rasskazal kakoj on možet napisat^{j}
Vasya told which.M.ACC he can write.INF
t$_{kakoj}$ roman
t$_{which}$ novel.ACC
a pet^{j}a (rasskazal) kakoj ne možet
CTR Petya told which.M.ACC NEG can
~~napisat^{j} t$_{kakoj}$ roman~~
write.INF t$_{which}$ novel
'Vasya told (us) what kind of novel he can write, and Petya told us what kind (of novel) he can't (write).'

Finally, the extracted material must carry the case marking determined by the elided verb. While in (47) the case *kakoj* 'which' stands in is the accusative (which is syncretic with the nominative for masculine inanimates in Russian), in (48) the verb 'to make use of' assigns the instrumental to its complement. Accordingly, the extracted wh-word *kakimi* carries the instrumental marking.

(48) vas^{j}a rasskazal kakimi on možet pol^{j}zovat^{j}s^{j}a t_{kakimi}
Vasya told which.PL.INS he can use t_{which}
priborami a pet^{j}a (rasskazal) kakimi ne možet
device.PL.INS CTR Petya told which.PL.INS NEG can
~~pol^{j}zovat^{j}s^{j}a t_{kakimi} priborami~~
use t_{which} device.PL.INS
'Vasya told (us) what kind of devices he can use, and Petya told us what kind (of devices) he can't (use).'

The question now is how to integrate the idea about the unpronounced structure in an ellipsis site into minimalist syntax.

3.2. Move and Delete approach to ellipsis

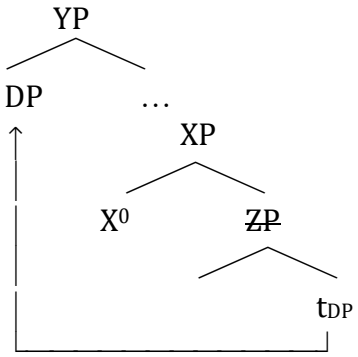
The general approach to be pursued in this dissertation is that ellipsis involves movement and deletion: remnants-to-be move out of the ellipsis site, while their host constituent gets "deleted". The idea that movement may precede deletion provides a uniform treatment for instances of obvious deletion of constituents and ostensible non-constituent deletion, see e.g. the discussion in Craig & Sailor (2014).

For the purposes of the discussion in chapters 3 and 4, deletion will be understood as non-insertion of the respective phonological exponents. I assume the Y-model of syntax, in which narrow syntax operates with feature bundles that possess meaning but lack phonological form. The phonological exponents from the Vocabulary are inserted after the results of the computation are sent off to the LF. Under ellipsis, insertion does not occur in the respective constituent.

The move and delete approach is schematized in (49): the evacuated remnant, DP, moves into Spec YP, where YP is some higher projection, while ZP is deleted. In

general, of course, more than one remnant can move out of an ellipsis site, and they may land in the specifiers of different heads.

(49)



Evidence for movement being implicated in the remnant formation comes from the fact that some restrictions on remnant formation parallel those on movement. For instance, as Merchant (2001; 2004) observed, the inability to extract DPs from PPs correlates with the inability of bare DPs in ellipsis remnants to be correlates to the respective PPs. This observation has received the name of Preposition Stranding Generalization. In English, where DPs can be extracted out of PPs (or, in other words, prepositions can be stranded), it is possible to use bare wh-phrases as sluices and fragment answers, when the respective correlate of the sluice, or the wh-phrase in the question, are the complements of PPs. This is shown in (50) for English wh-questions (50a), sluices (50b), and fragment answers (50c). These data can be replicated for Mainland Scandinavian languages, which also exhibit preposition stranding, Merchant (2001; 2004).

(50) a. Who was he talking with t_{who}? Merchant (2001: 92)

b. Peter was talking with someone, but I don't know (with) who. Merchant (2001: 92)

c. Q: Who was Peter talking with t_{who}?
A: Mary. Merchant (2004: 685)

On the other hand, in languages that prohibit extraction out of PPs, it is impossible for PPs in the antecedent to have bare DPs as correlating remnants, as is illustrated in (51) for Russian.

(51) Russian

a. *(s) kem ty razgovarivaeš (*s)?
with who.INS you you.talk with
'Who are you talking with?'

b. maša s kem-to razgovarivaet
Masha with who.IDF.INS talks
no ja ne znaju *(s) kem
but I NEG know with who.INS
'Masha is talking with someone, but I don't know with who.'

c. A: s kem maša razgovarivaet?
with who.INS Masha talks
B: *(s) vasej
with Vasya.INS
'Who is Masha talking with? – With Vasya.'

Moreover, in languages where extraction is possible from some PPs, and impossible from others, it is only the former type that can be stranded in fragment answers, as was shown by İnce (2012) for Turkish.

Admittedly, some exceptions have been found to this generalization, see Almeida & Yoshida (2007) for Brazilian Portuguese, for which an explanation is

proposed for why the P-stranding generalization is violated by Rodrigues et al (2009). Furthermore, violations of the P-stranding generalization in Serbo-Croatian were discovered and explained by Stjepanović (2006). No such explanation is currently known for Emirati Arabic, Leung (2014), and Polish, Sag & Nykiel (2011).

However, problematically for the movement approach, sluicing and some fragment answers evade some islands, as was first discovered by Ross (1969). For instance, in (52) this is illustrated for relative clauses. While the sluice in (52a) is grammatical, wh-movement from a relative clause is not (52b).

(52) Merchant (2001)

a. They want to hire someone who speaks a Balkan language, but I don't remember which.

b. *I don't remember which (Balkan language) they want to hire someone who speaks t_{which}.

Possible explanations of this phenomenon include, on one hand, a hypothesis that goes back to Ross (1969) that island constraints are PF phenomena that are destroyed by ellipsis. This might be the case either because ellipsis deletes some abstract diacritic that renders extraction from islands ungrammatical, see e.g. Fox & Lasnik (2003), or because linearization of trees works in such a way that structures with material extracted out of islands are non-linearizable, whereas ellipsis removes contradictions in the linearization conditions, Richards (1997) and Fox & Pesetsky (2005).

On the other hand, a proposal has been advanced in Merchant (2001) that no islands are implicated in (many) seemingly island-evading ellipses: rather, an

alternative non-isomorphic source without an island is available in all such cases. For instance, a putative source[15] for (52a) can be as shown in (53).

(53) They want to hire someone$_i$ who speaks a Balkan language, but I don't remember which Balkan dialect they$_i$ should speak.

For a sustained argument in favor of a non-isomorphic source approach, see Barros et al (2014). A crucial observation that they make is that some islands cannot be ameliorated by sluicing, and this happens precisely if no alternative source can be

[15] It might seem more natural to propose a copular source for this sluice (i), i.e. to treat it as pseudo-sluicing in terms of Merchant (2001).

(i) They want to hire someone$_i$ who speaks a Balkan language, but I don't remember which Balkan language it is.

While the evidence against such a move in English is rather subtle, Merchant (2001), the argument becomes much more straightforwar once we take into account languages with a richer morphological case system, such as Russian or German. It is easy to show then that the copular source will not work: the wh-phrase in a copular clause will obligatorily stand in the nominative, as it is the case for *kakoj jazyk* 'which language' in (ii a), whereas the sluice must bear the marking required by the verb in the antecedent – for Russian, that would be the preposition *na* 'on' (ii b). See German data of the same type in Barros et al (2014).

(ii) Russian

a. oni xot^{j}at vz^{j}at^j na rabotu kovo-nibud^j kto=by govoril
they want take.INF on work someone who=IRR spoke
na balkanskom jazyke no ja ne pomn^{j}u
on Balkan.PREP language.PREP but I NEG remember
kakoj eto jazyk
which.nom FOC language.NOM
'They want to hire someone$_i$ who speaks a Balkan language, but I don't remember which language it is.'

b. oni xot^{j}at vz^{j}at^j na rabotu kovo-nibud^j kto=by govoril
they want take.INF on work someone who=IRR spoke
na balkanskom jazyke no ja ne pomn^{j}u
on Balkan.PREP language.PREP but I NEG remember
na kakom jazyke
on which.PREP language.PREP
'They want to hire someone who speaks a Balkan language, but I don't remember which Balkan language.'

Sometimes, however, it is reasonable to posit an underlying cleft structure for what superficially looks like sluicing, van Craenenbroeck (2010b).

constructed which would not involve an island. Contrastive sluices in English, i.e. ones where the antecedent of the sluice is a contrastively interpreted definite DP (54a) rather than an indefinite, are known to obey islands (54b).

(54) a. I know that they fired JOHN, but I don't know who ELSE.

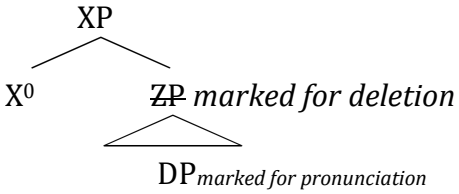
b. ?*Sandy asked if they fired JOHN, but I don't know who ELSE ~~she asked if they fired t~~. Barros et al (2014: 23)

A non-isomorphic source with the needed reading ('who else it was that Sandy asked if they fired them') is unavailable in this case, and accordingly no island repair is observed. For more empirical evidence against the PF level island amelioration approach, see Marušič & Zaučer (2013).

An alternative to the move-and-delete approach to ellipsis has been advanced in Abe & Tancredi (2013); Weir (2014); Abe (2015; 2016); and Ott & Struckmeier (2018). While technical details somewhat differ, all these works propose that the remnants stay in situ and are marked for non-deletion (55). This approach faces some empirical problems: for one, it is not clear how this approach would capture the difference between island-repairing and non-island repairing varieties of sluicing. Furthermore, under in situ approaches, we need to have a dedicated separate mechanism for avoiding deletion. One natural way to proceed is to identify the would-be remnants is to assume that they are the material that can remain prosodically prominent under deaccenting. However, the classes of material that may remain prosodically prominent and that can serve as remnants under ellipsis do not coincide.

For instance, English adjectives may remain prosodically prominent, but may not serve as remnants.

(55)



A clear advantage of the move and delete approach is that it does not need to introduce separate mechanisms of deletion and of escaping deletion. A clear disadvantage is that some of the movements that have to be posited under this approach are impossible in the absence of ellipsis, which makes analyses that rely on such movements barely falsifiable.

3.3. Licensing ellipsis: E-features

It can be shown that for deletion to be licensed both some degree of syntactic identity and semantic identity is required, see a.o. Sag (1976); Williams (1977); Kehler 2002 (though see Frazier and Clifton 2006 for critical discussion), Chung 2006, 2013, Chung et al. 2010, van Craenenbroeck 2010a, and Merchant 2013. Seemingly, the need to track a semantic condition creates a paradox with respect to modularity: LF doesn't know that something remains unpronounced; PF doesn't care about interpretation.

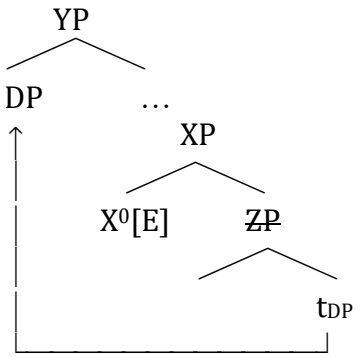
A solution was proposed by Merchant (2001), building upon Lobeck (1995): Let us posit a dedicated E-feature that instructs the computational system to override

the regular semantic and phonological computation. This E-feature is merged with the head whose complement is to be deleted.

- *Syntax*: a diacritic E-feature on some head (host)
- *Phonology*: the complement of the host head is null.
- *Semantics*: compute the usual semantics of the complement **and** evaluate an additional semantic identity condition between the ellipsis site and the antecedent.

In the original approach of Merchant's, the additional semantic condition was E-givenness, but it can conceivably be something else, e.g., it can be based on the equivalence of Questions Under Discussion in the sense of Ginzburg (1994) and Roberts (2012), see e.g. AnderBois (2011, 2014); Barros (2014); Weir (2014, 2017); and Kotek and Barros (2018). An early version of the latter condition, with D-linkedness instead of QUD-matching, and implementation of ellipsis as a pro-form, was formulated in López (2000). The general scheme is illustrated in (56): the feature on the head X^0 licenses deletion of its complement ZP.

(56)



Note that the E feature is placed on the head X whose complement is to be deleted rather than somewhere on the phrase ZP itself. The reason for this is that it is not

enough to specify which constituent is to be deleted: for instance, the constituent deleted under sluicing is a TP, which is the complement of the interrogative C^0. If our system had placed the licensing feature on the TP, we would predict TP deletion to be possible in many environments where it isn't (57).

(57) a. *Mary wondered whether pigs can fly, although it's not obvious [CP that [~~TP pigs can fly~~]]

b. *Mary claimed that pigs can fly, but I wonder [CP whether ~~[TP pigs can fly]~~]

Likewise, in Dutch, infinitival VPs can be elided when they are complements of modals (58a), but not when complements of regular auxiliaries (58b), Aelbrecht (2012: 2-3).

(58) Dutch

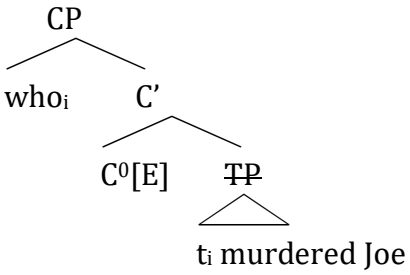
a. Jessica wil niet gaan werken morgen
Jessica wants NEG go.INF work.INF tomorrow
maar ze moet ~~gaan werken morgen~~
but she must go.INF work.INF tomorrow
'Jessica doesn't want to go to work tomorrow, but she has to.'

b. Herman kan niet zingen vanavond maar
Herman can NEG sing.INF tonight but
Marlies zal *(zingen vanavond)
Marlies will sing.INF tonight
'Herman can't sing tonight, but Marlies will.'

To apply the scheme in (56) to specific ellipsis varieties, sluicing is licensed by an E-feature situated on C^0, (59 a-b), and VP ellipsis, on T^0, (59 c-d), both based on Merchant (2013: 86). For the purposes of exposition, the clause structure is simplified.

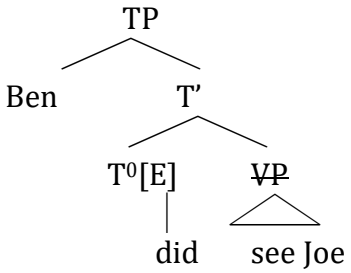
(59) a. Someone murdered Joe, but we don't know who.

b.



c. Abby didn't see Joe, but Ben did.

d.



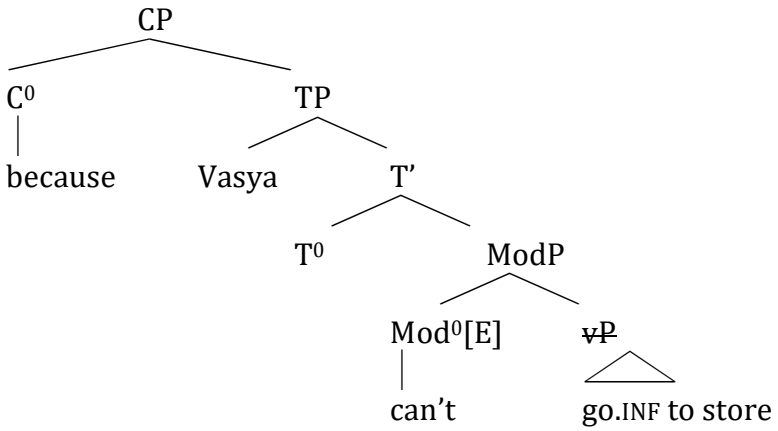
For modal complement ellipsis, in Russian and elsewhere, the licensing feature is arguably situated on the modal (60). The tree is simplified: I gloss over the existence of the NegP in the structure, as it is irrelevant for our present purposes.

(60) a.

Pet^{j}a	pošol	v	magazin	[potomu	što	vas^{j}a	ne
Petya	went	to	store	because		Vasya	NEG
možet	~~pojti~~	~~v~~	~~magazin~~]				
can	go.INF	to	store				

'Petya went to the store because Vasya can't (go to the store).'

b.



3.4. Licensing by agreement

To account for a wider range of phenomena, Aelbrecht (2010) argued that an additional technical ingredient has to be introduced, namely, agreement[16]. In some instances of ellipsis, the presence of more than one head is necessary for ellipsis to occur. One example of such situations, although it was not considered by Aelbrecht herself, see the discussion in Aelbrecht (2010: 91-94), is gapping in English and Dutch, where the presence of a coordinating head is necessary while the complement of a much lower head is deleted. See a more detailed discussion in the next chapter.

To illustrate Aelbrecht's proposal with one of her own examples, in English, Verb Phrase Ellipsis can only be licensed by finite form of the auxiliary *have*, *be*, dummy *do* or a modal, or the infinitival marker *to*, (see Sag 1976, Williams 1977; Zagona 1982, 1988a, 1988b; Martin 1996; Lobeck 1993, 1995; Johnson 2001). Accordingly, non-finite forms of 'have' and 'be' do not license ellipsis, (61 a-b)

[16] A forerunner of this proposal is Merchant (2003), where it is essentially proposed that the E-feature responsible for stripping agrees with the conjunction.

Aelbrecht (2012: 15). However, when a licit VPE licenser is situated above these non-finite forms, ellipsis becomes possible (61c).

(61) a. *I hadn't thought about it, but I recall Max having.

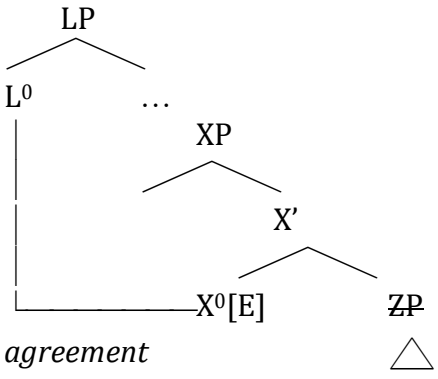
b. *I hadn't been thinking about it, but I recall Morgan having been.

c. I hadn't been thinking about that. – Well, you should have been [~~thinking about that~~].

Aelbrecht concludes from the contrast between (61 a) and (61b) that 'should' is able to license VP deletion long-distance. The idea of Aelbrecht was to encode the dependence of ellipsis on two different heads by an agreement relationship between these heads.

Specifically, let X^0 be the head whose complement is to be deleted and L^0 the head necessary for the deletion to be licensed. Let us place the feature on one of them and make them agree (62). The E-feature will license the deletion of the complement of the lower head, if the agreement has taken place. In a way of speaking, complete non-pronouncement of syntactic structure is in this view an extreme manifestation of agreement morphology.

(62)

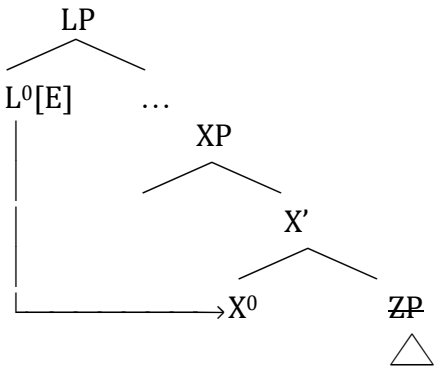


The E-feature, thus, includes the information about which head upstairs the head X^0 has to agree with. A predecessor of this idea is Merchant's (2003) analysis of stripping. He proposed that the E feature that licenses stripping includes an uninterpretable feature [uConj] that forces the head hosting the E-feature to agree with a conjunction.

In what follows, I will slightly modify Aelbrecht's proposal: I will place the feature on the higher head and make it agree with the lower one (63). Now, it will be the category of the head X^0 that will be part of the information encoded in E. I take the E-feature to be uninterpretable, and the matching interpretable feature to be the category of X^0 (or, equivalently, of the XP it projects). I assume that this agreement operation satisfies some locality conditions, at the very least that it cannot cross a CP boundary; and a relativized minimality condition, namely, that the agreement will proceed with the closest head of the given type.

More typically, agreement is discussed between a head and a phrase, see e.g. Chomsky (2000, 2001); Zeijlstra (2012); Preminger (2013, 2014). As far as I am able to tell, nothing changes in the predictions if we assume that the head L^0 agrees with the entire XP rather than X^0, with non-pronouncement of the complement as the morphological manisfestation of agreement. Given this, the agreement operation proposed here is not substantially different from the standard Chomskyan Agree.

(63)



However, this modification requires a minor revision of the contents of the feature. Specifically, it will have to be as follows:

- *Syntax*: a diacritic E feature on some head (host) and the information about the type of the head X^0 it agrees with.
- *Phonology*: the complement of the head X^0 the host head L^0 agrees with is null.
- *Semantics*: compute the usual semantics of the complement of X^0 **and** evaluate an additional semantic identity condition between the ellipsis site and the antecedent.

3.5. Conclusion

The approach outlined above strives to account for the properties of ellipsis using only the properties of E-features and the properties of movement in a given language. The latter obviously need to be accounted for anyway, independently of ellipsis. In the next chapters I will explore how this approach accounts for the cross-linguistic variation in the properties of gapping and sluicing.

To recapitulate, the technical assumptions used in this work are the following. Ellipsis sites possess rich unpronounced structure, more or less identical to that in "complete" utterances. Ellipsis is derived by movement of the remnants out of the

host constituent and deletion of this constituent. Only complements of certain heads are deleted. Deletion is triggered by agreement between the head whose complement is deleted and some higher licensing head.

In this chapter, I provided some arguments in favor of all these assumptions. The main thrust of the case studies below is that the approach based on these assumptions is versatile enough to address the breadth of cross-linguistic variation in this domain.

CHAPTER 4

GAPPING

4.1. Introduction

In this chapter, I will explore how the approach outlined in Chapter 2 applies to GAPPING. Recall that under gapping, the lexical verb and the auxiliary, if there is any, are missing, but the sentence would remain grammatical should they be reconstructed. This is illustrated by the English sentence in (64a), and the Russian and Dutch ones in (64 b-c). In more commonly studied cases, this construction occurs in coordinations.

(64) a. Some will eat beans, and others ~~will eat~~ rice.

b. Russian
Vasja p^{j}jot vodku a Oleg ~~p^{j}jot~~ samogon
Vasya drinks vodka.ACC CTR Oleg drinks moonshine.ACC
'Vasya drinks vodka and Oleg moonshine.'

c. Dutch

Karel	schrijft	met	een	potlood	en
K.	writes	with	a	pencil	and
John	~~schrijft~~	met	een	pen	
J.	writes	with	a	pen	

'Karel writes with a pencil and John with a pen.' Neijt (1979: 19)

The first example of the construction later to be named gapping was introduced in the generative literature already in Gleitman (1965) when discussing "certain conjunctions of nonconstituent sequences of constituents". Systematic study of

gapping, and the use of the term gapping itself, begins[17] with Ross (1967), and especially with Ross (1970).

Although several early works on gapping, starting with Ross (1970), were typologically oriented (see e.g. Koutsoudas 1971; Maling 1972; Pulte 1971; 1973; and Rosenbaum 1977), most research in the following decades focused on English and a few other better studied languages. The situation only changed in the 2000s, when a broader range of languages came to be addressed.

In earlier literature, e.g. Lobeck (1995), the tendency was to treat gapping as a *sui generis* phenomenon distinct from ellipsis. Tellingly, the title of Lappin & Benmamoun (eds.) (1999) is *Fragments. Studies in Ellipsis and Gapping*, with ellipsis and gapping listed separately. However, as we will see later, the arguments for setting gapping apart from other ellipsis varieties are not cross-linguistically robust.

One of the key observations that motivated non-ellipsis treatments of gapping has been that in the languages examined in the earlier literature a gapping site cannot be embedded while its antecedent is located in a superordinate clause, Hankamer (1979) and the subsequent literature. This is illustrated in (65a) for English and in (65b) for Dutch. This property has been taken as one of defining properties of gapping, Johnson (2014).

(65) a. *Some ate mussels, and she claims that others ~~ate~~ shrimp.
Johnson (2009)

[17] I thank Barbara Partee, Haj Ross, and Robin Lakoff for a discussion of this point.

b. Dutch
*Peter houdt van bananen, en ik denk
Peter likes of bananas and I think
dat Jessica van peren.
COMP J. of pears
*'Peter likes bananas and I think that Jessica pears.'
Aelbrecht (2007)

In the recent years, however, a number of counterexamples have been discovered to this generalization. The languages where it has been shown not to be fulfilled include Mandarin Chinese[18], Tang (2001); Wei (2011); Persian, Farudi (2013) (66a); Spanish, Jung (2016) and Fernández-Sánchez (2016) (66b); Korean, Jung (2016); and Polish, Fernández-Sánchez (2016). At least for some speakers, embedding a gapping site is possible in Hindi-Urdu as well, Farudi (2013); Kush (2016).

(66) a. Persian, Farudi (2013)
Mahsā in ketāb-ro dust dār-e va
Mahsa this book-ACC like have-3SG and
Minu mi-dun-e [**ke** māmān-eš un ketāb-ro]
Minu IPF-know-3SG COMP mother-3SG that book-ACC
'Mahsa likes this book and Minu knows that her mother (likes) that book.'

b. Spanish, Fernández-Sánchez (2016)
Alfonso robó las esmeraldas y creo [**que** Mugsy
Alfonso stole the emeralds and I.think COMP M.
~~robó~~ las perlas]
stole the pearls
'Alfonso stole the emeralds and I think that Mugsy (stole) the pearls.'

[18] However, it remains a matter of discussion whether the gapping-like construction in Mandarin should be analyzed as regular gapping, given some idiosyncratic constraints it is subject to.

As I will argue below, such constructions should be treated on par with the regular gapping, which occurs in coordinate structures. In this chapter, I will call such a construction *embedded gapping*[19]. I will provide further evidence that (contrary to what has been assumed in the literature) embedded gapping is not very uncommon cross-linguistically.

I will show that the move and delete approach, together with agreement mediated deletion licensing can capture the crucial facts about gapping and successfully describe the cross-linguistic variation in this domain. In this sense, this work continues İnce (2009) who worked out the move & delete approach for gapping in Turkish and English, and Gengel (2013) who addressed English in this framework. Neither author, however, addressed cross-linguistic variation in embeddability of gapping. I contend that the approach adopted in this study is able adequately to treat this phenomenon.

This chapter is organized as follows. In Section 3.2, I overview empirical properties of gapping, both as they were summarized in the earlier literature and as they appear to be according to more recent studies. In Section 3.3, I address earlier minimalist accounts of gapping, and argue that ones not based on movement and deletion are unable to correctly account for the observed variation in embeddability of gapping. In Section 3.4, I lay out my proposal, and in Section 3.5, I discuss predictions it makes for languages with a low locus of the E-feature. In Section 3.6, I

[19] No confusion should arise with the situations when both the antecedent and the gapping site are situated within the same embedded clause (i).

(i) I think [that Mary drinks tea and John ~~drinks~~ coffee]

investigate the size of the constituent that is deleted under gapping, and in Section 3.7, cross-linguistic variation in the size of conjuncts, when gapping occurs in a coordinated structure. I use the observations from these two sections to provide a more detailed explicit account of gapping in Russian, Ossetic and Georgian in Section 3.8. In Section 3.9, I discuss and reject several potential alternative analyses. Finally, in Sections 3.10 I address some remaining open questions.

4.2. Empirical properties of gapping

In this section, I address descriptive generalizations about gapping as they are reported in the literature and discuss their cross-linguistic validity.

4.2.1 Presence of gapping in a given language

To repeat, I will use the naïve definition of gapping as a construction where the lexical verb and auxiliaries go missing. Gapping, taken in this broad sense, is extremely common cross-linguistically, although not universally present, Koutsoudas (1971); Carrera Hernández (2007). Carrera Hernández (2007) reports that gapping in coordinations[20] is impossible in Swahili, Bahasa Indonesia, Yoruba, Wolof, Thai, and Mandarin Chinese. The latter observation is apparently incorrect, Wei (2001); Tang

[20] The state of affairs with gapping outside of coordinations in these languages is unknown, and, admittedly, it is much harder to verify.

(2011); Ai (2014). Rennison (1997) reports that gapping in coordinations is impossible in Koromfe (Gur).

My own data indicate that gapping is impossible in Kalmuck (Mongolic). This is illustrated for forward gapping in (67a) and for backward gapping in (67b). The reason to claim that Kalmuck lacks backward gapping is that in sentences such as illustrated in (67b), the verb in the second conjunct obligatorily shows plural agreement. Whatever the correct analysis of this sentence, it cannot be verb deletion in the first conjunct[21], as it becomes ungrammatical if the verb in the first conjunct is restored, while the the verb in the second conjunct retains the plural morphology.

(67) Kalmuck

a. badəmtoturʁo idʒana
Badmarice is.eating
caʁan bodncəg *(idʒana)
Tsaghan potato is.eating
'Badma is eating rice, and Tsaghan potatoes.'

b. badəmtoturʁo caʁan bodncəg
Badmarice Tsaghan potato
idʒacxana/*idʒana
they.are.eating[22]/*is.eating
'Badma (is eating) rice, and Tsaghan is eating potatoes.' (intended)

The pattern in (67) is replicable, for instance, in Kannada (Dravidian): forward gapping is impossible, while what resembles backward gapping requires plural

[21] See a discussion of backward gapping and Right Node Raising in Section 4.5.5.

[22] More accurately, this might be the pluractional form, rather a form with the plural agreement. This is, however, immaterial for my purposes, as the pluractional form would be impossible in the second conjunct taken on its own.

agreement on the verb in the second conjunct, Sridhar (1990: 109). Accordingly, Kannada lacks gapping in coordinations.

Carrera Hernández (2007: 2128) writes that her analysis predicts that gapping will only be possible in a given language, if the same lexical item is used there to coordinate constituents of any category. Irrespective of the validity of the analysis it is based upon, it would be interesting to check this generalization for a larger sample of languages[23].

4.2.2 Properties of gapping according to previous literature

The early literature on gapping arrived at a number of descriptive generalizations about gapping which were thought to distinguish it from other types of ellipsis. These properties were summarized in Lobeck (1995: 21), who calls other types of ellipsis (namely, Verb Phrase Ellipsis, sluicing, and N' deletion) just "ellipsis". They are given

[23] The Russian (and Polish) contrastive coordinator *a* may provide a counterexample, depending on the correct analysis of sentences where it ostensibly coordinates DPs. In such sentences, one of the DPs must bear constituent negation: ***ne*** *puškin* 'not Pushkin' in (i a) and ***nie*** *Jana* 'not Jan' in (i b). It is plausible that such sentences involve ellipsis, in which case they serve as a counterexample to Carrera Hernández' generalization.

(I) a. Russian
mumu napisal **ne** puškin **a** turgenev
Mumu.acc wrote NEG Pushkin CTR Turgenev
'It is not Pushkin but rather Turgenev who wrote Mumu.'

b. Polish
dokument dotyczy **nie** Jana, **a** Janusza Kobylańskiego
document concerns NEG Jan.ACC CTR Janusz.ACC Kobylański.ACC
'The document concerns not Jan but rather Janusz Kobylański.'
http://wiadomosci.gazeta.pl/wiadomosci/1,114873,2618332.html
accessed on 04.22.2018.

in (68) and (69), Lobeck's (40) and (41). By 'gap' and 'ellipsis' she means the respective missing material.

(68) Gapping
a. A gap must be flanked by lexical material.
b. A gap must occur in a coordinate, but not subordinate clause separate from that containing its antecedent.
c. A gap cannot precede its antecedent.
d. A gap need not be a phrase.

(69) Ellipsis
a. An ellipsis can be phrase-final.
b. An ellipsis can occur in a coordinate or a subordinate clause separate from that containing its antecedent.
c. An ellipsis can precede its antecedent under certain conditions.
d. An ellipsis must be a phrase.

None of these properties of gapping are actually cross-linguistically robust. Head-final languages, such as Turkish or Ossetic, allow forward gapping with the verb naturally recoverable at the end of the clause[24] (70 a-b). The same is true for SOV sentences in Russian (70c).

(70) a. Turkish, İnce (2009)
Burak kütüphane-ye gitti, Mustafa (da) hastane-ye ~~gitti~~
Burak library-DAT went Mustafa also hospital-DAT went
'Burak went to the library and Mustafa to the hospital.'

b. Iron Ossetic
šošlan χetɐg-mɐ činəg ratta maχar=ta žawər-mɐ ~~činəg~~
Soslan Xetag-ALL book gave Maxar=CTR Zaur-ALL book
~~ratta~~
gave
'Soslan gave Xetag a book, and Maxar (gave) Zaur (a book).'

[24] Although in non rigidly verb-final Ossetic and Russian, the conclusion about the position of the gap relies on the assumption that the word orders match in the antecedent and the gapping site.

c. Russian
Vasja vodku pʲjot a Oleg samogon ~~pʲjot~~
Vasya vodka.ACC drinks CTR Oleg moonshine.ACC drinks
'Vasya drinks vodka and Oleg moonshine.'

As we have seen already in Section 3.1, gaps in some languages may occur in subordinate clauses. Besides the languages mentioned there, embedded gapping is possible in Russian, Digor and Iron Ossetic; Georgian; Svan; Polish; Hebrew; Finnish[25]; Hungarian[26]; Albanian[27]; and Romanian[28]. This is illustrated for Georgian, Iron Ossetic, Russian[29], Albanian, Finnish, Hebrew, Polish, Romanian, and Hindi in (71).

It is worth noting that in all the sentences in (66) and (71), a complementizer is present in the clause that hosts gapping, which shows that it is indeed an embedded clause rather than a direct quotation (and that the matrix verb is not a parenthetical).

(71) Georgian
a. ia svams čais da vpikrob [**rom** uča ~~svams~~
Ia drinks tea and I.think COMP Ucha drinks
ɣwinos]
wine
'Ia drinks tea and I think that Ucha (drinks) wine.'

[25] Seppo Kittilä, p.c.
[26] András Bárány, p.c.
[27] Dalina Kallulli, p.c.
[28] Rodica Ivan, p.c. Bîlbîie (2011) and Abeillé et al. (2014) propose that, in Romanian, what looks like embedded clauses hosting a gapping site are actually amalgams in the sense of Lakoff (1974). I am not sure what independent arguments exist in favor of this interpretation.
[29] Kazenin (2010); Agafonova (2011); and Grebenyova (2012) claim that embedded gapping is ungrammatical in Russian, however, a considerable number of the native speakers I have consulted accept such sentences, at least in the colloquial register.

b. manana amzadebs saciv-s da vpikrob
Manana cooks sacivi-DAT and I.think
[**rom** nino ~~amzadebs~~ ɣom-s]
that Nino cooks grits-DAT
'Manana cooks satsivi and I think that Nino (cooks) grits.'

c. kʼaťa-m tevz-i moipʼara da večʼvob
cat-ERG fish-NOM stole and I.suspect
[**rom** dzaɣl-ma xorc-i ~~moipʼara~~]
that dog-ERG meat-NOM stole
'The cat stole the fish and I suspect that the dog (stole) the meat.'

Iron Ossetic
d. žawər basəmdta saj ɐmɐ=mɐm aftɐ kɐšə
Zaur drank tea and=I.ALL so looks
[**səma** čermen=ta ~~basəmdta~~ kʼofi]
COMP Chermen=CTR drank coffee
'Zaur drank tea and I think that Chermen (drank) coffee.'

e. ɐž nɐ=qug-ɐn baχɐrən kodton nɐ=fəd=ta
I our=cow-DAT eat.INF I.did our=father=CTR
žaχta [**sɐmɐj** alinɐ nɐ=bɐχ-ɐn ~~baχɐrən kɐna~~]
said COMP Alina our=horse-DAT eat.INF do.SUB.FUT.3SG
'I fed the cow and our father told Alina to feed the horse., lit. 'that she feed the horse.'

f. Russian
Vasja pʲjot samogon i mne kažetsja
Vasya drinks moonshine.ACC and I.DAT seems
[**što** Oleg ~~pʲjot~~ vodku]
COMP Oleg drins vodka.ACC
'Vasya drinks moonshine and it seems to me that Oleg (drinks) vodka.'

g. Albanian
Ana pi çaj dhe mendoj [**se** Eva kafe]
Anna drinks tea and I.think COMP Eva coffee
'Anna drinks tea and I think that Eva coffee.'

h. Finnish
Tarja juo kahvia ja luulen [**että** Pekka ~~juo~~ teetä]
Tarja drinks coffee and I.think COMP Pekka drinks tea
'Tarja drinks coffee and I think that Pekka (drinks) tea.'

i. Hebrew

rina	oxelet	tapuxim	ve=ani	xošev	[**še**=gal	~~oxel~~
Rina	eats	apples	and=I	think	COMP=gal	eats
rak	agasim]					
only	pears					

'Rina eats apples and I think that Gal only (eats) pears.'

j. Polish

?Piotr	mieszka	na	Pradzie,			
Piotr	lives	on	Praga			
a	slyszalem,	że	Jan	~~mieszka~~	na	Gocławiu.
CTR	I.heard	COMP	Jan	lives	on	Gocław

'Piotr lives in Praga, and I heard that Jan (lives) in Gocław.'

k. Romanian

Maria	bea	cafea	şi	cred	[**că**	Ion	~~bea~~ ceai]
Maria	drinks	coffee	and	I.think	COMP	Ion	drinks tea

'Mary drinks tea and I think that John (drinks) coffee.'

l. Hindi, Kush (2016)[30]

Raam	Sita=ko	kitaab	de-gaa		aur	mujhe
Ram	Sita=ERG	book	give-FUT.M.3SG		and	me.OBL
lag-taa		hai	[**ki**	Mahesh		Rina=ko
strike-IMPF.M.SG		aux.PRES.3SG	COMP	Mahesh		Rina=OBJ
~~kitaab de-gaa~~						
book	give-FUT.M.3SG					

'Ram gave a book to Sita and it seems to me that Mahesh (gave a book) to Rina.'

As for directionality of gapping, an ongoing discussion, starting with Ross (1970) exists as to whether instances of backward gapping represent the same phenomenon as forward gapping, the most recent contribution being Citko's (2018) discussion of this phenomenon in Polish. She concludes that ostensible backward gapping in Polish is Right Node Raising. I will address this point in more detail in Section 3.5.5.

[30] Kush (2016) reports that 3 out of the 9 speakers he consulted find such sentences acceptable.

Finally, as for the ability of gapping to delete non-constituents, this point becomes moot under any move-and-delete analysis. Gapping is not different in this respect from any other type of ellipsis with some material moved out of the deletion site.

4.2.3 Cross-linguistic properties of gapping

The upshot of the discussion in Section 3.2.2 is that gapping, when examined in a larger variety of languages, appears to be not different in principle from other types of ellipsis. It is natural to inquire about cross-linguistically robust properties of gapping.

Much of the discussion in this section will be illustrated with examples from Russian, Ossetic, and Georgian. The first generative account of gapping in Russian is Hermann (1984 (*non vidi*); 1985). Some properties of the Russian gapping were also addressed in McShane (2005); Kazenin (2010); and Agafonova (2011). To the best of my knowledge, gapping in Georgian and Ossetic has not been systematically discussed in the literature so far.

4.2.3.1 Contrast and choice of conjunctions

As first explicitly noticed by Kuno (1976), remnants under gapping must contrast with their correlates in the antecedent. In languages where contrast can be

morphologically marked, such marking typically surfaces under gapping. Let us illustrate this point with examples from Russian, Ossetic, and Georgian.

In Russian, gapping is impossible with the plain coordinating conjunction *i* 'and', but rather the contrastive conjunction *a* is required (72a). However, when a co-ordinator is present in both conjuncts, gapping is fully grammatical; the repeated coordinator is *i* in (72b) and *to* in (72c). I stay agnostic with respect to the correct analysis of the coordinator *to*. One possible approach has been advanced in Esipova (2017), who proposes that the ostensible coordinators *to* … *to* are actually contrastive topics, which is consonant with the observation that gapping requires a contrast relationship between the conjuncts. The overall meaning of such coordinations is that the events described in each conjunct alternate in time.

(72) Russian

a. Vasja pʲjot vodku a/*i Oleg ~~pʲjot~~
Vasya drinks vodka.ACC CTR/and Oleg drinks
samogon
moonshine.ACC
'Vasya drinks vodka and Oleg moonshine.' (intended)

b. **i** Vasja pʲjot vodku **i** Oleg ~~pʲjot~~
and Vasya drinks vodka.ACC and Oleg drinks
samogon
moonshine.ACC
'Both drink: Vasya vodka and Oleg moonshine.'

c. **to** Vasja pʲjot vodku **to** Oleg ~~pʲjot~~
TO Vasya drinks vodka.ACC TO Oleg drinks
samogon
moonshine.ACC
'Vasya would drink some vodka, and then Oleg some moonshine.'

In Russian disjunctions, morphological marking of contrast is impossible. Gapping, however, is possible under an appropriate prosody in disjunctions in this language. It is more felicitous either as an answer to a question[31] (73c) or in an embedded question (73d) than in out of the blue statements (73a) or matrix questions (73b). Like in the case of conjunctions, it drastically improves if the coordinator is repeated (73e). It is not clear whether *to* in *to=li* has the same meaning as *to* in (72c)[32], but this is immaterial for my present purposes.

(73) Russian

a. #vas^{j}a požarit rybu ili pet^{j}a ~~požarit~~ kotlety
Vasya will.fry fish or Petya will.fry burgers
'Vasya will fry fish or Petya burgers.'

b. #vas^{j}a požarit rybu ili pet^{j}a ~~požarit~~ kotlety?
Vasya will.fry fish or Petya will.fry burgers
'Will Vasya fry fish or Petya burgers?'

c. Q: što my budemjest^{j} na užin?
what we will eat for dinner
'What will we have for dinner?'
A: vas^{j}a požarit rybu ili pet^{j}a kotlety
Vasya will.fry fish or Petya burgers
'Vasya will fry fish or Petya burgers.'

d. ja ne=znaju [vas^{j}a požarit rybu ili pet^{j}a
I neg=I.know Vasya will.fry fish or Petya
~~požarit~~ kotlety]
will.fry burgers
'I don't know whether Vasya will fry fish or Petya burgers.'

[31] The fact that certain types of gapping improve when they occur as answers has also been noted for Mandarin Chinese, see Ai (2014: 126) and references there. See also a discussion of the respective English facts in Section 4.9.2.

[32] Esipova (2017) suggests that it does.

e. **to=li** Vasja pʲjot vodku **to=li** Oleg ~~pʲjot~~
TO=Q Vasya drinks vodka.ACC TO=Q Oleg drinks
samogon
moonshine.ACC
'Either Vasya drinks vodka or Oleg moonshine.'

In Ossetic, if two conjuncts contrast, the first XP in the second clause has to be overtly marked as a contrastive topic by the enclitic =*ta* (Iron Ossetic)/=*ba* (Digor Ossetic). The presence of this marking is a necessary prerequisite for gapping in coordinations. The conjuncts are usually coordinated asyndetically (74a). The Iron Ossetic sentences in (74b-c) show that gapping is impossible without contrast marking with overt coordinators – *ɐmɐ* 'and' in (74b), and *fɐlɐ* 'but' in (74c).

(74) Iron Ossetic

a. šošlan fəččən baχordta χetɐg=**ta** wɐlibɐχ
Soslan meat.pie ate Xetag=CTR cheese.pie
~~baχordta~~
ate
'Soslan ate a meat pie and Xetag a cheese pie.'

b. *šošlan fəččən baχordta **ɐmɐ** χetɐg wɐlibɐχ
Soslan meat.pie ate and Xetag cheese.pie
~~baχordta~~
ate
'Soslan ate a meat pie and Xetag a cheese pie.'

c. *šošlan fəččən baχordta **fɐlɐ** χetɐg wɐlibɐχ
Soslan meat.pie ate but Xetag cheese.pie
~~baχordta~~
ate
'Soslan ate a meat pie but Xetag a cheese pie.'

The conjunctions *ɐmɐ* (Iron)/ *ɐma* (Digor) 'and' are altogether incompatible with contrast between the conjuncts, and, accordingly, with the presence of =*ta*/=*ba* (75).

(75) Iron Ossetic

*šošlan	fəčč̆ən	baχordta	ɐmɐ	χetɐg=ta
Soslan	meat.pie	ate	and	Xetag=CTR
araq	banažta			
arak	drank			

'Soslan ate the meatpie whereas Khetag drank the araq.' (intended)

Consequently, sentences with gapping with both the contrast marking and these conjunctions will still be ungrammatical (76a). For *fɐlɐ/fal* 'but', some speakers allow the contrastive marking and gapping (76b).

(76) Iron Ossetic

a.

*šošlan	fəčč̆ən	baχordta	ɐmɐ	χetɐg=ta
Soslan	meat.pie	ate	and	Xetag=CTR
wɛlibɐχ	~~baχordta~~			
cheese.pie	ate			

'Soslan ate a meat pie and Xetag a cheese pie.' (intended)

b.

šošlan	fəčč̆ən	baχordta	fɐlɐ	χetɐg=ta	wɛlibɐχ
Soslan	meat.pie	ate	but	Xetag=CTR	cheese.pie

'Soslan ate a meat pie but Xetag a cheese pie.'

In Ossetic disjunctions, contrast is possible between the disjuncts, but using contrast-marking enclitics is not. The reasons for the latter are unclear at present. Gapping, however, is possible in disjunctions, both in affirmative (77a) and interrogative (77b) sentences.

(77) Digor Ossetic

a.

?soslan		ɐ=madɐ	fɐjjidta
soslan		3SG=mother	saw
kenɐ	zɐrina	ɐ=fidɐ	~~fɐjjidta~~
or	Zarina	3SG=father	saw

'Soslan saw his father or Zarina her mother.'

b. mɐdinɐ fezonɐg baχwardta
Madina grilled.meat ate
ɐvi čermen(*=ba) wɐlibɐχ ~~baχwardta~~?
Q.or Chermen(=CTR) cheese.pie ate
'Did Madina eat grilled meat or Chermen a cheese pie?'

Turning now to Georgian, in this language the antecedent and the gapping site are normally coordinated asyndetically with the contrastive topic marker =*k'i* present in the second conjunct (78 a-b). However, conjunctions *da* 'and' or *magram*/*mara* 'but' are also judged possible to some extent (78 c-d).

(78) Georgian

a. gia-m šeč'ama xača'p'ur-i rezo-m k'i
Gia-ERG ate kachapuri-NOM Rezo-ERG CTR
mč'ad-i
mchadi-NOM
'Gia ate a *khachapuri*[33] and Rezo a *mchadi*[34].'

b. manana c'ers kalm-it guram-i k'i pank'r-it
Manana writes pen-INS Guram-NOM CTR pencil-INS
'Manana writes with a pen and Guram with a pencil.'

c. giam šeč'ama xač'ap'uri da iam(*=ki) mč'adi
Gia ate khachapuri and Ia(=CTR) mchadi
'Gia ate a khachapuri, and Ia a mchadi.'

d. ?giam šeč'ama xač'ap'uri mara iam(*=ki) mč'adi
Gia ate khachapuri but Ia(=CTR) mchadi
'Gia ate a khachapuri, but Ia a mchadi.'

In Georgian disjunctions, no matter whether questions or assertions, gapping is impossible (79).

(79) a. *giam šeč'ama xač'ap'uri an iam(=ki) mč'adi
Gia ate khachapuri or Ia(=CTR) mchadi
'Gia ate a khachapuri, or Ia a mchadi.' (intended)

[33] Cheese pie.
[34] Cornbread.

b. *giam šeč'ama xač'ap'uri tu iam(=ki) mč'adi?
Gia ate khachapuri Q.or Ia(=CTR) mchadi
'Did Gia eat a khachapuri, or Ia a mchadi?' (intended)

Besides the effects of contrast, it is not fully clear at present what governs the possibility, or felicity of gapping with a given conjunction or disjunction marker in a given language.

4.2.3.2 Parallelism between the antecedent and the gapping site

As other types of ellipsis, gapping imposes certain parallelism requirements on the antecedents and respective ellipsis sites. The parallelism effects include matching of the orders, and matching of the case marking, between the correlates and the respective remnants.

The orders of the remnants and of the correlates are strongly preferred to be identical: the Russian sentence in (80a), where the order of the correlates *nosorogi* 'rhinos.NOM' and *begemotov* 'of hippos' matches that of the remnants *slony* 'elephants.NOM' and *myšej* 'of mice' can be uttered out of the blue, while the sentence in (80b), where the order of the remnants is opposite to that of the correlates, is only acceptable as a correction. In (80), identical subscripts indicate matching remnants and correlates.

(80) Russian

a. nosorogi$_i$ bojatsa begemotov$_k$ a slony$_i$
rhinos.NOM fear hippos.GEN CTR elephants.NOM
~~bojatsa~~ myšej$_k$
fear mice.GEN
'Rhinos fear hippos, and elephants mice.

b. A: nosorogi$_i$ bojats^{j}a myšej$_j$
rhinos.NOM fear mice.ACC
'Rhinos fear mice.'

B: ?(net) NOSOROGI$_i$ bojatsa BEGEMOTOV$_k$ a MYŠEJ$_k$
no rhinos.NOM fear hippos.GEN CTR mice
~~bojatsa~~ SLONY$_i$
fear elephants.NOM
'(No), it is rhinos who fear hippos, and who fear mice, are elephants.'

Similar generalizations hold for Ossetic and Georgian. See analogous observations for German in Konietzko & Winkler (2010: 1441). For Swedish, Teleman et al (1999: 974) report that differences in the order of remnants and correlates between the antecedent and the gap are possible, although dispreferred, as the contrast between (81 a) and (81b) illustrates.

(81) Swedish

a. Boken hade Sven visat för Lena och bilen
the.book had Sven shown to Lena and the.car
~~hade Sven visat~~ för Per
had Sven shown to Per
'Sven showed Lena a book, and Per, a car.'

b. ?För Lena hade Sven visat boken och bilen
to Lena had Sven shown the.book and the.car
~~hade Sven visat~~ för Per
had Sven shown to Per
Idem

Move-and-delete approaches to ellipsis, including the proposal to be advanced here, do not predict obligatory order matching. I ascribe the preference for it to a greater ease of parsing under the matching order.

Furthermore, respective remnants must match in morphological case with their correlates. In the antecedent in (82), the verb 'to like' assigns the dative to its experiencer (in these sentences, Oleg) and the nominative to the stimulus – in these sentences, *samogon* 'moonshine'. Accordingly, the remnants (*Vasya* and *vodka*) must be marked, respectively, with the dative and the nominative as well (82a).

(82) Russian

a. oleg-u nravits^{j}a samogon a vas-e
Oleg-DAT likes moonshine CTR Vasya-DAT
vodka
vodka-NOM
'Oleg likes moonshine, and Vasya, vodka.'

b. *olegu nravits^{j}a samogon a vas^{j}a
Oleg-DAT likes moonshine CTR Vasya-NOM
vodku
vodka-ACC
Idem (intended)

In principle, the case marking pattern in (82b) could be obtained if a verb with a similar meaning, *l^{j}ubit^{j}* 'to love', had been gapped in the second conjunct. However, it is impossible to reconstruct it without an overt antecedent.

It is probably appropriate to mention here that the literature sometimes reproduces the claim of Jackendoff's (1971) that English limits the number of remnants under gapping. This generalization is actually incorrect for English, nor have I been able to find a similar constraint in any of the languages under discussion, see Boone (2014) to the same effect.

4.2.3.3 Tense, aspect, and mood

In most of the languages I have data about, the antecedent and the gapping site must match in tense, aspect, and mood. To illustrate the obligatory match in tense, the antecedent and the gapping site in the Russian sentence in (83a) contain temporal adverbials 'yesterday' and 'tomorrow' that ensure a mismatch in tense.

To ensure a mismatch in aspect in (83b), a *for*-adverbial *mesʲac* 'for a month' and an *in*-adverbial *za nedelʲu* 'in a week' are used. For-adverbials, i.e. the translations of the English *for*-phrases in the sense of Vendler (1967), are only compatible in Russian with imperfective verbs, and in-adverbials, with perfective ones[35]. It should be noted that the counterparts of (83 a-b) without ellipsis are grammatical. A similar observation has been made for Polish by Citko (2018: 24) and for German, by Repp (2009).

(83) Russian

a. *vasʲa dežuril včera a petʲa
Vasya was.on.duty yesterday CTR Petya
~~budet dežuritʲ~~ zavtra
will be.on.duty tomorrow
'Vasya was on duty yesterday, and Petya (will be on duty) tomorrow.'

b. *vasʲa pisal statʲju mesʲac a petʲa ~~napisal~~
Vasya wrote.IPF article for.month CTR Petya wrote.IPF
recenziju za nedelʲu
review in week
'Vasya had been writing the article for a month, and Petya (wrote) the review in a week.'

[35] For-adverbials in Russian are marked with the accusative, while in-adverbials with the preposition *za* 'behind'.

Tense matching is also required in Farsi, Farudi (2013); Moroccan Arabic (my field data); Turkish, İnce (2009), and German, Repp (2009).

In Georgian, however, the situation is more complex. Georgian tense-aspect-mood paradigms are divided into three series, Harris (1981; 1985), Boeder (2005). Within each of the series, the subject and the direct object of a transitive verb receive the same case marking: the nominative and the dative in the 1st series, the ergative and the nominative in the 2nd series, and the dative (for the subject) and the nominative (for the direct object) in the 3rd series.

Now, tense mismatches are possible, at least for some speakers, if the verbs in the two conjuncts belong to the same series (84 a-b) and impossible, if they belong to different series (84 c-d). In (84 a-b), the tenses in the two conjuncts are the imperfect and the future, both of the 1st series, and in (84 c-d), the aorist (the 2nd series), and the future (the 1st series). The sentence in (84d) involves an intransitive verb, whose arguments bear the same case marking in the 1st and the 2nd series, which shows that the source of degradedness does not lie (only) in the case mismatch between the remnants and their correlates.

(84) Georgian

a. ia dɣes xač'ap'urs gamoacxobda
Ia.NOM today khachapuri.DAT cook.IPF
Nino k'i xwal mč'ads ~~gamoacxobs~~
Nino.NOM CTR tomorrow cornbread.DAT cook.FUT
'Ia baked a khachapuri today and Nino (will bake) a mchadi tomorrow.'

b. ia gušin berlin=ši čaprindeboda nino k'i
Ia.NOM yesterday Berlin=to fly.IPF Nino.nom CTR
xval p'ariz=ši ~~čaprindeba~~
tomorrow Paris=to fly.FUT
'Ia flew to Berlin yesterday, and Nino (will) fly to Paris tomorrow.'

c. *iam dγes xač'ap'uri gamoacxo nino=k'i
Ia.ERG today khachapuri.NOM bake.AOR Nino.NOM=CTR
xval mč'ads ~~gamoacxobs~~
tomorrow mchadi.DAT bake.FUT
'Ia baked a khachapuri today, and Nino (will bake) a mchadi tomorrow.' (intended)

d. *ia gušin berlin=ši čaprinda nino k'i
Ia.NOM yesterday Berlin=to fly.AOR Nino.nom CTR
xval p'ariz=ši ~~čaprindeba~~
tomorrow Paris=to fly.FUT
'Ia flew to Berlin yesterday, and Nino (will) fly to Paris tomorrow.' (intended

Tense mismatches are allowed in Ossetic as well, as illustrated for Iron Ossetic in (85).

(85) Iron Ossetic
žnon səkolamɐ sədtɐn χetɐg=ta rajšom čermen-mɐ
yesterday Chikola.ALL I.went Khetag=CTR tomorrow Cermen-ALL
'Yesterday I went to Chikola, and Khetag (will go) tomorrow to Chermen.'

On the other hand, the antecedent and the gapping site must still match in aspect even in Ossetic. Like in the case of Russian, this can be checked using duration adverbials: for-adverbials do not bear overt case marking, while in-adverbials are marked with the allative. In the ungrammatical sentence in (86), an in-adverbial 'in 2 days' in the antecedent contrasts with the for-adverbial 'for one day' in the gapping site. Without ellipsis, (86) would have been grammatical.

(86) Digor Ossetic

*zawur	duwɐ	bonemɐ	χɐd͡zarɐ	niχχursta
Zaur	2	day.ALL	house	painted.PF
χetɐg=ba	jew	bon	~~χɐd͡zarɐ~~	~~χursta~~
Khetag=CTR	1	day	house	painted.IPF

'Zaur painted the house in two days, and Khetag (painted the house) for one day.'

Alternatively, the sentence in (86) can be made grammatical by changing the case marking on the adverbial *jew bon* 'one day' in the second conjunct. If it is marked with the allative (*jew bon-mɐ*), the gapping site will receive a perfective interpretation, matching that of the antecedent.

To illustrate the requirement to match in modality, consider the Russian sentence in (87). The non-indicative mood is marked in Russian by the enclitic =*by*, while the verb stands in the morphological past, Bailyn (2012); Timberlake (2012). When the antecedent is in the irrealis, the enclitic =*by* cannot be retained in the ellipsis site (87). In principle, that could have allowed the indicative interpretation of the gap. The would-be reading of (87) is 'Vasya would have bought a goat, and Petya did buy a cow.' In actuality, such a reading is not available.

(87) Russian

vasʲa	by	kupil	kozu	a	petʲa	(*by)	korovu
Vasya	IRR	bought	goat	CTR	Petya	IRR	cow

available reading: 'Vasya would buy a goat and Petya would buy a cow.'
unavailable reading: 'Vasya would buy a goat and Petya bought a cow.'

For Ossetic, mismatches in modality are possible. Although it is difficult to come up with a coordination example where a mismatch in modality would be a priori plausible, such contexts are possible with embedded gapping (88). Here, the finite

verb *kodton* do.PST.1SG in the antecedent 'I fed the cow' is in the indicative, while in the gap, the future subjunctive form *kɐna* do.SUB.FUT.3SG must be reconstructed[36].

(88) Iron Ossetic

ɐž	nɐ=qug-ɐn	baχɐrən	kodton	nɐ=fəd=ta	
I	our=cow-DAT	eat.INF	I.did	our=father=CTR	
žaχta	sɐmɐj	alinɐ	nɐ=bɐχ-ɐn	~~baχɐrən~~	~~kɐna~~
said	COMP	Alina	our=horse-dat	eat.INF	do.SUB.FUT.3SG

'I fed the cow and our father told Alina to feed the horse., lit. 'that she feed the horse.'

4.2.3.4 Voice

I know of no examples of gapping where the voice of the antecedent and the gapping clause would not match.

4.2.3.5 Polarity

By polarity, I mean the presence or absence of morphologially expressed negation in a given clause. Polarity mismatches between the antecedent and the ellipsis site are possible in gapping, but conditions under which they are possible vary across languages.

[36] This TAM form is required by the presence of the complementizer *sɐmɐj*.

In the absence of n-words[37], the gapping site and the antecedent must match in polarity in Russian[38]: if negation is present in the antecedent, it will be obligatory reconstructed in the ellipsis site (89).

(89) Russian
vasʲa ne pʲjot vodku a petʲa samogon
Vasya NEG drinks vodka CTR Petya moonshine
available reading: 'Vasya doesn't drink vodka and Petya doesn't drink moonshine.[39]'
unavailable reading: 'Vasya doesn't drink vodka and Petya drinks moonshine.'

The point about the scope of negation holds for Ossetic[40] as well, (90). Negation in these sentences there has separate scopes in both conjuncts: the English translations of the sentences in (90) represent the only readings these sentences have.

---

[37] N-words are nominal and adverbial items that appear in Negative Concord (and Negative Spread) structures. The term is due to Laka (1990). A convenient technical definition of n-words was formulated by Giannakidou (2006). "An expression α is an n-word iff: (a) α can be used in structures containing sentential negation or another α-expression yielding a reading equivalent to one logical negation; and (b) α can provide a negative fragment answer."

[38] Negation in Russian is expressed by a verb proclitic *ne*. Russian is a strict Negative Concord language: for n-words to be licensed, overt negation must be present in the clause (i).

(i) Russian
nikto nikogda *(ne) videl nikakix jedinorogov
no.one never NEG saw none unicorns
'No one has ever seen any unicorns.'

[39] See Section 4.6 for a discussion of the absence of the wide scope reading of negation in this kind of construction in Russian.

[40] Digor and Iron Ossetic are Strict Negative Spread languages, Erschler & Volk (2011), Erschler (to appear). (Modality-dependent) negative markers are proclitics to the verb (i a), n-words are incompatible with negative markers, but can occur in any number in a clause (i b), where they obligatorily form a cluster immediately preceding the verb.

(i) Digor Ossetic
a. soslan **ne**=rbacudɐj
Soslan NEG=arrived
'Soslan didn't arrive.'

(90) Digor Ossetic

a. ɐχsarɐ tikistɐ nɐ=warzuj azɐmɐt=ba kujtɐ
Akhsara cats NEG=loves Azamat=CTR dogs
'Akhsara doesn't like cats, and Azamat (doesn't like) dogs.'

b. ruslan ɐmʤɐvgitɐ nekɐd kɐsuj
Ruslan poems never reads
χetɐg=ba raʤurdtɐ
Khetag=CTR stories
'Ruslan never reads poems, and Khetag (never reads) stories.'

In Russian, the negation marker *ne*= or the negative polarity particle[41] *net* cannot occur in a gapping site (91), no matter whether the first conjunct is negative (91a) or positive (91b).

(91) Russian

a. *vasʲa ne pʲjot vodku a petʲa ne/net samogon
Vasya NEG drinks vodka CTR Petya NEG/no moonshine
intended: 'Vasya doesn't drink vodka and Petya doesn't drink moonshine.'

b. *vasʲa pʲjot vodku a petʲa ne/net samogon
Vasya drinks vodka CTR Petya NEG/no moonshine
intended: 'Vasya drinks vodka and Petya doesn't drink moonshine.'

Using n-words as remnants or the correlates of remnants, it is possible to coerce a polarity mismatch (92) both in Russian and Ossetic. Such sentences in

b. **ne-ke** **ne-kɐd** (*nɐ)=adtɐj mars-bɐl
NEG-who NEG-when NEG=was Mars-SUP
'No one has ever been on Mars.' (negative concord, actual reading)
*'Everyone has been on Mars some time.' (double negation, impossible reading)

[41] The polarity particle *net* must occur sentence finally, Gribanova (2017). We will discuss later the import of this fact for the analysis of gapping in Russian.

Russian, however, are sometimes degraded[42]. In particular, the sentence in (92a) becomes much worse without *tolʲko* 'only' modifying the direct object *samogon* 'moonshine'. Note that given that Ossetic exhibits Strict Negative Spread, the presence of the n-word *nekɐd* 'never' ensures that the gapping site in (92b) must be of negative polarity.

(92) a. Russian
?vasʲa ne pʲjot ničevo a petʲa tolʲko samogon
Vasya NEG drinks nothing CTR Petya only moonshine
'Vasya doesn't drink anything, and Petya only drinks moonshine.'
??'Vasya doesn't drink anything, and Petya doesn't drink only moonshine.'

b. Digor Ossetic
soslan mɐdinɐbɐl ɐwwɐnduj χetɐg=ba
Soslan Madina.SUP believes Khetag=CTR
ɐppundɐr nekɐbɐl
at.all nobody.SUP
'Soslan believes Madina, and Khetag believes no one at all.'

In German, a polarity mismatch is reported possible by Repp (2009: 94) for clauses conjoined with *aber* 'but', provided appropriate prosody.

(93) German
Carl hat meine Katze nicht genommen
Carl has my cat NEG taken
aber Harry ~~hat~~ meinen Hamster ~~genommen~~
but Harry has my.ACC hamster taken
'Carl didn't take my cat, but Harry took my hamster.'

[42] In Polish, polarity mismatches under (forward) gapping are reported fully grammatical by Citko (2018: 9).

To conclude, given that polarity mismatches are possible in a variety of languages, any typologically viable theory of gapping must allow for such a mismatch.

4.2.4 Summary

To recapitulate the discussion of this section, we have seen that gapping always involves contrast; furthermore, the gapping site and the antecedent must match in the properties that are determined sufficiently low in the tree, such as the case marking of the remnants or the voice of the verb. The higher the feature is in the tree, the more likely it is that in some language a mismatch will be allowed between the antecedent and the gap. Furthermore, languages differ in whether a gapping site may be embedded while its antecedent is situated in a superordinate clause, or in another embedded clause.

Any analysis of gapping must ideally be able to predict or, at the very least, should not *a priori* rule out, the patterns of cross-linguistic variation outlined above. With this in view, let us discuss (some of) the analyses of gapping advanced in the recent literature.

4.3. Analyses in previous literature

In this section, I overview a number of extant analyses of gapping and show that they fail to account for the properties of embeddable gapping. For reasons of space, I

largely gloss over non-minimalist analyses of ellipsis[43]. For a detailed overview of recent minimalist approaches to gapping see also Jung (2016).

One type of analysis that I am going to discuss proposes that an appearance of ellipsis under gapping is created in such cases by some kind of **ACROSS-THE-BOARD MOVEMENT**, Johnson (2009); Agbayani & Zoerner (2004). In a similar spirit, Winkler (2005) and Repp (2009) explore different variants of sidewards movement – an operation proposed by Nunes (2004).

A different type of approach, going back to Williams (1997) posits that **AN LF COPYING PROCESS** supplies the missing structure in a gapping site.

Finally, several recent works (including İnce 2009; Gengel 2013; Boone 2014; Weir 2014; Fernández-Sánchez 2016; Wurmbrand 2017) apply different variants of the **MOVE AND DELETE APPROACH** to what we call here embedded gapping, and, in some of these works, to matrix gapping as well.

4.3.1 Across the Board movement analyses

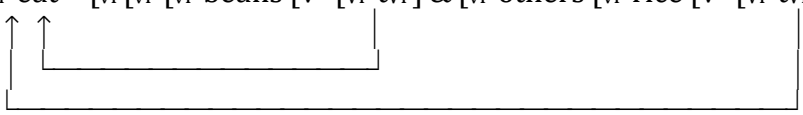
Johnson (2009) analyzes gapping in English as a result of vP coordination under a shared TP and across the board movement of the two VPs. The sentence in (94a) is thus parsed as in (94b). For the sake of simplicity, I am not showing the movements of the subject of the first conjunct, *some*, out of the first vP where it is assumed to be

[43] These include early generative analyses, such as e.g. Ross (1970) and Jackendoff (1971), and analyses within radically different theoretical frameworks, e.g. that of Categorial Grammar, Steedman (1990); van Zonnenveld (1991); Kubota & Levine (2015; 2016), a.o.

base-generated, and the movement of the remnants *beans* and *rice* out of the respective VPs.

(94) a. Some will eat beans, and others rice

b. [$_{TP}$ some
[$_{TP}$ will [$_{VP}$ eat [$_{vP}$[$_{vP}$ [$_{vP}$ beans [v^0 [$_{VP}$ t$_{VP}$] & [$_{vP}$ others [$_{vP}$ rice [v^0 [$_{VP}$ t$_{VP}$]]



For arguments against the ATB analysis of gapping in English, I refer the reader to Ince (2009), Vicente (2010), Toosarvandani (2016), and Potter et al (2017). One prediction that ATB accounts definitely make is that gapping must be tied to the presence of coordination. As we will see in Section 3.5.2, gapping may occur without coordination in some of the languages under discussion.

As for sidewards movement based analyses, including Agbayani & Zoerner (2004); Winkler (2005); and Repp (2009), it is not fully clear what locality conditions sidewards movement is subject to[44]. If it cannot proceed out of an embedded CP, this type of analysis automatically rules out embedded gapping. If it can, embedded gapping appears to be predicted by this type of account to be possible in English or Dutch.

[44] The same objection is applicable to ATB accounts.

4.3.2 LF copying type analyses

Several proposals, starting with Williams (1997), posit an array of null categories (which in the case of gapping correspond to the missing verb) and a dedicated rule, or a family of rules, that essentially instruct to copy the contents of the antecedent to the null element.

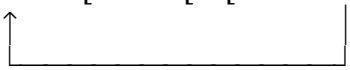
At LF, the semantic contents of the antecedent are then copied to the null category. However, the very format of this rule does not allow for ellipsis in embedded structures: the relation between the null heads is assumed to be subject to the relativized minimality condition, and thus an intervening matrix verb would interrupt it. It is not immediately clear how to generalize this type of proposal so that it would account for the cross-linguistic variation in the embeddability of gapping, and I will not explore this possibility in the current chapter.

Carrera Hernández (2007) *a priori* excludes backward gapping from consideration (although, as far as I am able to tell, her analysis is directly applicable to backward gapping in matrix clauses). More critically to our current purposes, her analysis appeals to a special direct relation between the antecedent and the gapping site, which she calls dependency. This is a *sui generis* concept introduced in Koster (1987) and Neeleman & Van de Koot (2002). Besides other conditions, it must obey locality, for which reason this analysis automatically rules out embedded gapping. It is possible, of course, to investigate whether the theory of dependency could be modified to relax the locality conditions, however, this is not a goal I am going to pursue in this chapter.

4.3.3 Move & Delete analyses

A number of accounts, including Jayaseelan (1990); Lasnik (1999); Johnson (2000); Coppock (2001); Lin (2002); Baltin (2003); Takahashi (2004), Vanden Wyngaerd (2007), Ince (2009), and Gengel (2013) assume that the material that survives gapping moves out of the constituent to be deleted, and then ellipsis proceeds, as schematically shown in (95). The nature of the evacuating movement varies across the proposals. The size of the deleted constituent may vary across languages. While for English it is typically assumed to be the VP or the vP, it can in principle be significantly larger. For instance, Ai (2014) proposes that in Mandarin Chinese, the entire IP gets deleted.

(95) Some will eat beans and [others rice [~~XP will [vP [VP eat t_{rice}]]~~]]



Some of the accounts of this type, e.g. Aelbrecht (2007), Gengel (2013), and Farudi (2013), explicitly use the feature-based approach to ellipsis licensing. Boone (2014) and Fernández-Sánchez (2016) analyze the phenomenon I call "embedded gapping" as "embedded fragments", i.e. something separate from the usual matrix gapping.

4.3.4 Summary

To recapitulate the discussion of this section, for ATB / sidewards movement and LF copying analyses alike, a further elaboration of the theory is required to determine whether they can correctly treat embedding phenomena. On the other hand, as I will argue in the next section, move-and-delete approaches can be straightforwardly modified to capture the cross-linguistic variation.

4.4. Proposal

In this section, I lay out my proposal. I first discuss the creation of the remnant (Section 4.4.1) and then proceed to develop the key novel ingredient of the proposal, the hypothesis that the E-feature may be hosted by different heads in different languages. I first show that the standard English facts can be captured by the assumption that the E-feature is hosted by the coordinating head $\&^0$ (Section 4.4.2), and then discuss how languages with such a location of E-feature may still allow embedded gapping (Section 4.4.3). In Section 4.4.4, I advance the proposal that in many languages that allow embedded gapping, the E-feature is actually hosted in the left periphery of the clause that contains the gap.

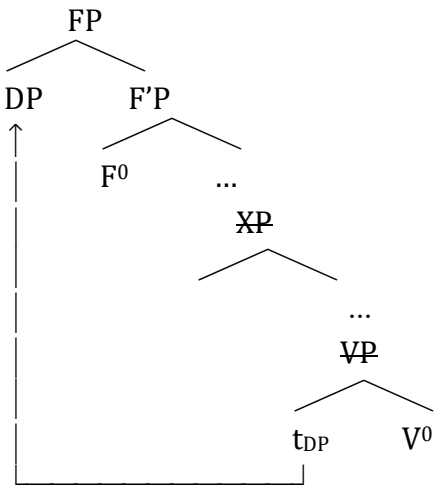
4.4.1 Creating the remnant

To create the remnant, the material that survives gapping moves out of the constituent to be deleted into the specifiers of some left peripheral projections, FP in

(96). For the sake of simplicity, I only show the movement of one constituent. The remnant XP then undergoes deletion. This part of the proposal is fairly uncontroversial. It builds on the proposals discussed in section 3.3, and essentially goes back to Merchant's (2004) analysis of fragments.

For the time being, I stay agnostic as to the precise size of that constituent, but I assume that it is at least a VP. I use XP to denote it in (96). It is possible that languages vary with respect to the size of the XP: for English, the consensus is that it is a vP, Coppock (2001), Lin (2001), Johnson (2009), Toosarvandani (2016), Potter et al (2017) a.o., however, as I will argue in Section 3.6, it might be actually significantly larger.

(96)



At this point, we can observe that this approach makes an immediate prediction about the possibility of gapping in a given clause. Namely, gapping will be impossible in a given clause if its left periphery is not large enough to host the remnants. If the left periphery in embedded clauses in a given language is not rich enough, movement out

of the VP will fail and embedded gapping will not be observable, as has been argued for Turkish by İnce (2009). Fernández-Sánchez (2016) proposed an empirical generalization that in Polish and Spanish, only non-factive matrix verbs may host embedded gapping[45] (embedded fragments in his terms). He connected it to the proposal of de Cuba & McDonald (2013) that the complements of non-factives have a richer left periphery. Even if this proposal is true for Polish and Sanish, the restriction on the the type of matrix verbs does not hold cross-linguistically. For instance, in Russian, a wide variety of verbs, including factive ones, can easily host gapping, (97).

(97) Russian

Attitude verbs

a. etrurija navernjaka vyigraet u finikii, no
Etruria definitely will.win at Phoenicia but
ja **somnevajus**^{j} što gallija ~~vyigraet~~ u likii
I I.doubt COMP Gallia will.win at Lycia
'Etruria will certainly defeat Phoenicia, but I doubt that Gallia (will defeat) Lycia.'

b. etrurija navernjaka vyigraet u finikii i
Etruria definitely will.win at Phoenicia but
ja **bojus**^{j} što gallija ~~vyigraet~~ u likii
I I.fear COMP Gallia will.win at Lycia
'Etruria will certainly defeat Phoenicia, and I am afraid that Gallia (will defeat) Lycia.'

Factive verbs

c. elam včera vyigral u finikii i ja
Elam yesterday won at Phoenicia and I
tol^{j}ko=što **uznal** što gallija ~~vyigrala~~ u likii
just I.learned COMP Gallia won at Lycia
'Elam yesterday defeated Phoenicia and I've just learned that Gallia (defeated) Lycia.'

[45] However, as Jung (2016: 84) demonstrates, this generalization has exceptions.

d. krasnyje lapti konešno vyigrali u nadira
red bast.shoes of.course won at Nadir
no ty **zabyl** što zaborostoitel^{j} ~~vyigral~~u jauzy
but you forgot COMP Zaborostroitel won at Yauza
'The Krasnye Lapti of course defeated the Nadir, but you've forgotten that the Zaborostroitel defeated the Yauza.'

e. krasnyje lapti ne mogut vyigrat^{j} u nadira
red bast.shoes NEG can win.INF at Nadir
i ja teper^{j} **ponjal** što zaborostoitel^{j} ~~ne~~
and I now understood COMP Zaborostroitel NEG
~~možet~~ ~~vyigrat~~^{j} u jauzy tože
can win.INF at Yauza too
'The Krasnye Lapti cannot defeat the Nadir, and now I've realized that the Zaborostroitel cannot defeat the Yauza either.'

f. krasnyje lapti ne mogut vyigrat^{j} u nadira
red bast.shoes NEG can win.INF at Nadir
i Vas^{j}a **objasnil** što zaborostoitel^{j} ~~ne~~ ~~možet~~
and Vasya explained COMP Zaborostroitel ~~NEG~~ can
~~vyigrat~~^{j} u jauzy tože
win.INF at Yauza too
'The Krasnye Lapti cannot defeat the Nadir, and Vasya has explained that the Zaborostroitel cannot defeat the Yauza either.'

The move and delete analysis of gapping is naturally equipped to track cross-linguistic and language-internal variation that is due to variation in the sizes of the left periphery across languages or clauses within a given language. For clauses with insufficiently large left periphery, the move & delete approach successfully predicts ungrammaticality of gaps hosted by such clauses. It remains to be seen, however, whether ellipsis licensing can be implemented in a satisfactory manner in such an account. This will be taken up in the sections to follow.

To provide evidence in favor of silent structure in gapping sites, and consequently in favor of the current proposal, consider the tests for deleted structure discussed above in Section 3.2.1. Their application to gapping yields the following

outcomes. First, the necessity of extraction is built into the move-and-delete approach, so this point is rather moot. As we have seen in Section 2.3.2, case connectivity effects obtain for gapping, but they are predicted by ATB movement aproaches as well. In Russian, anaphora is possible to the content of the gapping site[46] (98).

(98) Russian
(Vasya and Masha each own a cat.)

vas^{j}a	naučil	svoju	košku	latyni	a	maša	drevnegrečeskomu
Vasya	taught	self's	cat	Latin	CTR	Masha	Ancient.Greek
i	ona	teper^{j}	čitaet	po	nočam	platona	
and	she	now	reads	at	nights	Plato	

'Vasya taught his cat Latin, and Masha (taught her cat) Ancient Greek, and now it reads Plato at night.'

Furthermore, ATB extraction is possible out of gapping sites as well (assuming a raising analysis of relative clauses) (99).

(99) Russian

vot	kniga	kotoruju	maša	rekomendovala	daše
here	book	which	Masha	recommended.F	Dasha.DAT
a	kol^{j}a	~~rekomendoval~~		tole	
CTR	Kolya	recommended.M		Tolya.DAT	

'Here is a book that Masha recommended to Dasha, and Kolya to Tolya.'

These facts serve as evidence in favor of some silent structure in the gapping site.

[46] Many English speakers find it hard or impossible to get the sloppy reading in sentences such as in (i). At present, I don't have an explanation for this. However, the absence of sloppy reading cannot be taken as an argument *against* the presence of silent structure, Merchant (2001).

(i) (John and Mary each own a cat.) John has taught his cat Latin, and Mary, Greek, so now it reads Plato.

A prediction of the current account of gapping that is not borne out is that English gapping should allow preposition stranding, given that DPs may move out of PPs in English. This is not the case, see e.g. Jayaseelan (1990), Lasnik & Saito (1991), and Abe & Hoshi (1997). However, the absence of P-stranding is problematic for any account of gapping[47], unless one posits that remnants are evacuated from the constituent to be deleted by rightward movement, as Jayaseelan (1990) and Lasnik & Saito (1991) did; or unless one makes some additional special assumptions about the nature of P-stranding in English, as Abe & Hoshi (1997) do. The reason why the evacuating movement is unlikely to be directed rightwards is that the class of remnants under gapping in English is much wider than the class of items that can undergo Heavy NP Shift, the prototypical rightward movement. Accordingly, I do not take this non-prediction to be fatal for the current proposal.

4.4.2 Licensing deletion: E-feature on &^{0}

Let us now proceed to the second technical ingredient of the proposal, the implementation of deletion licensing. To repeat, I have slightly modified the proposal of Aelbrecht (2010). Namely, I place the licensing E-feature on the higher head, L^0 in (100), and make it agree with the X^0 whose complement is to be deleted, while in

[47] Pseudo-gapping does not countenance P-stranding either (i a), the only exception is complex verbs (i b), i.e. those that can passivize (i c).

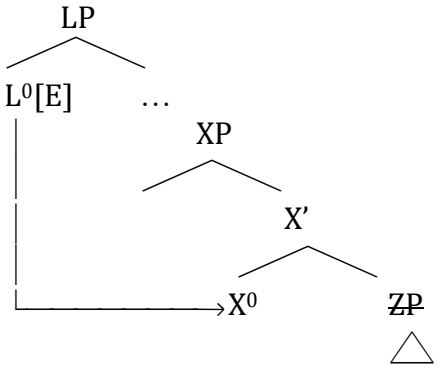
(i) a. *John stood near Mary and Bill should ~~stand near~~ Susan.

b. John spoke to Bill and Mary should **Susan.** Thoms (2016: 288)

c. Bill was spoken to.

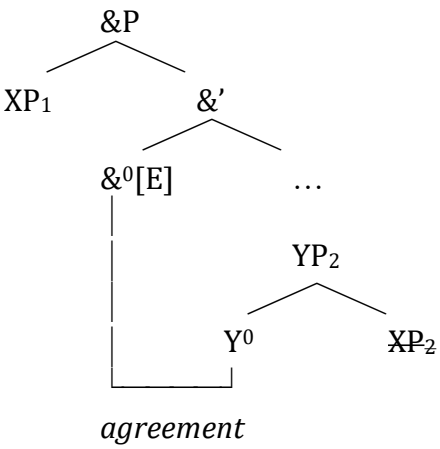
Aelbrecht's proposal, the E-feature is hosted by X^0, and (upward) agreement is with L^0.

(100)



The key idea that I explore is that languages vary in where the E-feature is situated that is responsible for gapping. In languages such as English or Dutch that mostly restrict gapping to coordinations, the E-feature is hosted by $\&^0$ – I will call this "high" licensing of gapping (101).

(101) a.

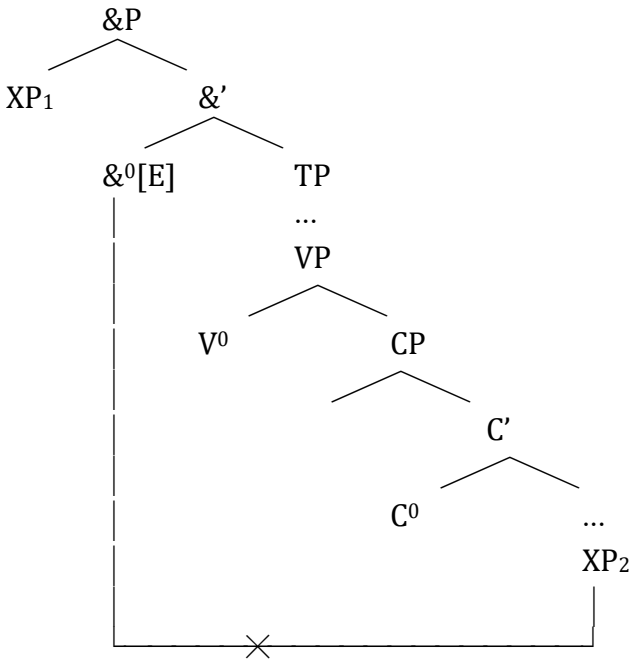


b. Mary drinks tea and John ~~drinks~~ coffee

Now, if the gapping site is *embedded* in a finite clause and the E-feature is hosted on $\&^0$, agreement fails to occur for locality reasons (102). I assume that agreement

cannot normally cross a CP boundary[48], see e.g. Bhatt & Keine (2017). Consequently, embedded gapping in such languages is predicted to be ungrammatical.

(102) a.



b. *Mary drinks tea and I think [that John ~~drinks~~ coffee]

c. Dutch

*Peter	houdt	van	bananen,	en	ik	denk
Peter	likes	of	bananas	and	I	think
dat	Jessica	van	peren.			
COMP	J.	of	pears			

'Peter likes bananas and I think that Jessica (likes) pears.'
Aelbrecht (2007)

This analysis correctly predicts that gapping will still be possible in embedded clauses when the antecedent is situated in the same embedded clause, even if a given

[48] As for finer locality properties of this agreement operation, it is likely that they vary across languages, as it is the case for more familiar types of agreement, see the discussion in Bhatt & Keine (2017) and the references there.

language disallows embedded gapping in our sense: the licensing feature will still be able to be hosted by &^{0}. This is illustrated in (103a) for English, and in (103b) for Dutch.

(103) a. I think [that Mary drinks tea and you ~~drink~~ coffee]

b. Dutch
Ik denk dat [Jan koffie drinkt en jullie thee
I think COMP Jan coffee drinks and you tea
~~drinken~~]
drink
'I think that Jan drinks coffee, and you, tea.'

The languages that belong to this type include English, German, Dutch, Serbian, and Slovenian.

Let us explore some further predictions made by this account. First, trivially, gapping will be impossible in the absence of coordination (104), given that the licensing feature can only sit on &^{0}.

(104) a. *Mary drank whisky while/because John rum.

b. Dutch
*Mary dronk whisky terwijl/omdat John rum
Mary drank whisky while/because John rum
~~dronk~~
drank
Idem

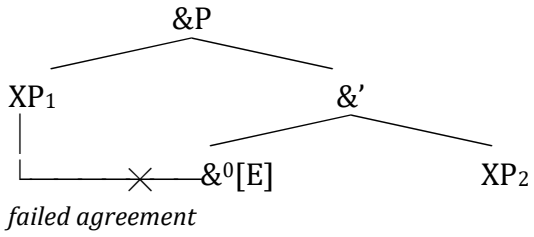
c. German
*Jan trinkt Kaffee weil/wann Heike Tee ~~trinkt~~
Jan drinks coffee because/when Heike tea drinks
'Jan drinks coffee because/when Heike (drinks) tea.' (intended)

d. Serbian
*Dragan pije kafu zato što /dok
Dragan drinks coffee because /while
Dragana ~~pije~~ čaj
Dragana drinks tea
'Dragan drinks coffee because/while Dragana (drinks) tea.' (intended)

e. Slovenian[49]
*Janez pije čaj če/ker Vid ~~pije~~ kavo
Janez drinks tea if/because Vid drinks coffee
'Janez drinks tea, if/because Vid (drinks) coffee.' (intended)

Second, assuming the now standard assymmetric structure for coordination, Munn (1993), Johannessen (1998), and the later literature, and that agreement may only proceed downwards (105a), we predict that languages with the E-feature of $\&^0$ will not allow backward gapping (105 b-c).

(105) a.



b. *Mary ~~drank~~ whiskey and John drank rum.

[49] With *medtem ko* 'while' gapping is judged ungrammatical on the temporal reading, and possible on the contrastive reading, when 'while' is used in the meaning of 'whereas'.

(i) Slovenian
Janez pije čaj, medtemko Vid ~~pije~~ kavo
Janez drinks tea while Vid drinks coffee
available reading 'Janez drinks tea, whereas Vid (drinks) coffee'
unavailable reading 'Janez drinks tea, in the time when Vid (drinks) coffee.'

Possibly, the two readings correspond to different clause structures. As it is often the case with gapping, there is some inter-speaker variation in judgments here.

c. Dutch

*Mary	~~dronk~~	whiskey	een	John	dronk	rum.
Mary	drank	whiskey	and	John	drank	rum

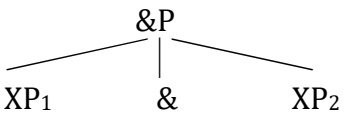
d. Slovenian

*Janez	~~pije~~	čaj	Vid	pa	~~pije~~	kavo
Janez	drinks	tea	Vid	CTR	drinks	coffee

While this prediction is borne out in all the cases of languages with the E-feature on &^{0} known to me[50], investigation of a much larger language sample is needed to assert its cross-linguistic validity. It is natural to inquire about how stable this prediction is with respect to changes in theoretical assumptions. This concerns, first, the asymmetric structure of coordinations, and, second, the directionality of agreement.

If one opts for a symmetric structure of coordination (106), the prediction about the directionality of gapping will no longer follow: even with the licensing feature on &^{0}, agreement should in principle be possible with either of the conjuncts.

(106)



[50] Dutch and German manifest what looks like backward gapping in embedded clauses (i). However, the properties of this construction are very different from those of forward gapping, and, as for instance Zwart (2011) extensively argues for Dutch, this construction should be analyzed as RNR.

(i) Dutch

…	dat	Tasman Tasmanië	en	Cook	de	Cook-eilanden
	COMP	Tasman Tasmania	and	Cook	the	Cook.islands

ontdekte
discover.PST.SG
'… that Tasman discovered Tasmania, and Cook, the Cook Islands.' Zwart (2011: 138).

A less clear case is Persian, as discussed by Farudi (2013), who nevertheless arrives at the conclusion that what looks like backward gapping in Persian is not derived in the same manner as forward gapping.

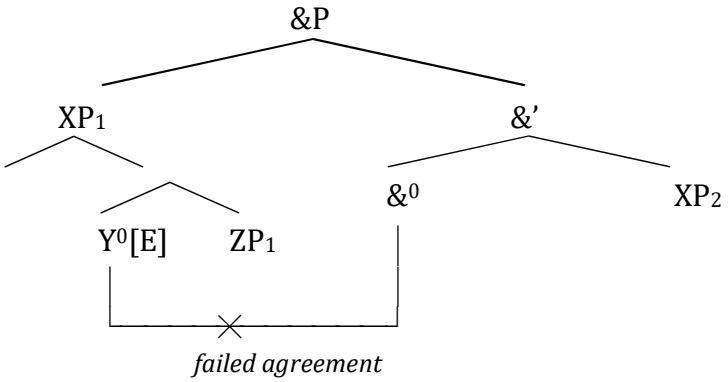
In this sense, if the generalization that languages with the E-feature on $\&^0$ disallow backward gapping should prove cross-linguistically valid, this will serve as an additional argument in favor of the asymmetric structure, albeit a rather indirect one.

As for the directionality of Agree, the current prediction appears to be stable with respect to the variation among the proposals advanced so far in the literature, except to one possible setting: Cyclic Agree whose default direction is upward.

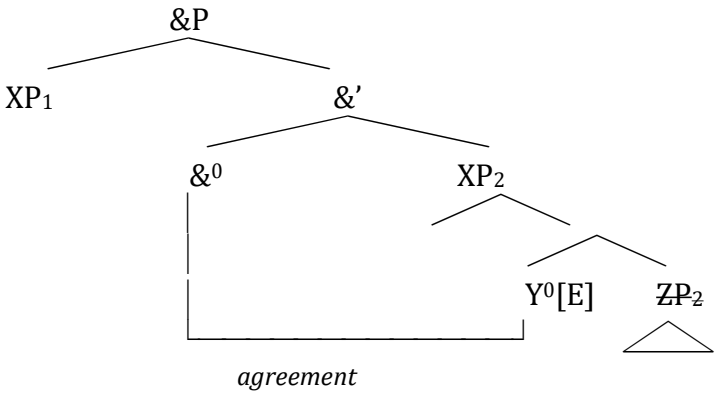
Let us explore how, and whether, the predictions of the current account vary with respect to the assumptions regarding the directionality of agreement. Proposals about the directionality of Agree include strictly downward Agree, see e.g. Chomsky (2000, 2001); Epstein & Seely (2006), Bošković (2007), and Preminger & Polinsky (2015), which is adopted here, strictly upward Agree, Wurmbrand (2012); Zeijlstra (2013) Bjorkman & Zeijlstra (2014), and various versions of cyclic Agree, where agreement can change direction if no appropriate goal is found under the default direction, see e.g. Béjar & Rezac (2009) and Preminger (2015).

If we were to revert to strictly upward Agree, as was envisioned in the original proposal of Aelbrecht (2010), we would have needed to relocate the E-feature to the sister of the constituent to be deleted and make it agree with $\&^0$. The prediction will remain the same, however: the first conjunct is higher in the structure than $\&^0$ and deletion within it will not be licensed (107a). On the other hand, if the E-feature is located in the second conjunct, upward agreement can proceed; and thus forward gapping is licensed (107b).

(107) a.



b.



Cyclic Agree whose default direction is downwards does not yield any new predictions either: the coordinator with the E-feature is always higher than the second conjunct (101), so no need arises to probe into the first conjunct. The only problematic setting is Cyclic Agree whose default direction is upwards. In that case, downward agreement as shown in (107a) will be possible after the goal will have found no appropriate higher probe.

We will discuss more predictions the current account makes for languages of this type in Section 3.5 when comparing them with languages with a low location of the E-feature.

4.4.3 Embedded gapping with the E-feature on &^{0}

We have seen in the preceding section that embedded gapping is normally impossible in a language that hosts the E-feature on &^{0}. Nevertheless, languages with a high locus of the E-feature can still allow embedded gapping under certain conditions. Those include, first, the ability of agreement to reach into (some) embedded clauses, and, second, the ability of the constituent to be deleted to move out of its embedded clause to become accessible to agreement. In this section, I address several case studies where one of these possibilities might obtain.

Temmerman (2013)[51], Weir (2014), and Wurmbrand (2017) observed that fragments can be embedded in Dutch and English under certain matrix verbs if an overt complementizer is absent (108). They primarily looked at stripping, but their arguments are replicable for gapping as well.

(108) a. Dutch

Q:	Wie	wint	de	wedstrijd?	
	who	wins	the	game	
A:	ik	zou	denken	(***dat***)	hij
	I	should	think	COMP	he

'I should think him.' Temmerman (2013: 248)

b. Jane loves to study rocks, and John says (***that***) geography too. Wurmbrand (2017)

They provide extensive evidence that fragment clauses are really embedded in these types of sentences (rather than, say, being quotations).

[51] In which she followed Barbiers (2000; 2002).

These data are replicable in the case of gapping, as illustrated in (109a) for Dutch. For English, the judgments are delicate, but as Wurmbrand (2017) reports, a contrast exists for many speakers between the versions with and without an overt complementizer (109 b-c).

(109) a. Dutch

A:	Wie	heeft	het	waar	gekocht?		
	who	has	it	where	bought		
	'Who bought it where?'						
B:	?Ik	zou	denken	(*dat)	Saskia	in	Amsterdam
	I	should	think	COMP	Saskia	in	Amsterdam
	'I should think Sakia (bought it) in Amsterdam.'						

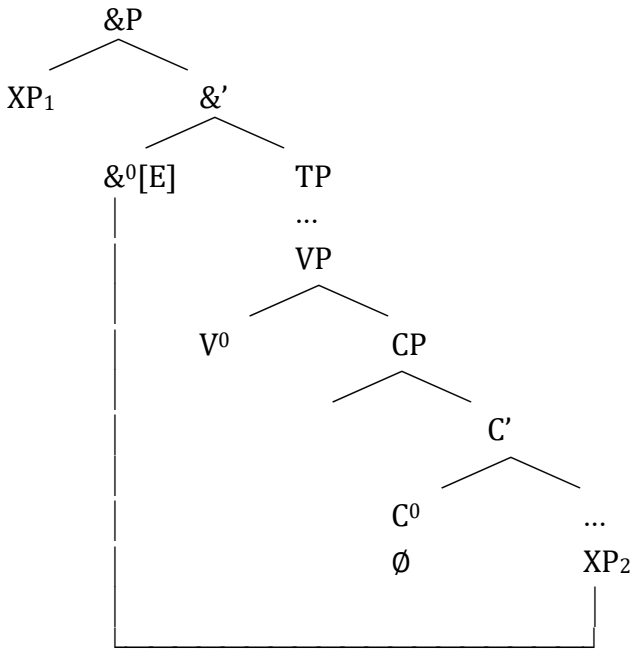
b. *Some will eat mussels and she claims **that** others ~~will eat~~ shrimp.

c. %Some will eat mussels and she claims others ~~will eat~~ shrimp.

Under the approach that I am developing here, this can be interpreted in one of the following ways. One possibility is that complementizerless embedded clauses in English and Dutch are transparent for the agreement implicated in deletion licensing (110), and furthermore, the relativized minimality condition on agreement is relaxed to allow agreement to bypass the matrix VP and reach into the complement CP. Accordingly, deletion is licensed in these cases.

(110) a. … and she claims others ~~will eat~~ shrimp

b.



However, it is undesirable to relax the locality properties of agreement in this manner. Should it be able to freely reach into C^0-less complements and to violate relativized minimality, we would predict sentences such as illustrated in (111) to be grammatical.

(111) *Mary made John study semantics and[E] Sue made Sam ~~study~~ phonology

Another way to reconcile the approach advocated here and the work of Temmerman's (2013) and of Wurmbrand's (2017) is to assume that, in the case of an impoverished left periphery, the constituent to be deleted can move out of the embedded clause and thus become visible to the high E-feature. Given the observation of Weir's (2014) that "embedded fragments" in English tend to be embedded under bridge verbs, and the observation of Barbiers (2000; 2002) that fragments can be

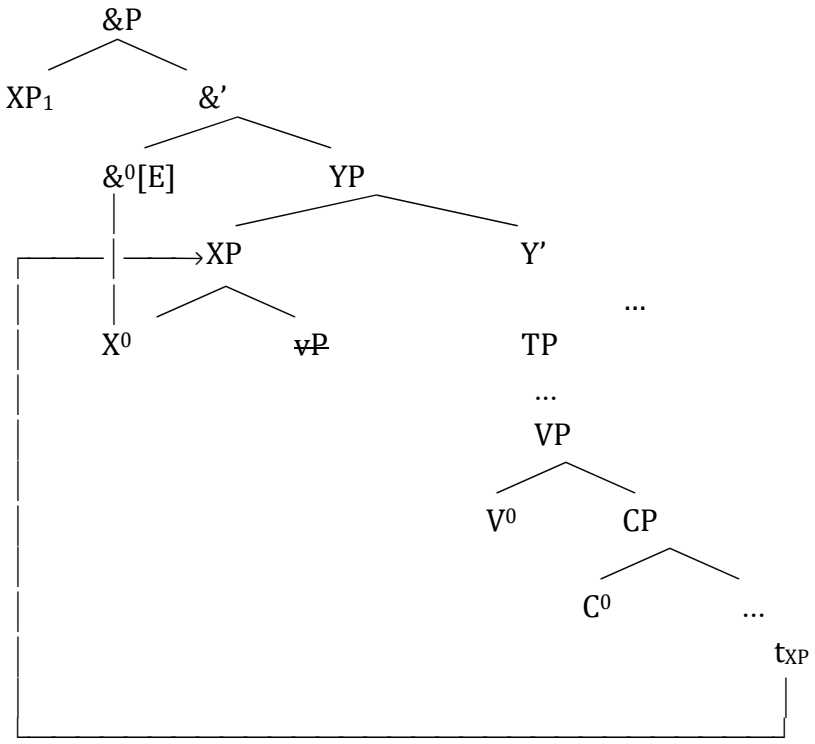
embedded only under a small number of matrix verbs in Dutch, this possibility is plausible.

Now, languages may vary as to whether (some) CPs are transparent for movement. Farudi (2013) proposed that instances of embedded gapping in Persian arise due to the fact that the vP can move out of the CP in this language to become accessible to agreement and be deleted.

In (112), I show an implementation of Farudi's proposal in the framework adopted in this dissertation. Let XP denote the extended projection of the vP that is targeted by the licensing agreement in Persian. Assume, for the sake of concreteness, that the vP is the complement of the XP. To become visible for agreement, XP needs move out of the embedded CP into the specifier of some projection YP sufficiently high in the root clause – it must be higher than the root XP in order to obviate the relativized minimality condition. I leave aside the question about what triggers the respective movement of the XP.

Once the XP reaches Spec YP in the matrix clause, it becomes visible to agreement that licensed deletion of the vP, and gapping obtains.

(112)

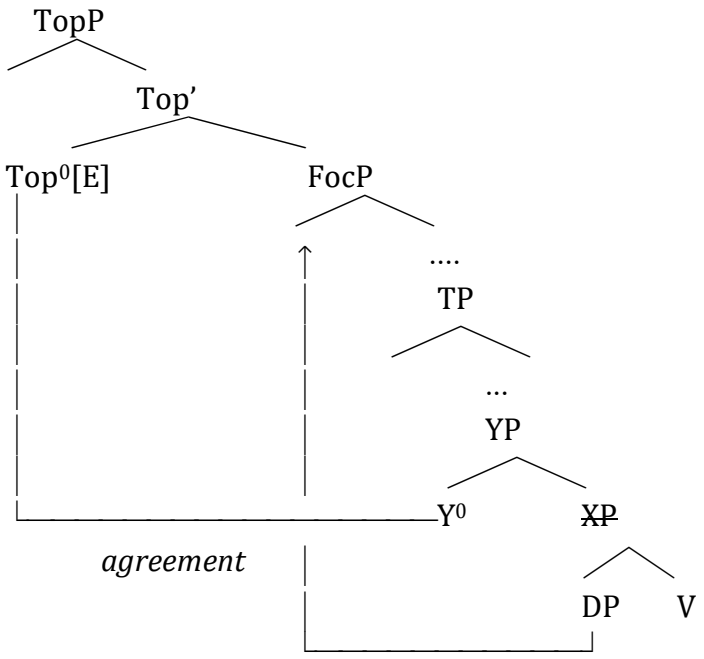


An immediate prediction for languages with a high location of E-feature and movement of vPs out of CPs, is that gaps will not be embeddable in islands. This is reported to be borne out for Persian, Farudi (2013). However, this analysis will not work for languages that (a) exhibit embedded gapping, but either (b) do not allow movement out of finite clauses or (c) allow embed gaps in standard islands. Such languages do indeed exist. For example, neither Ossetic, nor Georgian, nor Svan allow movement out of finite clauses, Harris (1981); Erschler (2012, 2014, 2015). However, if we allow the licensing feature to be hosted *lower* than on $\&^0$ we will be able to derive the facts in these languages.

4.4.4 Low licensing of deletion: E-feature on Top^0

To account for embedded gapping in the languages where it can occur in islands, I propose that the E-feature is hosted in such languages in the left periphery of the gapping clause itself, say, by Top^0, as schematized in (113).

(113)



We immediately rule in embedded gapping, as agreement is no longer impeded by locality.

I posit that the E-feature is hosted by the Topic head for the sake of concreteness. It is possible to imagine that the E-feature can be hosted in some other location in the left periphery, for instance, if the contrastive topic is not granted a projection of its own. It is not clear whether different choices of location of the E-feature high in the left periphery lead to testable different predictions.

Gengel (2013: 163) argues that the E-feature for English gapping is hosted by Foc^0. This account would predict embedded gapping grammatical for English; and is untenable as such. Her motivation was that the head carrying the E-feature must be the sister of the constituent to be deleted. Once we allow deletion licensing to be mediated by agreement, we overcome this problem. Recast in our terms, the Foc projection would need to agree with the coordinator, which is separated from it by a CP boundary. Accordingly, the agreement would fail.

4.5. Predictions

The current analysis makes a number of correct predictions for languages with low placement of the gapping-licensing feature. Although some of the examples below are somewhat marginal, they were nevertheless judged acceptable by a signifcant part of the speakers I have consulted.

4.5.1 Gaps in islands

First, as we have just seen, gapping in languages with the E feature on Top^0 is predicted to be **embeddable in islands**, given that the XP to be deleted does not need to move out of its ambient clause to agree with the E-feature, as schematized in (114a). This is illustrated in (114) for several types of islands. In (114 e-g), the

gapping site is embedded in a complex DP[52] in Georgian, Svan, Russian, Polish, Spanish, Hebrew, and Romanian, whereas in the Russian sentence in (114i), the gapping site 'that porcupines (hate) chipmunks' is embedded in a subject island.

(114) a. Antecedent & [Matrix clause [CP Top⁰[E] … ~~V~~ …]
ISLAND

Complex NP island

b. Georgian

učas	nino	uq'vars	da	momivida	xmebi
Ucha.DAT	Nino	loves	and	came.to.me	rumors
[rom zuras		rusudani	~~uq'vars~~]		
COMP Zura.DAT		Rusudan	loves		

'Ucha loves Nino, and rumors reached me that Zura (loves) Rusudan.'

c. Svan

učas	nino	χalæt'	i	amqæd	helær
Ucha.DAT	Nino	loves	and	came.to.me	rumors
[ere: zuras		ek'a	~~χalæt~~]		
COMP Zura.DAT		Eka	loves		

'Ucha loves Ia, and rumors reached me that Zura (loves) Eka.'

d. Russian

Borʲa	lʲubit	Marinu,	no	do	menja	došli
Borya	loves	Marina.ACC	but	to	I.GEN	reached
sluxi,	[što	sama Marina		~~lʲubit~~	Rajnera]	
rumors	COMP	self Marina		loves	Rainer.ACC	

'Borya loves Marina, but rumors reached me that Marina herself (loves) Rainer.'

[52] If the proposal of Arsenijević (2009) is on the right track, complex DPs are actually a variety of relative clauses. However, given that any relative clauses are islands in these languages, the correct analysis of complex DPs is tangential to my present purposes.

e. Polish

Mój	dobry	kolega	z	równoległej		klasy	w	którym
my	good	friend	from	parallel		class	in	which
jestem	zakochana		od	pół	roku	i	krążą	
am	in.love		from	half	year	and	circulate	
plotki,		[że	on	we	mnie	też	~~jest zakochany~~]	
rumors		that	he	in	me	too	is	in.love

'My good comrade from a parallel class, whom I've been in love with for half a year, and rumors circulate that he (is in love) with me too.'[53]

f. Spanish[54]

Juan	ama	a	Maria	y	circulan			
Juan	loves	ACC	Mary	and	circulate			
rumores		de	[que	Maria	~~ama~~	a	Juan	tambien]
rumors		of	that	Maria	loves	ACC	Juan	too

'Juan loves Maria and rumors are circulating that Mary (loves) Juan too.'

g. Hebrew

ran	nosea	le-afula	ve=ješ	šmuot
Ran	travels	to-Afula	and=exist	rumors
[še=gal		~~nosea~~ le-arad]		
COMP=Gal		travels to-Arad		

'Ran is travelling to Afula and there are rumors that Gal (is travelling) to Arad.'

h. Romanian

Ion	o	iubeşte	pe	Maria	şi	circulă	
Ion	F.CL.ACC	loves.3SG	ACC	Maria	and	circulate	
zvonuri	[că	şi	Maria	~~îl iubeşte~~	pe	Ion]	
rumors	COMP	and	Maria	M.CL.ACC	loves	ACC	Ion

'Ion loves Maria and rumors are circulating that Mary (loves) Ion too.'

[53] https://www.wattpad.com/239063254-tajemnicza-polana-zawieszone-rozdzia%C5%82-iv Acessed on June 17, 2018.

[54] Here and below, the judgments are from speakers of European Spanish.

i. Subject Island (Russian)

?[što	jožiki	nenavidʲat	belok]	ogorčaet	menʲa
COMP	hedgehogs	hate	squirrels.ACC	upsets	I.ACC
a	[što	dikobrazy	~~nenavidʲat~~	burundukov]	
CTR	COMP	porcupines	hate	chipmunks.ACC	
šokiruet		mojevo	druga		
shocks		my.ACC	friend.ACC		

'(The fact) that hedgehogs hate squirrels upsets me, and (the fact) that porcupines (hate) chipmunks shocks my friend.'

Moreover, given that in Georgian, Svan, and Ossetic movement is impossible out of any finite clause, as we have seen in Section 3.4.3, any gapping site in an embedded clause is automatically embedded in an island in these languages. Embedded gapping, however, is possible in these languages, as we have already seen in (114) for Georgian and Svan, and as (115) shows for Ossetic.

(115) a. Digor Ossetic

zawur	mɐdinɐn		dedengutɐ	ravardta	ɐma=mɐmɐ
Zaur	Madina.DAT		flowers	gave	and=ALL.1SG
wotɐ	kɐsuj	[cuma	χetɐg=ba	agundɐn	k'anfettɐ
so	seems	COMP	Khetag=CTR	Agunda.DAT	candy
~~ravardta]~~					
gave					

'Zaur gave Madina flowers, and it seems to me that Khetag (gave) Agunda candy.'

b. Iron Ossetic

žawər	mɐdinɐjɐn		didinʤətɐ	radta	ɐmɐ=mɐm
Zaur	Madina.DAT		flowers	gave	and=ALL.1SG
aftɐ	kɐšə	[səma	χetɐg=ta	agundɐjɐn	k'afettɐ
so	seems	COMP	Khetag=CTR	Agunda.DAT	candy
~~radta]~~					
gave					

'Zaur gave Madina flowers, and it seems to me that Khetag (gave) Agunda candy.'

The same point can be made for relative clauses, which are islands in Russian (116).

(116) Russian

ja	iš:u	tovo	[RCkto	risujet		slonov]
I	seek	that.ACC	who.NOM	draws		elephants
a	vas^{j}a	(iš:et) tovo	[RCkto	~~risujet~~		jedinorogov]
CTR	Vasya	seeks that.ACC	who.NOM	draws		unicorns

'I am looking for somebody who draws elephants, and Vasya (is looking) for somebody who draws unicorns.'

Of course, in a given language, or even in a given type of island, gapping can be impossible to embed for independent reasons – for instance, the processing cost of a gapping site in an island might be too high.

4.5.2 Gapping in the absence of coordination

An additional prediction of the approach developed here concerns the connection between gapping and coordination. If the licensing feature is not tied to &^{0} in a given language, we predict gapping to be able to occur in the absence of coordination (117a). In this picture, all that is needed for gapping to proceed[55] is to have an antecedent for the E-feature to check the identity requirement against.

This again is borne out, as the sentences in (117 b-m) illustrate. In the Russian sentence in (117b), the gapping site is embedded in the temporal adjunct clause 'after Petya (painted) the ceiling'; in (117c), it is embedded in a reason adjunct, in (117d),

[55] Of course, a given type of embedded clause in a given language with low licensing of gapping may still fail to host gaps for independent reasons.

in a conditional, and in (117e), in a time clause. In the Digor Ossetic sentence in (117f) it is embedded in the (correlative) conditional 'if Madina (goes) to Dzinagha', and in the Georgian sentence in (117g), in a reason clause. Hebrew, Polish, and Svan sentences in (117 i-m) illustrate the same point.

(117) a. [Matrix clause [$_{CP}$ Top^0[E] … ~~V~~ …]]
Antecedent *Gapping site*

Russian

b. vasja pokrasil steny [posle togo kak petya ~~pokrasil~~
Vasya painted walls after that as Petya painted
potolok]
ceiling
'Vasya painted the walls after Petya (painted) the ceiling.'

c. kolʲa ujexal v abissiniju tolʲko potomu što
Kolya left.for in Abyssinia only because
anʲa ~~ujexala~~ v pariž
Anya left.for in Paris
'Kolya left for Abyssinia only because Anya (left) for Paris.'

d. kolʲa pojedet v abissiniju tolʲko jesli
Kolya will.go.to in Abyssinia only if
anʲa ~~pojedet~~ v pariž
Anya will.go.to in Paris
'Kolya will go to Abyssinia only if Anya (will go) to Paris.'

e. Vasʲa vsegdapʲjot samogon [kogda ostalʲnyje
Vasya alwaysdrinks moonshine.ACC when others
~~pʲjut~~ vodku]
drink vodka.ACC
'Vasya always drinks moonshine when others (drink) vodka.'

f. Digor Ossetic
soslan čikola-mɐ randɐ wodzɐj [kɐd mɐdinɐ=ba
Soslan Chikola-ALL away be.FUT.3SG if Madina=CTR
ʤinaʁa-mɐ] jewɐd
Dzinagha-ALL then
'Soslan will go to Chikola if Madina ~~will go~~ to Dzinagha.'

g. Georgian

?ias	sʤinavs	iaťak'=ze	imiť om	rom
Ia.DAT	sleeps	floor=on	because	
misi	švils	~~sʤinavs~~	sacol=ze	
her	child.DAT	sleeps	bed=on	

'Ia is sleeping on the floor, because her child is sleeping on the bed.'

h. Hebrew

?tal	nosea	le-afula	k-še	gal	~~nosea/nosaat~~	le-arad
Tal	travels	to-Afula	when	Gal	travels.M/F	to-Arad

'Tal travels to Afula when Gal (travels) to Arad.'

i.

?tal	nosea	le-afula	rak	im	gal
Tal	travels	to-Afula	only	if	Gal
~~nosea/nosaat~~		le-arad			
travels.M/F		to-Arad			

'Tal travels to Afula when Gal (travels) to Arad.'

Polish

j.

?Jan	zawsze	pije	wódkę	[kiedy	Piotr	~~pije~~	samogon]
Jan	always	drinks	vodka	when	Piotr	drinks	moonshine

'Jan always drinks vodka when Piotr (drinks) moonshine.'

k.

Jan	widzi	problem	tam,	gdzie	Piotr	możliwość
Jan	sees	problem	there	where	Piotr	opportunity

'Jan sees a problem where Piotr (sees) an opportunity.'

Svan

l.

manana	anq'e	k'ubdæ:rs	šomwæj	
Manana.NOM	bakes	kubdar.DAT	when.REL	
nino	~~anq'e~~	diærs		
Nino.NOM	bakes	bread.DAT		

'Manana bakes a kubdar when Nino (bakes) bread.'

m.

?mananas	xewže	p'ol=ži	eʤɣa	
Manana.DAT	sleeps	floor=on	COR	
e:re	miča	bepšws	~~xewže~~	laq'wra=ži
COMP	her	child.DAT	sleeps	bed=on

'Manana sleeps on the floor, because her child (sleeps) on the bed.'

Similar facts are reported for Spanish in Jung (2016). In (118 a-b) this is illustrated for correlatives, and in (118c), for a conditional.

(118) Spanish Jung (2016: 101)

a. Yo encontraba problemas allí donde
I found problems there where
Pedro facilidades
Pedro easiness
'I found problems where Pedro (found) easiness.'

b. Yo llegue a mi casa
I arrived to my home
antes que Pedro a la oficina
before that Pedro to the office
'I came home before Pedro (came) to his office'

c. Si yo merezco un aplauso,
if I deserve a applause
tú una ovación.
you an ovation
'If I deserve a round of applause, you (deserve) an ovation'

In Romanian, gapping without coordination is rather restricted, but still sometimes possible (119).

(119) Romanian

??Ion vede o problemă unde Jim ~~vede~~ o oportunitate
Ion sees ACC.F problem where Jim sees ACC.F opportunity
'Ion sees a problem where Jim sees an opportunity.'

Moreover, in Russian[56], the antecedent of a gap may be situated in the fronted embedded clause (120), while the gap itself is in the matrix clause.

[56] Currently, I do not have parallel data from other languages of this type.

(120) ?[kogda Vasʲa pʲjot vodku] ostal'nyje vsegda ~~pʲjut~~ vino
when Vasya drinks vodka others always drink wine
'When Vasya drinks vodka, others always (drink) wine.'

4.5.3 The antecedent and the gap embedded under separate matrix verbs

An additional result of this approach is that the antecedent and the gap are predicted to be **embeddable under separate coordinated matrix verbs** in languages with a low locus of the E-feature, as schematized in (121a). Indeed, given that the E feature is situated within the embedded clause that hosts the gap, the agreement relationship is local, while checking the semantic condition necessary for ellipsis to be licensed does not need to be clause-bound. In (121 b-c) the antecedent, 'that Rezo/Vasya bathed an elephant' and the gapped clause, 'that Rezo/Petya (bathed) a hippo', are hosted in different complement clauses. (121 e) illustrates the same phenomenon for Iron Ossetic, note that embedded clauses there are finite, unlike their English translations. Unfortunately, I do not have the respective data for Svan.

(121) a. [Matrix$_1$ [$_{CP}$ Antecedent]] & [Matrix$_2$ [$_{CP}$ Top^0[E] … ~~V~~ …]]
Gapping site

b. me darc'mnebuli var [rom rezo-m sp'ilo
I sure am COMP Rezo-ERG elephant
abanava] čemi coli=k'i amt'k'icebs
bathed my wife=CTR claims
[rom guram-ma behemot'i]
COMP Guram-ERG hippo
'I am sure that Rezo washed an elephant and my wife claims that Guram (washed) a hippo.' Georgian

c. ja uveren [što vasʲa pomyl slona]
I sure COMP Vasya washed elephant.ACC
a moja žena utveržd ajet [što petʲa begemota]
CTR my wife claims COMP Petya hippo.ACC
'I am sure that Vasya washed an elephant and my wife claims that Petya (washed) a hippo.' Russian

d. [ciq'v-eb-s rom edʒavreben dʒaɣr-eb-i]
squirrel-PL-DAT that they.hate hedgehog-PL-NOM
aɣizianebs davit-s
annoys David-DAT
rezo-s k'i ak'virvebs is rom dzaɣl-eb-s
Rezo-DAT surprises it.NOM that dog-PL-DAT
~~edʒavreben~~ k'at'-eb-i
they.hate cat-PL-NOM
'That squirrels hate hedgehogs, annoys David, and that dogs (hate) cats, surprises Rezo.' Georgian

e. Iron Ossetic
alan ɐχsa ɐvɐrə [sɐmɐj jɐ=čəzgɐn mašinɐ
Alan money saves COMP his=daughter.DAT car
balχɐna]
buy.SUB.FUT.3SG
ažɐmɐt=ta kredit rajšta [sɐmɐj jɐ=fərtɐn qug
Azamat=CTR loan took COMP his=son.DAT cow
~~balχɐna~~]
buy.SUB.FUT.3SG
'Alan is saving money to buy a car for his daughter, and Azamat took a loan (to buy) a cow for his daughter.'

d. Polish
?Myślę, że Jan wskaże kandydaturę Marii,
I.think COMP Jan will.nominate candidacy Maria.GEN
a mój kolega przekonuje,
CTR my colleague claims
że Marta wskaże kandydaturę Piotra
COMP Marta will.nominate candidacy Piotr.GEN
'I think that Jan will nominate Maria, and my colleague claims that Marta (will nominate) Piotr.'

Spanish

e. ?Yo sé [qué libro compró María],
I know which book bought María
y Pedro sabe [qué libro ~~compró~~ Juan]
and Pedro knows which book bought Juan
'I know which book María bought, and Pedro knows which book Juan bought' Saab (2009).

f. Luis aseguró que Juan compró un libro,
Luis assured that Juan bought a book
y yo creo que María ~~compró~~ una revista
and I think that María bought a magazine
'Luis assured that John bought a book, and I think that Mary bought a magazine' Jung (2016)

g. Romanian
Cred că [Maria l-a nominalizat pe Ion]
I.think COMP Mary ACC.M.CL nominated ACC Ion
şi colegul meu susţine
and colleague.DEF mine claims
că [Peter ~~a nominalizat-o~~ pe Martha]
COMP [Peter ~~has nominated-F.CL.~~ACC ACC Martha]
'I think that [Mary nominated John] and my colleague claims that [Peter ~~nominated~~ Martha].'

4.5.4 Directionality of ellipsis

As we have seen in Section 4.4.2, the current analysis predicts that in languages with a high placement of the E-feature, only forward gapping can be possible. On the other hand, in languages with a low placement of the E-feature, nothing under the current account rules out languages where gapping would proceed in either direction.

This prediction is borne out in a certain sense. In some languages with a low locus of the E-feature a backward deletion process is attested that at least closely resembles gapping (and, as I will argue below, sometimes indeed is gapping). Among the languages of my sample, this phenomenon is attested in Ossetic, Georgian, Polish,

and Svan. However, Russian[57], Spanish, Romanian, and Hebrew disallow backward gapping (or, to stay agnostic about an analysis, backward verb deletion).

The sentences in (122) illustrate this phenomenon for Georgian, Svan, and Iron Ossetic. Variants of sentences in (122) with forward gapping are all grammatical as well.

(122) a. Georgian
me ~~viq'idi~~ xils šen=k'i iq'idi ɣwinos
I I.will.buy fruit you.SG=CTR you.will.buy wine
'I (will buy) fruit and you will buy wine.'

b. Svan
mi ~~xwiq'di~~ xils si xiq'di ʁwinæls
I I.will.buy fruit you.SG you.will.buy wine
'I (will buy) fruit and you will buy wine.'

Iron Ossetic
c. ɐž fəččən ~~baχordton~~ maχar=ta wɛlibɐχ
I meat.pie eat.PST.1SG Maxar=CTR cheese.pie
baχordta
eat.PST.3SG
'I (ate) a meat pie, and Maxar ate a cheese pie.'

d. də nɐ=mad-ə ~~fen-ɐj~~
you our=mother-ACC see-SUBJ.FUT.2SG
ɐž=ta nɐ=fəd-ə fen-on
I=CTR our=father-ACC see-SUBJ.FUT.1SG
'You (are to see) our mother, and I am to see our father.'

A question arises of why low licensing languages fail to show uniform behavior in this respect. One possibility is that the current analysis might be overpredicting.

[57] There exist speakers of Russian that marginally allow backwards gapping. This is expected if the current analysis of gapping is on the right track and directionality of gapping is regulated by some independent process that may work differently for different speakers.

Backward gapping might never exist (for admittedly unclear reasons) and what looks like backward gapping is achieved by some other mechanism(s) than forward gapping. These mechanisms may or may not be available in given languages.

Another possibility is that some separate mechanisms are responsible for blocking backward ellipsis in low licensing languages. I will return to this possibility in Section 4.10.1, while here I will provide some arguments in favor of treating "backward gapping" in Georgian and Ossetic as real instances of gapping.

If one pursues the idea that backward gapping is never possible, a natural conjecture is that in the languages where backward verb deletion occurs, it is actually always an instance of Right Node Raising[58]. Citko (2018) makes this claim for Polish.

As we have already seen in Section 2.2.4, RNR is a class of phenomena that at least superficially resemble backwards gapping (123). Analyses of RNR proposed in the literature include string-based deletion, Hartmann (2000), multidominance (Wilder 1999; 2008; McCawley (1982); Citko (2011a,b; 2018); Bachrach & Katzir (2007; 2009); Gračanin-Yüksek (2007; 2013); Grosz (2015), a.o.), rightward ATB movement of the shared material, Sabbagh (2007), or a combination of several of these approaches, Barros & Vicente (2011).

(123) a. Joss walked suddenly into _ , and Maria stormed quickly out of _, the dean's office. Sabbagh (2007)

[58] In particular, the consensus is that the semblance of backwards gapping in embedded clauses in German and Dutch (i) is actually due to RNR, see e.g. Vanden Wyngaerd (2007) and Zwart (2011).

(i) Dutch

dat	Jan	een	novelle	~~las~~	en	Piet	een	roman	las
COMP	Jan	a	short.story	read	and	Piet	a	novel	read

'that Jan read a short story, and Piet, a novel.' Vanden Wyngaerd (2007)

b. Josh is likely to accept _, and Jamie is likely to reject _,
the controversial amendment. Sabbagh (2007)

Given the wide variety of proposed analyses of RNR, and somewhat different prediction that they make, it is rather hard to argue that a specific instance of backward deletion is not RNR. What is possible is to discuss whether a specific analysis can account for a specific variety of backward deletion. I will only address here two such analyses: string-based PF deletion and one positing a multidominant structure.

For string-based PF deletion accounts of RNR, it is natural to assume that the deleted material and its antecedent exhibit full phonological matching. In this case, gapping-like backward deletion where the antecedent and the missing verb do not match in φ-features, and, consequently, in phonological form, cannot constitute RNR in this sense. This is true for all the sentences in (122).

On the other hand, the multidominance-based analysis of Citko (2018) of RNR in Polish countenances φ-feature mismatches under RNR[59]. Her analysis, however, disallows polarity mismatches between the antecedent and the deletion site. Polarity mismatches are indeed impossible in the case of backward deletion in Polish (124a), while they are possible for forward gapping (124b). This allows Citko to conclude that in Polish, backward deletion is a multidominant structure she posits for RNR.

[59] In particular, the mismatch in honorific marking in Korean, used by Jung (2016) as a crucial piece of evidence in favor of a gapping analysis of backward verb deletion in Korean, can be accounted for under Citko's analysis. Likewise, φ-feature mismatches under backward gapping/RNR in Turkish, whose possibility is reported by Ince (2009) are amenable to such a treatment.

(124) Polish, Citko (2018: 9)

a. *Jan nikogo a Piotr kogoś zaprosił
Jan nobody CTR Peter someone invited
'Jan (invited) no one, and Peter invited someone.' (intended)

b. Jan zaprosił kogoś a Piotr nikogo
Jan invited someone CTR Peter nobody
'Jan invited someone, and Peter no one.'

On the other hand, in Ossetic and Georgian[60], polarity mismatches are possible to some extent under backward gapping (125).

(125) a. Iron Ossetic

?šošlan nikɐmɐj (fɐlɐ) χetɐg=ta alan-ɐj tɐršə
soslan nobody.ABL but Khetag=CTR Alan.ABL fears
'Soslan (fears) no one, and Khetag fears Alan.'

b. Georgian

?ia arapers manana k'i xač'ap'urs
Ia nothing.DAT Manana CTR khachapuri.DAT
amzadebs
cooks
'Ia (is cooking) nothing, and Manana is cooking a khachapuri.'

It is not clear, however, whether Citko's analysis will rule out these mismatches, given that the clause structures in Polish, on one hand, and Ossetic in Georgian, on the other hand, are not necessarily identical.

Three further arguments can be marshalled against treating backward verb deletion in Ossetic and Georgian as Right Node Raising. None of these arguments is fully conclusive. However, together they lend some credibility to the idea that

[60] Unfortunately, I do not have the respective data for Svan.

backward verb deletion in Ossetic and Georgian may be a real instance of backward gapping. I will present them here one by one.

First, one property of Right Node Raising that is shared by all extant accounts is that the missing constituent under RNR must be rightmost in its conjunct. This property is usually called the Right Edge Condition in the literature. However, this condition can be checked only if the word order is rigid in the clause where deletion occurred. Now, backward deletion is possible in Ossetic (126), and, as we have already seen in (122 a-b), in Georgian and Svan, when the verb in the second conjunct is non-final.

(126) Iron Ossetic
šošlan didinʤətɐ ~~ratta~~ mɐdinɐjɐn (fɐlɐ) χetɐg=ta
Soslan flowers gave Madian.DAT but Khetag=CTR
činəg ratta fatimɐjɐn
book gave Fatima.DAT
'Soslan (gave) flowers to Madina, but Khetag gave a book to Fatima.'

This might indicate that the Right Edge Restriction is not satisfied in these cases, under the assumption that the word orders in the antecedent and the gapping site must be identical. Unfortunately, it is impossible to verify this assumption in this case.

Second, words can be split under RNR, but not under gapping, as illustrated for English in (127). However, the grammaticality of examples of this type depends on the ability of stranded morphemes to occur in isolation, and not only on the syntax of ellipsis *per se*.

(127) a. Carly is over- and Will underpaid. Johnson (2014)

b. *Carly is overpaid, and Will under-.

Counterparts of (127a) are impossible in the languages under discussion: verb prefixes cannot be shared between the conjuncts, as illustrated in (128). Here, I gloss the (directional) preverbs *a-*, *ɐrba-* (Iron Ossetic), *mi-*, and *ga-* (Georgian) and as 'hither', 'thither', and 'out'.

(128) a. Iron Ossetic

*šošlan	a-	mɐdinɐ=ta	ɐrba-sədi
Soslan	thither-	Madina=CTR	hither-came

'Soslan left and Madina arrived.' (intended)

b. Georgian[61]

*ia	mo-	rezo	k'i	ga-dis
Ia	hither-	Rezo	CTR	out-goes

'Ia is coming, and Rezo is leaving.' (intended)

The third, and the most weighty, argument against treating backward verb deletion in Georgian and Ossetic as RNR is that RNR sentences that involve DPs are ungrammatical in these languages[62]. In (129a), the intended shared DP is *k'randaš-ɐj* pencil-ABL 'with pencil'. In the Georgian sentences in (129 b-c), I use such shared DPs that do not trigger verb agreement. Only subjects, direct objects, and indirect objects

[61] Georgian allows this type of construction for one pair of preverbs, *mi-* 'hither' and *mo-* 'thither'.

(i) Georgian

gia	mi-~~dis~~	ia=k'i	mo-dis
Gia	hither-goes	Ia=CTR	thither-goes

'Gia is coming and Ia is leaving.'

I owe this observation to Alice Harris, p.c.

[62] In Turkish, on the other hand, RNR is possible with argument DPs, Ince (2009).

trigger agreement in Georgian, Harris (1981). For agreeing DPs, what looks like RNR is to some extent possible, but it might be the case of null arguments in one of the conjuncts.

(129) a. Iron Ossetic
*alan fəššə mɐdinɐ=ta nəv kɐnə k'randašɐj
Alan writes Madina=CTR picture makes pencil.INS
'Alan is writing, and Madina is drawing, with pencil.' (intended)

Georgian

b. *giorgi cxovrobs daviti k'i čamovida tbilis=ši
Giorgi lives David CTR arrived Tbilisi=LOC
'Giorgi lives, and David arrived, in Tbilisi.' (intended)

c. *manana c'ers nino k'i xat'avs pankrit
Manana writes Nino CTR draws pencil.INS
'Manana is writing, and Nino is drawing, with pencil.' (intended)

In this respect Ossetic and Georgian differ from Persian, where there are reasons to assume that what looks like backward gapping is actually RNR. As Farudi (2013) claims, RNR is independently attested in Persian, and φ-feature mismatches are dispreferred under the backward gapping in this language.

To conclude, there are reasons to think that Ossetic and Georgian indeed exhibit backward gapping. This lends credence to the idea that there must exist a separate mechanism that blocks backward gapping in those low licensing languages that do not allow it. We will resume this discussion in Section 3.10.1.

4.5.5 Summary

Let us summarize the predictions our system makes for various types of languages. The relevant parameters are the locus of the E-feature, the size of the left periphery in the hosting clause, and the ability of the material to be deleted to move out of an embedded clause. Table 3 presents the resulting typology. Table 4 gives a list of languages that realize each of the resulting types.

Table 3. Parameters of variation and predictions

Height of E-feature	Size of left periphery	Movement out of embedded clause	Gapping in embedded non-islands	Gapping in islands	Type of Language
High ($\&^0$)	Irrelevant	Impossible	*	*	I
High ($\&^0$)	Large	Possible	ok	*	I a
Low (Top^0)	Large	Irrelevant	ok	ok	II

Table 4. Languages representing the types.

Type I	English; Dutch; German; Serbian; Slovenian.
Type Ia	Persian as described by Farudi (2013); Complementizerless clauses in English and Dutch
Type II	Russian; Georgian; Digor Ossetic; Iron Ossetic; Polish; Spanish, Hebrew

For some of the languages that exhibit embedded gapping of some sort, more data are necessary to assign them to one of the classes. This concerns Hungarian, Svan, Hindi (for speakers who allow embedded gapping), Eastern Armenian, Finnish, and Albanian.

Another, completely independent, parameter of variation is the extent to which polarity, tense, aspect, and modality should coincide between the antecedent and the gap. What controls the effects of this type is the size of the deleted constituent, Merchant (2013), to which we now turn.

4.6. Size of the deleted constituent

The size of deleted constituent varies across languages (and sometimes across analyses of a single language). While for in English, it is typically assumed that it is a vP that gets deleted under gapping (see e.g. Gengel (2013: 164)) Citko (2015; 2018) argued that in Polish gapping, the deleted constituent is a TP. İnce (2009) argued that in Turkish, it is a CP. Direct evidence for the size of the deleted constituent in a given language is usually hard to come by.

An immediate estimate on the minimal possible size of the deleted constituent follows from the fact that the antecedent and the gapping site match in voice in all known cases, as was discussed in Section 3.2.34. Following the logic of Merchant (2013), this implies that the projection determining the voice of the clause is necessarily within the deleted constituent, i.e. the vP or the VoiceP, depending on one's theoretical persuasion. This estimate on the minimal size is valid for all

languages discussed so far. In specific languages, the deleted constituent can be much larger. Here, I will illustrate this point for Russian.

Some information about the size of the deleted constituent in Russian gapping can be gleaned from the behavior of the clitic irrealis marker =*by*, Timberlake (2004: 95). Sentences with =*by* in the gapping site are ungrammatical (130a). As controls, I provide the grammatical counterpart without =*by* in the second conjunct (130b), and the relatively acceptable counterpart without gapping (130c), where =*by* is present in both conjuncts. Additionally, =*by* can be doubled in the absence of coordination, when it is obvious that only one ModP is present in the clause (130c).

(130) Russian

a. *vasʲa=**by** vypil vodki a petʲa=**by** ~~vypil~~ konʲjaku
Vasya=IRR drank vodka CTR Petya=IRR drank brandy
'Vasya would have had some vodka, and Petya some brandy.'
(intended)

b. vasʲa=**by** vypil vodki a petʲa ~~vypil~~ konʲjaku
Vasya=IRR drank vodka CTR Petya= drank brandy
'Vasya would have had some vodka, and Petya some brandy.'

c. vasʲa=**by** vypil vodki a petʲa=**by** vypil konʲjaku
Vasya=IRR drank vodka CTR Petya=IRR drank brandy
Idem

d. ja=**by** ob etom napisal=**by**
I=IRR about this wrote=IRR
'I would have written about this.'

To interpret these facts, assume that the findings about the functional sequence above the vP are *grosso modo* applicable to Russian. That is to say, the order of the functional projections must be as shown in (131), see e.g. Rizzi & Cinque (2016) and references

there. I am abstracting away from the possible finer structure of the ModP and AspP, and do not include the PolP and NegP in the picture.

(131) [TP [ModP [AspP vP] …]

Under these assumptions, it is natural to assume that *by* is base-generated in the ModP. As we have seen in the preceding section, the TP is present in both conjuncts in Russian. Therefore, we can conclude, under these assumptions, that the deleted constituent is at least the size of the ModP.

Furthermore, as we have already seen in Section 3.2.3, the antecedent and the ellipsis site must match in modality in Russian. The finite verb in irrealis clauses is morphologically identical to the past tense verb. However, a past tense antecedent does not license deletion in an irrealis clause. In (132), the verb 'to win' in the antecedent stands in the past indicative, whereas the complement clause is in the irrealis mood, as indicated by the irrealis complementizer *štoby*. Despite the perfect phonological match between the two verbs, gapping is not licensed in this situation.

(132) Russian

*etrurija	včera	vyigrala	u	finikii	i	ja
Etruria	yesterday	win.PST.F	at	Phoenicia	and	I
xoču štoby	gallija	~~vyigrala~~	u	likii		
I.want COMP	Gallia	win.IRR.F	u	likii		

'Etruria yesterday defeated Phoenicia and I want Gallia to defeat Lycia.'

Accordingly, the deleted constituent must be at least the size of the ModP under embedded gapping as well.

4.7. Size of conjuncts under gapping

In this section, I argue that under gapping in conjunctions, the size of conjunts can be fairly large, that is the conjuncts may be TPs or even CPs. This is the case both in language that allow embedded clauses and in those that do not. Some of these arguments have been already advanced in the earlier literature, but they have not been applied to Russian, Ossetic, and Georgian. Furthermore, a novel argument concerning the size of conjuncts under gapping in V2 languages is proposed here.

Strictly speaking, the question about the size of the conjuncts is orthogonal to our theoretical discussion: my proposal can in principle accommodate any size of conjuncts. However, a reasoning based on acquisition shows that it is natural to expect that a language that allows embedded gapping will exhibit a relatively large size of conjunct in usual gapping.

Namely, imagine a language learner that needs to figure out that embedded gaps are possible in their language. There is little direct positive evidence for embedded gapping, because such utterances are relatively rare. Acquisition of such a construction would be much easier, if the structures of embedded clauses and matrix conjuncts would be similar. Now, embedded gapping necessarily involves a large size of the left periphery in the hosting clause. So, acquisition of embedded gapping would be easier if in languages that allow embedded gapping, the conjuncts in matrix gapping would be also large, at least sometimes.

4.7.1 Methods of estimating the size of conjuncts

Two types of argument have been used in the literature to estimate the size of conjuncts under gapping.

To estimate the maximal possible size of conjuncts, the literature since Siegel (1984) has looked at the scope of scope-taking elements, such as negative markers, that are ostensibly situated in one of the conjuncts. Should such an element take scope over both conjuncts, the conclusion will be that it is situated above the conjunction in the syntax. A practical drawback of this method is that reliable scope judgments are typically very hard to elicit, especially from non-linguists.

To estimate the minimal size of conjuncts, one can investigate which elements can be hosted in each of the conjuncts. If the location of a given item in the structure is independently known (say, it is known that wh-movement in the language under discussion targets Spec CP), the conclusion is that the conjuncts are large enough to include the respective projection.

Applied to a given language, these tests can yield contradictory results. To accommodate the premise that scope-taking properties must be directly related to the position of the scope-taking element in syntax, such contradictions have been interpreted in the literature as evidence that the size of conjuncts under gapping may vary in a single language. This has been proposed for German in Repp (2009); English in Potter et al (2017); for French in Dagnac (2016); for Spanish in Centeno (2011) and Jung (2016); and for Korean in Jung (2016).

I will now first discuss the application of these tests to (presumably better studied) languages with high licensing of gapping, and then proceed to languages with low licensing of gapping.

4.7.2 Size of conjuncts in languages with high licensing of gapping

Since Siegel (1984), it has been standard to appeal to the scope of modals and of negation when arguing for a small size of conjuncts under gapping in English. Sentences such as in (133a) are claimed to be ambiguous in English, with readings shown in (133b), the wide scope of the modal, and in (133c), the narrow scope of the modal. The existence of the wide scope readings has been taken as evidence for the small size of conjuncts under gapping.

(133) a. Ward can't eat caviar and Sue, beans.

b. It is not possible (or desirable) for Ward to eat caviar and for Sue (simultaneously) to eat (merely) beans.

c. Ward can't eat caviar, and Sue can't eat beans.

However, as Hudson (1976) and Gengel (2013) noticed, some evidence exists that conjuncts in English can be of fairly large size. The evidence comes from the possibility of gapping in conjoined wh-questions[63] (134a) and clauses with a

[63] Not all native speakers of English allow gapping in coordinated wh-questions. López & Winkler (2002) propose that in the second conjuncts of sentences of this type, wh-phrases are exceptionally hosted in the left periphery of the vP rather than in the CP. As Repp (2009) notes, their arguments do not go through for *why*, which is arguably base generated in Spec CP, see e.g. Shlonsky & Soare (2011). However, gapping is possible in English why-questions for some speakers (i).

topicalized DP (134b), although such examples are judged marginal to ungrammatical by many speakers. In both cases, the fronted material must be sufficiently high in the left periphery, and accordingly, both conjuncts must be the size of a CP.

(134) a. What did John give Mary and what ~~did John give~~ Sue?

b. In the room went Mary, and in the kitchen ~~went~~ John.

As has been extensively discussed in the literature, see e.g. Johnson (2009) and Potter et al (2017), the size of conjuncts under gapping affects the scope of modals and negation. Namely, the small size of conjuncts has been taken to be the reason of a phenomenon discovered by Siegel (1984) – in English, modals with negation have high scope under gapping. To illustrate this with an example, (135) only means that John can't simultaneously give Moby Dick to Mary and *The Nantucket Herald* to Sue. It does not rule out scenarios where John gives *Moby Dick* to Mary and *To Kill a Mockingbird* to Sue, or *The Alabama Daily* to Mary and *The Nantucket Herald* to Sue.

(135) John can't give *Moby Dick* to Mary and *The Nantucket Herald* to Sue.

Now, a prediction of the standard account is that the wide scope reading for modals and negation must not be available in gapped wh-questions. To the extent that such wh-questions are grammatical at all, this prediction is borne out. For instance, only the narrow scope reading is available in (136).

(i) Why did John go by train and why Mary by car? Repp (2009: 34)

(136) ?Which book can't you give to Mary and which newspaper to John?

To verify this claim, examine possible answers to (136). Answers that presuppose the wide scope of the modal, e.g. "I can't give *Moby Dick* to Mary and, simultaneously, *The Nantucket Herald* to John", are judged infelicitous. On the hand, possible answers for (136) are of the type "I can't give *Moby Dick* or *To kill a Mockingbird* to Mary (no matter what I'm giving to J.); I can't give *The Nantucket Herald* or *The Alabama Daily* to John (no matter what I'm giving to M.), that is, they require the narrow scope of the modal.

The data about gapping with fronted constituents are replicable in other languages as well (137). I restrict myself to the facts about wh-questions, leaving open the possibility that argument scrambling may target lower positions in these languages. Remark that wh-movement is standardly assumed to target SpecCP, see e.g. Vikner (1995) for Swedish.

(137) a. Swedish Teleman et al (1999: 973)

hos	**vem**	arbetar	Sven	och	**hos**	**vem**	~~arbetar~~
with	who	works	Sven	and	with	who	works
Anna?							
Anna							

'With who does Sven work and with who Anna?'

b. Dutch

met	**wie**	spreekt	Jan	en	**met**	**wie**
with	who	speaks	Jan	and	with	who
~~spreekt~~		Saskia?				
speaks		Saskia				

'With whom does Jan speak and with whom Saskia?'

Furthermore, for V2 languages[64] an additional argument can be marshalled in favor of large conjuncts under gapping. Although technical details vary significantly across analyses, the consensus is that in German, Dutch, and the Mainland Scandinavian languages the finite verb occupies C^0 in main clauses, while the preverbal XP is in SpecCP, see e.g. Vikner (1995) and Zwart (2011), at least in sentences where a constituent other than a subject is fronted, as illustrated in (138).

(138) a. Danish Vikner (1995: 39)
[$_{CP}$[Denne bog] [$_C$har] Peter læst
this book has Peter read]
'Peter read this book.'

b. Dutch Zwart (2011: 288)
[$_{CP}$ In 1642 [$_C$heeft] Tasman Nieuw Zeeland
In 1642 has Tasman New Zealand
ontdekt
discovered]
'In 1642, Tasman discovered New Zealand.'

c. Swedish
I dag talade hon i Uddevalla
today spoke she in Uddevalla
'Today she spoke in Uddevalla[65].'

Now, these languages allow gapping with conjuncts where a non-subject XP is fronted (139).

[64] All the Germanic languages I have data about disallow embedded gapping. Accordingly, I conclude that they locate the E-feature on &^{0}.

[65] https://sverigesradio.se/sida/artikel.aspx?programid=125&artikel=3926333, accessed 05.24.2018.

(139) a. Swedish Teleman et al (1999: 973)

med Lena talade Sven och med Nina ~~talade~~ Per
with Lena spoke Sven, and with Nina spoke Per.
'Sven spoke with Lena, and Per, with Nina.'

b. German Konietzko & Winkler (2010: 1441)

Die Buddenbrooks hat Sandy gelesen
the Buddenbrooks has Sandy read
und Den Zauberberg ~~hat~~ Anna ~~gelesen~~
and the Magic.Mountain has Anna read
'Sandy read *the Buddenbrooks*, and Anna, *the Magic Mountain*.'

c. Dutch

Vandaag hebben eekhoorns de rozen ontworteld
today have squirrels the roses uprooted
en gisteren chipmunks de tulpen
and yesterday chipmunks the tulips
'Today, squirrels uprooted the roses, and yesterday, chipmunks the tulips.'

It is natural to assume that the fronted constituent in the second conjunct, *med Nina* 'with Nina' in (139a) and *Den Zauberberg* 'the Magic Mountain' in (139b), moves to SpecCP to maintain the word order parallelism. Accordingly, both conjuncts must be CPs in these cases.

To recapitulate the discussion of this section, even languages with high licensing of gapping, such as English, must allow a fairly large size of conjuncts. The evidence presented here is based on the presence in both conjuncts of elements that must be located high in the clause. A similar conclusion was made in Potter et al (2017) who only examined scope facts in English.

4.7.3 Size of conjuncts in languages with low licensing of gapping

I will first present evidence that languages with low licensing of gapping allow large conjuncts under gapping, and then address a claim made about Russian by Agafonova (2011) that in this language, conjuncts can be small.

In the earlier literature, arguments for the large size of the conjuncts under matrix gapping were advanced for Persian by Farudi (2013); for Hungarian, this has been observed by Kiss (2012: 1030), and for Hindi-Urdu, by Kush (2016). As I will argue below in this section, in the languages of my sample, it is fairly clear that the conjuncts can be at least TPs.

I will use the evidence from the placement of sentential adverbials and some language-specific facts for which the judgments have proved to be quite robust. In all the languages of the sample, the conjuncts under gapping can host sentential adverbials, which cannot attach lower than to a TP. Therefore, the conjuncts in such cases must be at least TPs. Sentential adverbs can be hosted both under forward and backward gapping, so the estimate on the size of conjuncts is valid for both types of gapping. In the sentences in (140), the adverbials 'fortunately' and 'unfortunately' contrast.

(140) Iron Ossetic

a. šošlan zul ɐrbaχašta tamu=ta **qəgagɐn** araq
Soslan bread brought Tamu=CTR unfortunately arak
'Soslan brought bread, and Tamu unfortunately arak.'

b. šošlan zul tamu=ta **qəgagɐn** araq ɐrbaχašta
Soslan bread Tamu=CTR unfortunately arak brought
'Soslan brought bread, and Tamu unfortunately arak.'

c. šošlan **amondɐn** zul ɐrbaχašta tamu=ta **qəgagɐn** araq
Soslan fortunately bread brought Tamu=CTR unfortunately arak[66]
'Soslan fortunately brought bread, and Tamu unfortunately arak.'

Georgian

d. gia-m **sabednierod** ɣvino moiťana
Gia-NOM fortunately wine.NOM s/he.brought
rezo-m=k'i **saubedurod** č'ač'a
Rezo-ERG=CTR unfortunately chacha.NOM
'Fortunately, Gia brought wine, and Rezo, unfortunately, (brought) chacha[67].'

e. rezo-m **saubedurod** č'ač'a
Rezo-ERG unfortunately chacha.NOM
gia-m=k'i **sabednierod** ɣvino moiťana
Gia-NOM=CTR fortunately wine.NOM s/he.brought
'Rezo, unfortunately, (brought) chacha, and Gia, fortunately, brought wine.'

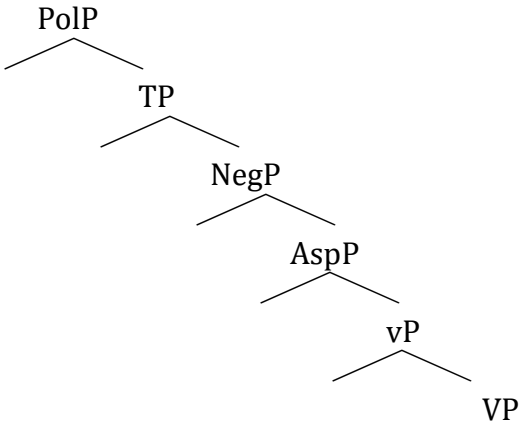
Russian

f. vasʲa **k** **sčastʲju** prinʲos vodku
Vasya to happiness brought vodka
a petʲa **k** **sožaleniju** samogon
CTR Petya to regret moonshine
'Vasya fortunately brought vodka and Petya unfortunately brought moonshine.'

In (better-studied) Russian, more arguments can be marshalled. The standard assumption about the clause structure in Russian is that the TP is dominated by the PolP that is responsible for the polarity of the clause (141), see e.g. Gribanova (2017) and references there. Here, the PolP hosts a silent interpretable operator, whereas the NegP hosts a morphologically overt negative marker that agrees with the operator in the PolP.

[66] Corn moonshine.
[67] Georgian grape vodka.

(141)



As we have already seen in Section 4.2.3.5, many speakers of Russian[68] allow a polarity mismatch between the antecedent and the gap (142).

(142) Russian

a. Antecedent: positive polarity; Gapping site: negative polarity
maša čitajet prusta a vas^{j}a ~~ne čitajet~~ ničevo
Masha reads Proust CTR Vasya NEG reads nothing
'Masha reads Proust, and Vasya nothing.'

b. Antecedent: negative polarity; Gapping site: positive polarity
maša ne čitajet ničevo a vas^{j}a ~~čitajet~~ tol^{j}ko prusta
Masha NEG reads nothing CTR Vasya reads only Proust
'Masha reads nothing, and Vasya only Proust.'

Accordingly, each coordinand in (142) must host a PolP of its own. The fact that gapping is possible in wh-questions, illustrated in (137) above, implies that the coordinands may even be CPs.

In Ossetic, an additional piece of evidence can be marshalled in favor of a large size of conjuncts under gapping: the tense of the gapped verb and the antecedent do

[68] Admittedly, not including the present writer.

not have to match, which shows that the coordinands are at least TPs, (143). The adverbial *rajšom* 'tomorrow' in the gapping site is only compatible with the future or present[69], while the verb in the antecedent is in the past.

(143) Iron Ossetic

žnon	səkolamɐ	sədtɐn	χetɐg=ta	rajšom	čermen-mɐ
yesterday	Chikola.ALL	I.went	Khetag=CTR	tomorrow	Cermen-ALL

'Yesterday I went to Chikola, and Khetag (will go) tomorrow to Chermen.'

Similar facts were reported for Spanish[70] in Juliá (1987). The sentences in (144)are claimed to have the reading in which the conjuncts must have non-matching tenses. They also have the reading where the gapped verb is reconstructed in the past tense, but this other reading is irrelevant for our purposes.

(144) Spanish

a.

Raquel	**enseñaba**	gramática	el	año	pasado
Raquel	taught	grammar	def	last	year
y	Ana	~~**enseña**~~	~~gramática~~	este	año
and	Ana	teaches	grammar	this	year

'Raquel taught grammar last year and Ana (teaches it) this year.'

b.

Ana	se	**fue**	ayer	y	yo	~~me **voy**~~	hoy
Ana	herself	went	yesterday	and	I	myself go	today

'Ana left yesterday and I'm leaving today.

However, a tense mismatch is impossible in Russian[71], as shown in (145).

[69] The present can have future reference in Ossetic.

[70] Saab (2009) and Jung (2016), however, report that tense mismatch is impossible in Spanish gapping.

[71] As Tanya Philippova (p.c.) has observed, this restriction does not hold for comparatives in Russian. The same type of mismatch as in (145) is tolerated in (i). Note that it is impossible to reconstruct the present tense verb in the gapping site because of the adverbial 'yesterday'.

(i) Russian

(145) Russian

*van^{j}a	prygaet	sevodn^{j}a	a	pet^{j}a	~~prygal~~	včera
Vanya	jumps	today	CTR	Petya	jumped	yesterday

'Vanya is jumping today, and Petya (jumped) yesterday.' (intended)

Given the evidence we have seen that conjuncts can be sufficiently large in these languages, the reason why the tenses must be identical admittedly remains unclear. One way is to posit existence of a null T^0 in the gapping site that is anaphoric to the T^0 of the antecedent, as is done in the proposals of Williams (1997); Ackema & Szendrői (2002), Carrera Hernández (2007); and Reeve (2014). However, there is little independent motivation for such a theoretical move: for instance, many of the languages under discussion lack sequence of tense effects – a phenomenon where anaphoric T^0 elements are typically evoked for analysis, see e.g. Ogihara & Sharvit (2012) and references there.

An alternative analysis can run along the following lines. If the conjuncts are smaller than a TP, then they must be dominated by a shared TP, and the tense match will ensue automatically. If, on the other hand, the conjuncts are larger than a TP, the obligatoriness of the tense match indicates that the deleted constituent must be at least the size of a TP. This, following the logic of Merchant (2013), will ensure that the tenses of the conjuncts coincide. The account based on the size of the deleted constituent does not have to appeal to an additional theoretical ingredient lacking

---

van^{j}a	prygaet	sevodn^{j}a	vyše	čem	pet^{j}a	~~prygal~~	včera
Vanya	jumps	today	higher	than	Petya	jumped	yesterday

'Vanya is jumping today higher than Petya (jumped) yesterday.'

independent motivation, an anaphoric T^0. On these grounds, such an account appears preferable.

To provide an additional argument in favor of large conjuncts, in Russian, Ossetic, and Georgian, the gapping and the antecedent may host contrasting temporal adverbials (146), which are 'today' and 'tomorrow' in (146a-c) and (146f), and 'often' and 'rare' in (146e) and (146g).

(146) Iron Ossetic

a. mɐdinɐ **žnon** šfəχta fəččən
Madina yesterday cooked meat.pie
zalinɐ=ta **abon**
Zalina=CTR today
'Madina cooked a meat pie yesterday, and Zalina today.'

b. mɐdinɐ **žnon** zalinɐ=ta **abon** fəččən
Madina yesterday Zalina=CTR today meat.pie
šfəχta
cooked
'Madina cooked a meat pie yesterday, and Zalina today.'

c. mɐdinɐ **žnon** fəččən šfəχta
Madina yesterday meat.pie cooked
zalinɐ=ta **abon** k'abuškaʤən
Zalina=CTR today cabbage.pie
'Madina yesterday cooked a meat pie, and Zalina today a cabbage pie.'

Georgian

d. manana-m **dɣes** gamoacxo xač'ap'ur-i
Manana-ERG today baked khachapuri-NOM
nino-m=k'i **gušin** namcxvar-i
Nino-ERG=CTR yesterday cake-NOM
'Manana baked a khachapuri today and Nino (baked) a cake yesterday.'

e. manana **xširad** uk'ravs p'anino=ze
Manana.NOM often plays piano=on
nino=k'i **išviatad** pleit'a=ze
Nino.NOM=CTR rarely flute=on
'Manana often plays piano, and Nino rarely flute.'

Russian

f. vasja pil vodku **včera**
Vasya drank.M vodka yesterday
a dunja ~~pila~~ konjak **sevodnja**
CTR Dunya drank.F brandy today
'Vasya drank vodka yesterday, and Dunya (drank) brandy today.'

g. vasja **často** pjot vodku a dunja **redko** ~~pjot~~ konjak
Vasya often drinks vodka CTR Dunya rarely drinks brandy
'Vasya often drinks vodka and Dunya rarely (drinks) brandy.'

Assuming that temporal adverbials attach no lower than the TP, Zubizarreta (1987); Sportiche (1988), a.o., this means that the TP is present in both coordinands. However, some evidence exists that in English temporal adverbials attach below the TP, namely, a clefted VP may host a temporal adverbial (147 a-b).

(147) a. Mary promised to give a talk tomorrow and give a talk **tomorrow** she will.

b. What Mary will do is give a talk **tomorrow**

To control for this, I have provided above the data about the sentential adverbials, as parallel sentences with sentential adverbials are ungrammatical.

(148) a. *Mary promised to certainly/fortunately give a talk and certainly/fortunately give a talk she will.

b. *What Mary will do is certainly/fortunately give a talk.

Yet another piece of evidence can be adduced in favor of large conjuncts in Russian. In this language, wh-phrases can be hosted under gapping: *kovo* 'who.GEN' in (149a) and *kogda* 'when' in (149b). It is standardly assumed that wh-movement in

Russian targets Spec CP, Bailyn (2012) or, at the lowest, Spec FocP, with the FocP located above the TP, as was proposed Boskovic (1998), Stepanov (1998), and the ensuing literature. No matter which analysis is correct, the grammaticality of the sentences data in (149) implies that the size of the conjuncts can be larger than the TP.

(149) Russian

a. **kovo** bojatsja nosorogi
who.GEN fear rhinos.NOM
a **kovo** ~~bojatsja~~ slony?
CTR who.GEN fear elephants.NOM
'Who do rhinos fear and who elephants?'

b. **kogda** ty pojedeš v piter
when you go to Petersburg
a **kogda** ~~ty pojedeš~~ v čuxlomu?
CTR when you go to Chukhloma
'When will you go to Petersburg and when to Chukhloma?'

The data in (149) are replicable for Georgian and Ossetic as well, however, less clarity exists as to the locus of wh-phrases in these languages. For Georgian, Borise & Polinsky (2018) claim that wh-phrases stay in situ, in which case data on gapping in wh-questions do not bear upon the discussion.

A question remains as to whether Russian allows smal conjuncts under gapping. Agafonova (2011) has argued in favor of this possibility, but her argument appears to be inconclusive. Her argument is based on the following two observations. First, while binding from the first conjunct into the second is impossible in the absence of gapping, it becomes at least marginally available when the verb is gapped

in the second conjuncts. The judgments in (150) are the ones reported by Agafonova, I fail to see a contrast between (150a) and (150b).

(150) Russian, Agafonova (2011: 48)

a. *ne каждyj malʲčik$_i$ budet igratʲ v kukly
NEG every boy will play.INF in dolls
a jevo$_i$ sestra budet igratʲ v zvʲozdnyje vojny
CTR his sister will play.INF in star wars
'Not every boy$_i$ will play dolls and his$_i$ sister will play Star Wars.'

b. ne каждyj malʲčik$_i$ budet igratʲ v kukly
NEG every boy will play.INF in dolls
a jevo$_i$ sestra ~~budet igratʲ~~ v zvʲozdnyje vojny
CTR his sister will play.INF in star wars
'Not every boy$_i$ will play dolls and his$_i$ sister Star Wars.'

This argument faces two issues: first, the binding pattern in (150b) is still quite unusual. Russian distinguishes reflexive and non-reflexive possessive pronouns, and only the non-reflexive one is possible in (150b). If the finite verb is restored, the sentence with *svoj* 'self's' remains ungrammatical.

(151) ne каждyj malʲčik$_i$ budet igratʲ v kukly
NEG every boy will play.INF in dolls
a jevo$_i$/*svoja sestra ~~budet igratʲ~~
CTR his/self's sister will play.INF
v zvʲozdnyje vojny
in star wars
'Not every boy$_i$ will play dolls and his$_i$ sister Star Wars.'

In a regular binding configuration, only the reflexive possessive would have been possible (152).

(152) Russian
ne каждyj malʲčik ljubit svoju/*jevo sestru
NEG every boy loves self's/his sister.ACC
'Not every boy$_i$ loves his$_i$ sister.'

If what we have in (150b) is a regular syntactic binding configuration, with a DP in, say, Spec TP binding DP in a vP, the ban on reflexive possessive appears puzzling.

The second issue with the argument based on the contrast between (150a) and (150b) is that a pronoun can be co-construed with a quantifier across the clause boundary as (153) shows. There, 'every hunter' in the matrix clause can be co-construed with the possessive 'his' in the embedded finite clause.

(153) Russian
ne каждyj oxotnik$_i$ xočet [štoby jevo$_i$ sobaka
NEG every hunter wants COMP his dog
zaščitila dissertaciju]
defended thesis
'Not every hunter$_i$ wants his$_i$ dog to defend a thesis.'

Accordingly, even if the contrast between (150a) and (150b) exists, it is not clear whether it indicates that the conjuncts in (150b) are small.

To repeat, scope judgments about the scope of modals are extremely hard to obtain in a cross-linguistic study[72]. Nevertheless, the second argument of Agafonova's (2011) is based on the scope of modals.

---

[72] That said, in the judgment of the present writer the modal in (i) may only have the distributed reading.

(i) vasʲa ne=možet jestʲ krasnuju ikru a petʲa kabački
Vasya NEG=can eat.INF red caviar CTR Petya squash.
'Vasya can't eat red caviar and Petya can't eat squash.' Russian

The same holds for Digor Ossetic, (ii), in the judgment of my consultants.

(154) Russian, Agafonova (2011: 48)
odni mogut jestʲ ikru a drugie jestʲ boby
one.PL can eat.INF caviar.ACC CTR others eat.INF beans.ACC
'Some can eat caviar and others eat beans.'

Here, however, the wide reading of the modal seems to be actually a subcase of the narrow reading: if Petya and Vasya can eat their meals independently, it might so happen that they do so simultaneously. Moreover, here we deal with incomplete gapping: only the modal is deleted in the second conjunct of (154). Accordingly, the argument of Agafonova's (2011) in favor of small conjuncts in Russian is inconclusive at best.

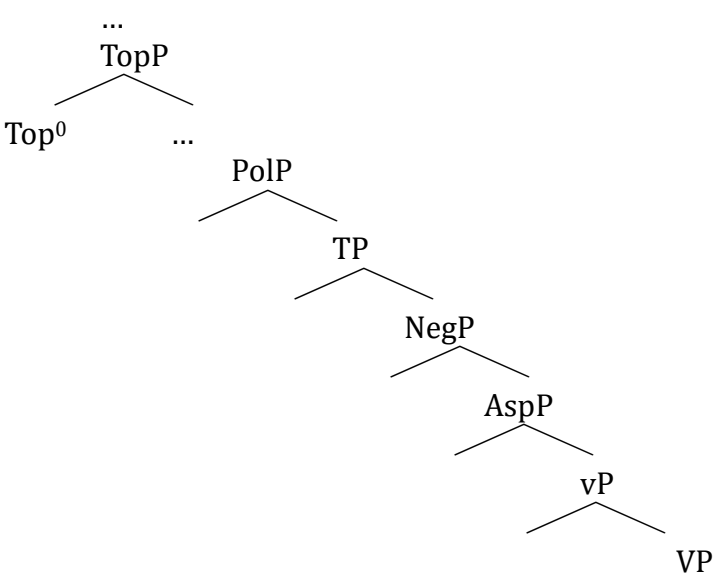
4.8. Applying the analysis to specific languages

Let us utilize the observations from the preceding sections to provide an explicit analysis of gapping in several languages under consideration. Under the approach advanced here, to analyze gapping in a given language we need to specify the locus of the E-feature, the head it agrees with, and the size of the deleted constituent.

Among Russian, Ossetic, and Georgian, the overall clause architecture is best studied for Russian, and it is on this language that I will focus first. Recall that the clause structure proposed in the literature is (155).

(ii) alan-ɐn kafun ne=nʁezuj soslan-ɐn=ba zarun ~~ne=nʁezuj~~
Alan-DAT dance.INF NEG=is.possible Soslan-DAT=CTR sing.INF NEG=is.possible
'Alan shouldn't dance and Soslan shouldn't sing.'

(155)

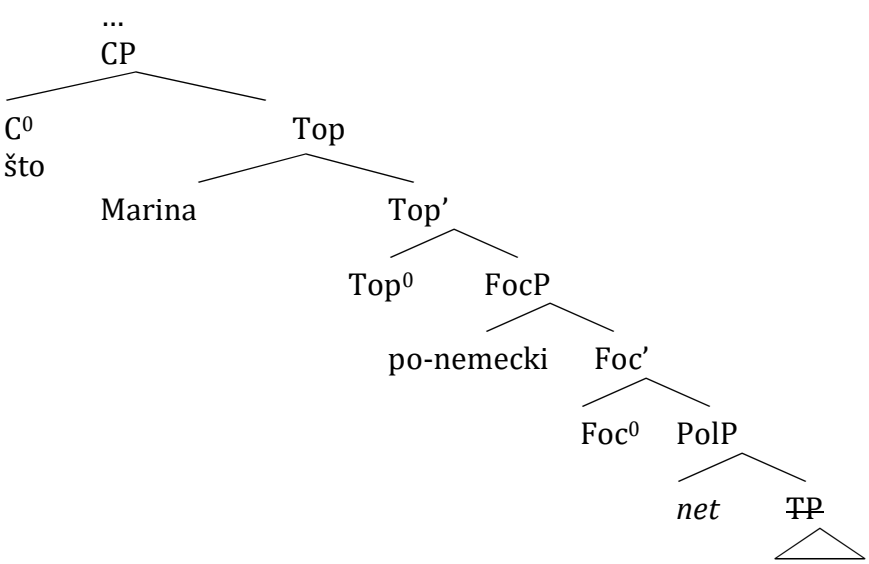


For Russian, I propose that what is deleted is the complement of the PolP, which is the TP. This immediately explains why tense and aspect must match between the antecedent and the gapping site, while the polarities do not have to.

Furthermore, left-peripheral positions demonstrably exist above the PolP, as illustrated in (156). Following Gribanova (2017), I assume that *net* 'no' occupies PolP. The remnants, *Marina* and *po-nemecki* 'in German', obligatorily precede *net*, and accordingly they must be situated in the left periphery abovethe PolP.

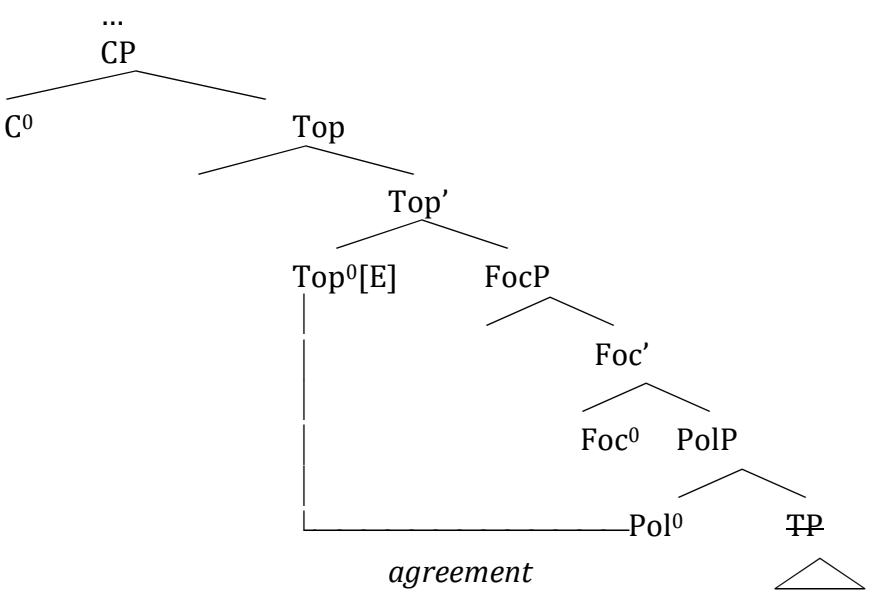
(156) a. rajner po-russki stixi pisal
Rainer in.Russian poems wrote
a literaturovedy sčitajut [što marina
CTR literary.criticists think COMP Marina
po-nemecki net]
in.German no
'Rainer wrote poetry in Russian, and literary criticists think that Marina didn't (write poetry) in German.'

b.



Accordingly, for gapping, with or without stranded polar particles, I assume the general structure as shown in (157).

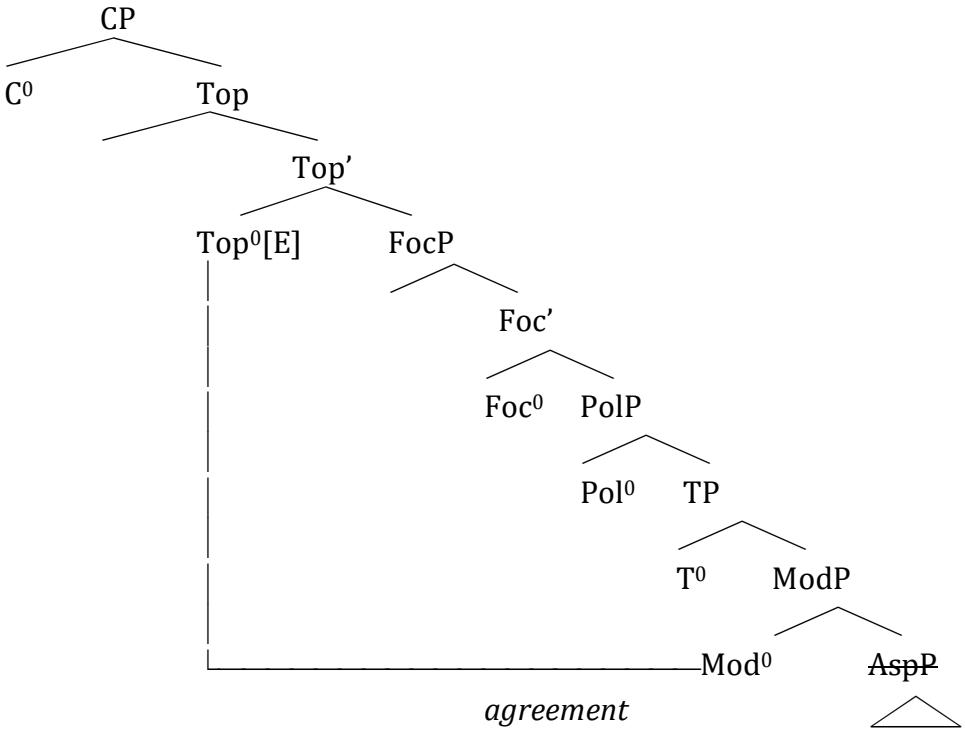
(157)



In Ossetic, on the other hand, to capture the possibility of tense and modality mismatches, (85) and (88), and assuming that the order in the functional sequence

(131) is valid for Ossetic, it is natural to assume that what is deleted is the complement of Mod^0 rather than of Pol^0 (158). In the absence of overt auxiliaries in Ossetic, it is normally impossible to see that Pol^0 is not clause-final in respective ellipses.

(158) …



In Georgian, an explicit analysis of gapping hinges on a yet non-existent analysis of the left periphery of the vP in this language. As we have seen in Section 4.2.3.3, Georgian allows TAM mismatches under gapping as long as the respective TAM forms belong to one and the same series. More work on the syntax of TAM in Georgian is necessary before a complete analysis of gapping becomes possible.

4.9. Potential alternative analyses

In this section, I discuss two potential alternative analyses of embeddable gapping. One of them proposes to treat it as pseudogapping, and the other posits null verbs in the ellipsis sites.

4.9.1 Gapping or pseudogapping

One possible objection to the analysis presented here is that the variety of ellipsis we consider is not gapping but rather some different kind of ellipsis. Specifically, one likely candidate is pseudogapping. Recall that in English, pseudogapping is a variety of ellipsis that deletes the lexical verb while stranding the auxiliary, e.g. *will* in the 2nd conjunct of (159).

(159) John will bring wine to the party, and Mary will beer. Thoms (2016)

In this narrow sense, pseudogapping is extremely rare cross-linguistically, but, in principle, this notion can be generalized to a cross-linguistically applicable one in the following manner:

> Pseudogapping is a type of ellipsis that deletes the lexical verb but keeps T^0.

Crucially, unlike true gapping, pseudogapping in English can be embedded (160).

(160) Mittie ate nattoo, and I thought that Sam had ~~eaten~~ rice. Gengel (2013: 14)

Then, perhaps what we have seen above are instances of pseudogapping with a null T^0? As we have seen, the conjuncts are indeed at least TPs, while it is hard to determine the precise size of the constituent that is targeted by ellipsis. If gapping in English is derived by a process similar to (113) (as argued by Jayaseelan (1990); Lasnik (1995, 1999a, 1999b); and Gengel (2013), a.o.), this becomes a purely terminological question.

However, a number of properties of pseudogapping in English, observed by Levin (1980) when comparing pseudogapping to VPE, do not generalize to our cases. Specifically, English pseudogapping

cannot be deeply embedded[73], (161a).
shows preference for same subjects, (161b)
cannot happen in infinitival clauses, (161c)
cannot go backwards, (161d).

(161) a. *Since tornadoes petrify Harold, I can't for the life of me figure out why he's so surprised about the fact that they do me, too.

b. A: That thunderstorm bothered Millicent last night.
B: ??Well, your stereo did me.
B: I'm afraid my stereo did, too.

c. *I wrote his papers, but I did not want to his dissertation.

d. *I will a poem, and Mary wrote a novel.

[73] Not all speakers share this judgment.

This is not what occurs in the languages under consideration for the construction that is analyzed as gapping in this chapter. The only exception is the directionality of gapping, which usually only proceeds forwards even in languages where it can be embedded.

The sentences in (162) illustrate, mostly on the example of Russian, that gaps can be deeply embedded (162a); they may have non-matching subjects (162 b-c); and can involve infinitival clauses (162d).

(162) Deeply embedded gaps

a. ?vasʲa lʲubit vodku a jevo drug utverždajet [što vasʲa
Vasya likes vodka CTR his friend claims COMP Vasya
jemu govoril [što vasina žena ~~lʲubit~~ vino]]
he.DAT told COMP Vasya's wife likes wine
'Vasya likes vodka, and his friend claims that Vasy told him that Vasya's wife (likes) wine.'

Non-matching subjects

b. A: vasʲa lʲubit vodku
Vasya likes vodka
'Vasya likes vodka.'
B: a ja samogon
CTR I moonshine
'And I moonshine.' Russian

c. A: rezos adʒavrebs sulguni
Rezo.DAT hates sulguni.NOM
'Rezo hates sulguni.'
B: ninos=k'i t'q'emali
Nino.DAT=CTR tkemali.NOM
'And Nino tkemali.' Georgian

Infinitival clauses

d. ja napisal vasʲe dissertaciju a [~~napisatʲ~~
I wrote Vasya.DAT thesis.ACC CTR write.INF
pete stat'ju] (ja) nje xoču/otkazalsja
Petya.DAT article.ACC I NEG I.want/refused
'I wrote a thesis for Vasya, and I don't want/refused to (write) an

article for Petya.' Russian

Additionally, English pseudogapping allows tense mismatches (Kyle Johnson, p.c.) (163).

(163) Tom ate tomatoes and he will onions too.

However, as we have already seen in Section 4.2.3.3, this is in general not what is observed in our cases (164), except for Ossetic.

(164) a. Russian

*vasʲa	sjel	pomidory	sevodnʲa	
Vasya	ate	tomatoes	today	
a	petʲa	~~sjest~~	ogurcy	zavtra
CTR	Petya	will.eat	cucumbers	tomorrow

'Vasya ate the tomatoes today and Petya (will eat) the cucumbers tomorrow.'

b. Georgian

*iam	dɣes	xač'ap'uri	gamoacxo	nino=k'i
Ia.ERG	today	khachapuri.NOM	baked	Nino.NOM=CTR
xval		mč'ads	~~gamoacxobs~~	
tomorrow		mchadi.DAT	will.bake	

'Ia baked a khachapuri today, and Nino (will bake) a mchadi tomorrow.'

On the other hand, for clauses in morphological future, the only tense where Russian uses an auxiliary[74], constructions similar to VPE and pseudogapping are possible to some extent. Then tense mismatch becomes available for most speakers in the

[74] The morphological future in Russian is formed for imperfective verbs by combining the future of the verb 'to be' with the infinitive of the lexical verb, Timberlake (2004: 95). The verb 'to be' is the only verb in Russian that has a non-analytic future form.

counterpart of VPE, (165a), and for some speakers in the counterpart of pseudogapping (165b).

(165) a. vasja myl posudu včera a petja
Vasya washed dishes yesterday CTR Petya
budet ~~myt^{j}~~ zavtra
be.FUT.3SG wash.INF tomorrow
'Vasya did the dishes yesterday, and Petya will (do the dishes) tomorrow.'

b. vasja včera myl kuxn^{j}u a petja
Vasya yesterday washed kitchen CTR Petya
zavtra budet ~~myt^{j}~~ koridor
tomorrow be.FUT.3SG wash.INF corridor
'Vasya washed (the floor in) the kitchen yesterday, and Petya will (wash the floor) in the corridor tomorrow.'

Accordingly, would-be pseudogapping with a null T^0 behaves differently from pseudo-gapping with an overt T^0 in Russian. Furthermore, without a tense mismatch, a would-be equivalent of pseudogapping in Russian is degraded (166).

(166) *?vasja budet pisat^{j} stixi a maša budet ~~pisat^{j}~~
Vasya will write.INF poems CTR Masha will write.INF
romany
novels
'Vasya will write poems and Masha will novels.'

An additional property of the English pseudogapping is that it cannot be embedded in islands, as is illustrated for the complex NP island in (167a) and for a relative clause in (167b), both from Agbayani & Zoerner (2004: 206)[75]. On the other hand, as we

[75] Not all speakers share these judgments, however.

have seen in Section 4.2.2, this is not true of embedded gapping in Russian, Georgian, and some other languages.

(167) a. *Robin won't fascinate the children, but I believe [the claim [that she will ~~fascinate~~ the adults]].

b. *Robin can't speak French, but she has [a friend [who can ~~speak~~ Italian]].

For other languages of the sample, it is apparently impossible to come up with a precise counterpart of pseudogapping, given that they lack auxilliaries.

4.9.2 Deep or surface ellipsis?

An objection can be raised to the analysis advanced here that what looks like gapping in the languages under consideration is actually an instance of deep anaphora in the sense of Hankamer & Sag (1976): perhaps, no overt linguistic antecedent is necessary for this type of ellipsis to be licensed. In this case, the ability of a null proform to be embedded becomes rather unremarkable[76].

As McShane (2005: 158) shows, Russian indeed has several constructions that plausibly involve null verbs[77], however, these are restricted to verbs of motion (168a), speaking (168b); and hitting (168c).

[76] This analysis was proposed for gapping in Mandarin Chinese by Tang (2001). See the arguments in Wei (2011) against this analysis.

[77] She opts for a theoretically idiosyncratic analysis, which can however be easily reformulated in the terms of Construction Grammar.

(168) a. (entering the room)
ja na minutku $\emptyset_{motion}$
I for minute
'I've just stopped by for a minute.' McShane 2005: 160

b. (hearing a friend talk about somebody)
ty o kom $\emptyset_{speech}$?
you about who
'Who are you talking about?'

c. (watching a fight)
a zdorovo oni jevo $\emptyset_{hitting}$
CTR intensely they.NOM he.ACC
'And they really let him have it.' McShane (2005: 165)

However, embedded gapping in Russian is not restricted to verbs of these types. Therefore, by controlling for the semantics of the gapped verb this objection can be averted. No evidence for such null verbs is known in Ossetic or Georgian.

Furthermore, the putative transitive null verb of hitting (note that in (168c) the direct object *jevo* 'him' stands in the accusative) cannot have an antecedent that lexically assigns a different case to its argument. For instance, the verb *vmazat^j* 'to hit' assigns the dative to the hittee and accordingly the sentence in (169) with *vmazat^j* 'to hit' in the antecedent and the accusative marked direct object in the gapping site is ungrammatical.

(169) *vas^{j}a vmazal pete a kol^{j}a $\emptyset_{hitting}$ tol^{j}u
Vasya hit Petya.DAT CTR Kolya Tolya.ACC
'Vasya hit Petya, and Kolya Tolya.' (intended)

To make (169) grammatical, the case of the hittee needs to be changed to the dative, but this suggests that regular gapping is implicated in forming the sentence (170).

(170) vas^{j}a vmazal pete a kol^{j}a ~~vmazal~~ tole
Vasya hit Petya.DAT CTR Kolya hit Tolya.DAT
'Vasya hit Petya, and Kolya Tolya.'

Accordingly, positing dedicated null verbs is only able to account for a small subset of gapping-like structures in Russian.

4.10. Directions for further research

4.10.1 Standing Challenge: Directionality of Gapping

Ross (1970) advanced a conjecture that the directionality of gapping in a given language correlates with SVO vs. SOV word order. This holds true for Japanese and Korean. First problematic Quechua data were discovered by Pulte (1971; 1973). Furthermore, Ross' conjecture is not borne out by a larger language sample. Hungarian allows both SOV and SVO, gapping in both directions is preferable with the SOV order[78].

(171) Hungarian, András Bárány, p.c.
a. forward gapping, SOV
Mari téa-t iszik és Zsuzsa kávé-t
M. tea-ACC drinks and Zs. coffee-ACC
'Mari drinks tea and Zsuzsa coffee.'

b. backward gapping, SOV
Mari teá-t és Zsuzsa kavé-t iszik.
M. tea-ACC and Zs. coffee-ACC drinks
'Mary ~~drinks~~ tea and I believe that Zsuzsa drinks coffee.'

[78] Bartos (2001) calls this "a more permissive dialect" and focuses on the grammar of those speakers who only allow forward gapping.

c. embedded forward gapping, SOV

Mari	téat	iszik	és	azt	hiszem
M.	tea	drinks	and	that.ACC	I.believe
hogy	Zsuzsa	kávét			
COMP	Zs.	coffee			

'Mary drinks tea and I believe that Zsuzsa ~~drinks~~ coffee.'

Further counter-evidence comes from languages of the Caucasus. For instance, Dargwa (Northeast Caucasian) and Abaza (Northwest Caucasian) are both strictly SOV languages, and yet only allow forward gapping (my fieldwork data). Furthermore, SVO is a marked option in Rutul (Northeast Caucasian), which also only allows forward gapping. (172a) shows that forward gapping is possible in Rutul under the SOV order, while (172b) shows that backward gapping is not.

(172) Rutul

a.

Musa-ra		ubul	ji<w>χ-~~i~~-r-a
musa-ERG		wolf	<III>kill-PF-CVB-AUX
Ali-ra	sik	~~ji<w>χ-i-r-a~~	
ali-ERG	fox	<III>kill-PF-CVB-AUX	

'Musa killed a wolf, and Ali, a fox.'

b.

*Musa-ra		ubul	~~ji<w>χ-i-r-a~~
musa-ERG		wolf	<3>kill-PF-CVB-AUX
Ali-ra	sik	ji<w>χ-~~i~~-r-a	
ali-ERG	fox	<III>kill-PF-CVB-AUX	

'Musa killed a wolf, and Ali, a fox.'

On the other hand, in Russian and Romanian, the SOV order is possible, and still, only forward gapping is grammatical, *pace* Ross' (1970) claim about Russian.

The account I have proposed admittedly has no means to rule out backward gapping in a given language. I hypothesize that a separate mechanism is implicated in

determining the directionality of gapping. This is compatible with the observation of Bartos' about the two populations of Hungarian speakers: speakers may differ in whether they have acquired this conjectural mechanism. As we will see in the next chapter, directionality depends on the type of ellipsis: sluicing and its generalizations are universally able to go in both directions.

4.10.2 The role of semantic parallelism in licensing of gapping

The current analysis does not directly rule out configurations where the antecedent is situated in an embedded clause, and the gapping site in a root clause. Such sentences, however, are typically ungrammatical, as illustrated in (173) for English and Russian[79], see Toosarvandani (2016) for a discussion of English facts and more references.

(173) a. English
*She's said Peter has eaten his peas, and Sally ~~has eaten~~ her green beans, so now we can have dessert.
Intended: 'She has said that Peter has eaten his peas; Sally has eaten her green beans.' (Johnson 2009:293)

b. Russian

*što	petʲa	lʲubit	makarony	podtverždaet	maša
COMP	Petya	likes	pasta	confirms	Masha
a	vasʲa	~~lʲubit~~	ris		
CTR	Vasya	likes	rice		

'Masha confirms that Petya likes pasta, and Vasya (likes) rice.' (intended)

[79] In the Russian example, the embedded clause that hosts the antecedent is fronted. This prevents the (uninteresting) parse where both the antecedent and the gapping site are embedded. I am not clear how to block the latter parse in English, and whether English speakers can in principle access the reading where the gapping site and the antecedent are separated by the clause boundary.

Locality considerations do not rule out the sentences in (173): the gapping site is accessible to agreement both in high- and low-licensing languages. The fact that the antecedent is embedded does not automatically make it invisible for the E-feature. Indeed, as we have seen in Section 4.5, the antecedent and the gapping site may be embedded under different matrix verbs, and accordingly an embedded antecedent must remain accessible in such a case.

I assume that the ungrammaticality of (173) is a consequence of how the semantic condition on matching with the antecedent is calculated. Recall that, on the LF, the E-feature checks a certain semantic condition on how the meanings of the antecedent and of the gapping site are related. I leave the nature of this condition for further research. It is already clear, however, that the ban on embedding a gap with a matrix antecedent and the ban on embedding an antedecent for a matrix gap are independent.

Finally, it is not clear whether the ban on sentences such as in (173) is cross-linguistically universal. Assuming that backward gapping in Korean is indeed gapping – that is, that it is derived by the same mechanism as gapping in other languages, Korean provides a counterexample to this generalization, as Jung (2016) showed.

(174) Korean, Jung (2016)

[John-i	sakwa-lul	~~mek/mek-ess-ko]~~,	kuliko	na-nun
John-NOM	apple-ACC	eat/eat-PAST-KO	and	I-TOP
[Mary-ka	orange-lul	mek-ess-ta-ko]	sangkakha-e	
Mary-NOM	orange-ACC	eat-PAST-DEC-that	think-DEC	

'John ate an apple, and I think that Mary ate an orange'

4.10.3 Constructions similar to gapping

In many languages, constructions very similar to gapping may appear as fragment answers to wh-questions (175 a-b), and it is natural to seek an analysis that would be able to treat such constructions alongside with more prototypical instances of gapping.

(175) a. Eastern Armenian

Q:	ov	um	c'ec'ec?
	who.NOM	who.DAT	beat.AOR.3SG
A:	ara-n	hajk-i-n	~~c'ec'ec~~
	Ara-DEF	Hayk-GEN-DEF	beat.AOR.3SG

'Who beat up who? Ara ~~beat up~~ Hayk.'

b. Russian

Q:	kto	kovo	ukusil?
	who.NOM	who.ACC	bit
A:	koška	krysu	
	cat.NOM	rat.ACC	

'Who bit who?' 'The cat (bit) the rat.'

c. German

Q:	Wer	hat	was	mitgebracht?	
	who	has	what	brought	
A:	Ich	~~habe~~	den	Wein	~~mitgebracht~~
	I	have	DEF	wine	brought

'Who brought what? I (brought) the wine.' Knobloch 2012: 22 German

Possibly, corrections belong to a similar class of phenomena. Some speakers of English allow gapping across the discourse in such cases. One might speculate that in corrections, a silent coordinator is present that is able to host a licensing feature. The dialog in (176), which is grammatical for speakers of this type, receives then the structure shown in (176). The silent *but* is understood to coordinate the utterance of A, *Did Sam go to the store?*, with the reply of B.

(176) A: Did Sam go to the store?
B: No, but[*silent*][E] Bill ~~went~~ to the market.

Furthermore, a construction very similar to gapping appears in comparatives (177). As Lechner (2004) argued on the basis of English and German data, the properties of this type of ellipsis are very similar to gapping.

(177) a. Eastern Armenian

suren-ə	avelišat	gajl=e	spanel kan	ara-n
Suren-DEF	more	wolf=3SG	kill.PRTthan	Ara-DEF
aʁves=~~e~~	~~spanel~~			
fox=3SG	kill.PRT			

'Suren has killed more wolves than Ara did foxes.'

b. Russian

vasja	ubil	bol'še	volkov	čem	petja	~~ubil~~	lis
Vasya	killed	more	wolf.PL.ACC	than	Petya	killed	fox.PL.ACC

'Vasya killed more wolves than Petya did foxes.' Russian

Remarkably, gapping is possible in comparatives even in languages that usually disallow embedded gapping, such as English or German, Lechner (2004). Eventually, the analysis of gapping proposed here has to be extended to these cases. I leave this for further research. Additionally, it remains to be seen whether subgapping – apparently, a fairly widespread phenomenon – can be accommodated by this type of analysis as well.

Finally, Reeve (2014) noticed that sentence-initial *if*-clauses in German can serve as antecedents for main clauses, despite the absence of coordination (178). These data are replicable in Dutch as well.

(178) German Reeve (2014:160)

wenn	überhaupt	irgendjemand	irgendetwas	gekauft	hatt	
if	at.all	anyone	anything	bought	has	
dann	Dirk	~~hat~~	einen	Apfel	~~gekauft~~	
then	Dirk	has	def.ACC	apple	bought	

'If anyone bought anything at all, then Dirk (bought) an apple.'

Tentatively, I hypothesize that German and Dutch license an Ans operator in the left periphery of the main clause in this case. It is not clear, however, at present why English is unable to do so.

4.11. Conclusion

In this chapter, I have used a naïve definition of gapping as a construction where the finite verb (and possibly, more subconstituents of the VP) are missing. I have explored the cross-linguistic properties of the construction thus defined.

Partly, the results of this discussion are purely destructive: we have seen that none of the basic properties thought to distinguish gapping from other ellipsis varieties are cross-linguistically robust.

On the constructive side, I have shown that movement and deletion can successfully derive many of the observed properties of gapping, without automatically ruling out those that it does not directly predict, such as variation in the directionality of deletion.

Chapter 5

Typology of Sluicing in Wh- and Non-Wh-Questions

In this chapter, I investigate ellipsis in various types of embedded questions from a cross-linguistic standpoint. I show that ellipsis in polar and alternative questions, in languages where it is grammatical, shares many common properties with sluicing, and accordingly I call these types of ellipsis Pol-sluicing and Alt-sluicing. I show that the presence of sluicing, Alt-sluicing, and Pol-sluicing in a given language is subject to a certain implicational universal and provide an analysis of these constructions that derives this universal. The analysis is based on the ideas that, first, ellipsis is triggered by an appropriate feature whose content gives rise to the observed hierarchy, and, second, that the head that carries the feature and licenses the ellipsis may undergo agreement with the head whose complement is elided. I explore two analytic possibilities: first, that the universal follows from the existence of a universal hierachy of interrogative C heads and the variation of the locus of the E-feature, and second, that the universal is due to systematic cross-linguistic variation in the content of the E-feature.

5.1. Introduction: Sluicing beyond English and wh-phrases

Among the major empirical breakthroughs of the 20th century linguistics there was the discovery of implicational universals by Greenberg, and, within a fairly different intellectual tradition, Ross' (1967, 1969, 1970) discovery of a wealth of new syntactic phenomena. In the course of the last two decades, these approaches have been

fruitfully combined in a quest to find, and explain, implicational universals connecting newly discovered syntactic phenomena, see, e.g., Baker (2005, 2008, 2015); Bošković (2009); Harbour (2016), and Woolford (1999, 2006). In this chapter, I implement this research program in the domain of embedded questions and ellipsis. Specifically, I propose and derive an implicational universal that predicts a relation between sluicing in embedded wh-questions, alternative questions, and polar questions in a given language.

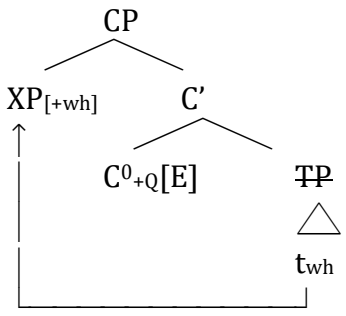
Classical sluicing, as illustrated in (179), was discovered, and named, by Ross (1969/2012). Under the now widely accepted account of Merchant (2001) the wh-remnant first undergoes movement into Spec CP and then deletion of the complement of C is licensed by an appropriate feature [E] hosted by the interrogative C, (179d).

(179) a. Mary cooked something, but I don't know **what**.

b. A car is parked on the lawn, but we don't know **whose**.

c. The channel was 15 feet wide, but I don't know **how deep**.

d.



Very informally speaking, what is retained under sluicing, is the focus of a question. For languages such as English where wh-fronting and focus marking are independent phenomena, this is merely a simile, but for languages such as Hungarian (Van

Craenebroeck 2012: 42), Georgian[80] (Erschler 2015), Gungbe, Lipták & Aboh (2013), or Persian, Toosarvandani (2008), where wh-phrases actually move into a focus position, this is indeed an accurate statement. This intuition allows us to generalize the notion of sluicing to other types of questions, see, for instance, Lipták & Aboh (2013) for Gungbe; Erschler (2014) for Ossetic, and Shlomina (2016) for Russian.

This will result in sentences such as illustrated in (180). Let us call *Pol-sluicing*[81] the construction exemplified in (180a) and *Alt-sluicing* the construction exemplified in (180b). Although severely ungrammatical in English, crosslinguistically they fare quite well. The sentences in (180 c-d) illustrate that Pol-sluicing and Alt-sluicing exist in Polish, (180 e-f) make the same point for German, and (180g) illustrates Pol-sluicing in Gungbe.

(180) Pseudo-English

a. Pol-sluicing
Mary cooked something, but I don't know *whether*[82] *rice*.
Intended reading: 'Mary cooked something, but I don't know whether it is rice that she cooked.'

b. Alt-sluicing
Mary cooked something, but I don't know *whether rice or beans*.
Intended reading: 'Mary cooked something, but I don't know whether she cooked rice or whether she cooked beans.'

[80] In a recent paper, Borise & Polinsky (2018) argue that in Georgian, focused phrases, including wh-phrases, stay in situ, whereas the material that intervenes between these phrases and the verb undergoes phonologically motivated movement. It remains to be seen how their conclusions dovetail with ellipsis facts.

[81] Konietzko (2016) considers such constructions as instances of embedded stripping. However, as he notices himself, in many languages including German it is restricted to embedded questions. See a further discussion of the relationship between Pol-sluicing and embedded stripping in Section 5.4.2.1 below.

[82] If *whether* is replaced by *if*, the English sentences do not improve.

Polish (Stanisław Dunin-Horkawicz, p.c.)

c. Zosia coś ugotowała, ale nie wiem,
Zosia something she.cooked but NEG I.know
czy ryż.
whether rice
'Zosia cooked something, but I don't know whether (she cooked) rice.'

d. Zosia coś ugotowała, ale nie wiem,
Zosia something she.cooked but NEG I.know
(czy) ryż czy kasz-ę
whether rice whether porridge-ACC[83]
grzyczan-ą.
of.buckwheat-ACC
'Zosia cooked something, but I don't know whether (she cooked) rice or buckwheat.'

German

e. (Der) Hans hat jemandem geschmeichelt, aber ich
DEF Hans has someone.DAT flatter.PRTC but I
weiß nicht ob **(dem)** **Uwe**
know.PRS.1SG NEG Q DEF.DAT U.
oder (dem) Jan
or DEF.DAT J.
(~~der) Hans geschmeichelt hat~~.
'Hans flattered someone, but I don't know whether (it is) Uwe or Jan (that Hans flattered).'

f. ?(Der) Hans hat jemandem geschmeichelt,
DEF Hans has someone.DAT flatter.PRTC
aber ich weiß nicht ob **(dem)** **Uwe**
but I know.PRS.1SG NEG Q DEF.DAT U.
(~~der) Hans geschmeichelt hat~~.
'Hans flattered someone, but I don't know whether (it is) Uwe (that Hans flattered).'

Gungbe (Niger-Congo, Benin; Lipták & Aboh 2013)

g. mɛ̀ ɖé wá àmɔn má nyón èn ní kofi
someone IND come but I.NEG know it if Kofi
wɛ̀
FOC
'Someone came, but I don't know if (it was) Kofi.'

[83] Glosses: ABL ablative; ACC accusative; ALL allative; ASP aspect; AUX auxiliary; COMP complementizer; DAT dative; ERG ergative; FOC focus marker; GEN genitive; IND indicative; INST instrumental; INT interrogative; NEG negation; NOM nominative; Q interrogative particle; REL relativizer; SM subject marker.

There are several reasons to extend the term *sluicing* to these constructions: first, the embedded remnant in such a sentence is, roughly speaking, the focus of a polar or alternative question, and, second, as we will see later, when such constructions are grammatical, they satisfy the standard tests for sluicing.

An unexpected cross-linguistic connection exists between the three types of ellipsis. Namely, the following implicational universal holds:

(a) **Pol ⇒ Alt**
If a language allows Pol-sluicing, it will allow Alt-sluicing.

(b) **Alt ⇒ wh**
If a language allows Alt-sluicing, it will also allow regular sluicing.

In this chapter, I propose an analysis of sluicing in polar and alternative questions that derives this universal.

Some evidence exists that even in some languages where neither Alt-sluicing nor Pol-sluicing are grammatical, the former is still somewhat more acceptable than the latter (Seth Cable and Jeremy Hartman, p.c., for English, and Matti Miestamo, p.c., for Finnish).

The universal holds specifically for ellipsis in embedded questions. Languages that disallow embedded Alt-sluicing or Pol-sluicing often allow it in fragment questions, as illustrated by the contrast between (181a) and (181b). This might indicate that these constructions have derivations different from sluicing in embedded questions.

(181) Modern Greek

a. *i ʝinaika mu maʝirepse kati alla
DEF wife my cooked something but
ðen ksero an ridzi
NEG I.know whether rice
'My wife cooked something, but I don't know whether (it is) rice.'
(intended)

b. A: i ʝinaika mu maʝirepse kati
DEF wife my cooked something
'My wife cooked something.'
B: ridzi?
rice?

To account for the universal described above, I will extend the analysis of Van Craenenbroeck and Lipták (2013). They proposed that if a language has sluicing and may move some material other than wh-phrases into the position where sluicing remnants are situated, then this material may serve as ellipsis remnants as well. As I will show later, however, their proposal needs to be refined. I will argue that generalized sluicing is fed by fronting of the remnant into the specifier of an appropriate head high in the clause and subsequent deletion of the complement of that head. The deletion is triggered by a feature whose content is responsible for the observed hierarchy.

The fact that we need to deal here with embedded alternative questions introduces a complication for the E-feature based ellipsis licencing. As has been first shown by Han & Romero (2004) and confirmed by later research, in some languages alternative questions are obtained as disjunctions of polar questions. Consequently, the head that is responsible for question embedding and licensing of ellipsis is not a sister of the remnant: ellipsis proceeds in the daughters of the &P. To circumvent this

difficulty, I adopt a modification of Aelbrecht's (2010) agreement-based approach to ellipsis.

The rest of the chapter is organized as follows: in section 5.2, I provide reasons to treat ellipsis in polar questions and alternative questions as sluicing, namely, I show for a number of languages that the respective constructions satisfy the standard tests for sluicing. In section 5.3, I introduce the universal that connects the three types of sluicing and list the language sample this universal is based upon. In section 5.4, I argue that the ultimate reason for the universal must lie in the contents of the licensing feature rather than the (in)ability of remainders to front and overview environments where sluicing occurs, namely, embedded questions, root questions, and split questions. Later on, I only deal with embedded sluices. In section 5.5, I lay out the general scheme of the agreement-based approach to ellipsis. In Section 5.6, I present my proposal. In section 5.7, I discuss the syntax of embedded polar questions and alternative questions, and address the question of where the licensing feature is located. Section 5.8 concludes.

5.2. Why are Pol-sluicing and Alt-sluicing indeed related to sluicing?

In this section, I argue that ellipsis in polar and alternative questions is indeed similar to regular sluicing, although *a priori*, all the three types of ellipsis could be completely dissimilar to each other.

The reason to treat ellipsis in alternative and polar questions on par with the familiar wh-sluicing is that, when grammatical, Alt-sluicing and Pol-sluicing exhibit

all the standard properties of sluicing proposed in the literature, see e.g. Chung et al (1995) and Merchant (2001). These standard properties include

- ✓ Connectivity effects between the sluice and the antecedent;
- ✓ Ability to be separated from the antecedent by a clause boundary;
- ✓ Ability to linearly precede the antecedent;
- ✓ Ability to ameliorate or amnesty island violations[84];
- ✓ "Sprouting": a sluice might exist without an overt antecedent.

It is natural to assume, therefore, that non-wh sluicing must be amenable to similar treatment as regular sluicing. This idea has been advanced first by Van Craenenbroeck & Lipták (2006, 2013).

Ideally, these properties need to be checked to each language of the sample. Unfortunately, that is unrealistic at present, and, to illustrate the fact that all the standard sluicing tests are satisfied by generalized sluicing, I only apply them to Pol-sluicing in Russian and to Alt-sluicing in Georgian.

5.2.1 Pol-sluicing: Russian

Embedded polar questions in Russian are headed by the obligatory complementizer =*li*, a 2nd position clitic. For reasons to analyze it as a complementizer, see King (1995), Franks & King (2000), and also Bailyn (2012: 86). At this stage, however, this issue is not really important for our discussion. This complementizer follows the

[84] It is worth mentioning that, under a number of recent proposals, for instance, Marušič & Žaučer (2013) and Barros et al (2014) island amelioration under sluicing is spurious. Nevertheless, given that the phenomenon is observed virtually in all languages that exhibit classical sluicing, it remains valid as an empirical test.

clause-initial focus of the question, for instance, in (182a) it encliticizes to the verb *otravili* 'they.poisoned', in (182b) to the fronted direct object *Sokrata* Socrates.ACC, and in (182c) to the fronted adjunct *cikutoj* 'with hemlock'.

(182) a. ja ne=znaju otravili=li sokrata cikutoj
I NEG=I.know they.poisoned=Q Socrates.ACC hemlock.INS
'I don't know whether they poisoned Socrates with hemlock.'

b. ja ne=znaju sokrata =li otravili
I NEG=I.know Socrates.ACC=Q they.poisoned
cikutoj
hemlock.INS
'I don't know whether it's Socrates who they poisoned with hemlock.'

c. ja ne=znaju cikutoj =li otravili
I NEG=I.know hemlock.INS=Q they.poisoned
sokrata
Socrates.ACC
'I don't know whether it's with hemlock that they poisoned Socrates.'

Under Pol-sluicing, the fronted constituent and *=li* are retained, (183). The same example (183) illustrates that Pol-sluicing in Russian requires case matching between the antecedent and the remnant. In this sentence, both the remnant *cikutoj* 'with hemlock' and the correlate *čem-to* 'with something' stand in the instrumental, but the same situation obtains with all the other morphological cases of Russian, which are nominative, accusative, genitive, dative, and prepositional.

(183) sokrat-a čemto otravili no=ja ne=znaju
Socrates-ACC something.**INS** they.poisoned but=I NEG=I.know
cikut-oj=li
hemlock-**INS**=Q
'They poisoned Socrates with something, but I don't know whether with hemlock.'

Russian does not allow preposition stranding. Accordingly[85], preposition drop is impossible in Pol-sluices. In (184), the correlate of the sluice is a PP, *iz-pod čevoto* 'of something'. In the sluice *iz-pod vina* 'of wine', the preposition *iz-pod* must be retained.

(184) diogen žil v=bočk-e iz-pod čevoto
Diogenes lived in=tub-PREP of something
no=ja ne=znaju ??(iz-pod) vina=li
but-I NEG=I.know of wine-GEN=Q
'Diogenes lived in a tub (originally used) for something, but I don't know for what (it was used originally).'

Furthermore, the remnant under Pol-sluicing can precede its antecedent, as it is the case with regular sluicing, Merchant (2001). In (185a), the sluice *cikutoj=li* 'whether with hemlock' precedes the antecedent *sokrata čem-to otravili* 'they poisoned Socrates with something'. The example in (185b) illustrates the same phenomenon for regular sluicing.

(185) a. **cikut-oj=li** ja ne=znaju no=sokrat-a
hemlock-**INS**=Q I NEG=I.know but=Socrates-ACC
čemto otravili
something.**INS** they.poisoned
'Whether (it is) with hemlock, I don't know, but they poisoned Socrates with something.'

b. **čem** ja ne=znaju no=sokrat-a
what-**INS** I NEG=I.know but=Socrates-ACC
čemto otravili
something.**INS** they.poisoned
'What with, I don't know, but they poisoned Socrates with something.'

[85] The generalization that languages without preposition stranding should disallow preposition drop under sluicing has been advanced in Merchant (2001). It has not been uncontested, see Almeida & Yoshida (2007) and Leung (2014).

This shows that, at least in Russian, Pol-sluicing is a type of ellipsis distinct from stripping. Stripping exists in Russian, (186a) but the remnant under stripping is unable to precede its antecedent, (186b):

(186) a. platon napisal o kazni sokrata
Plato write.PST.SG.M about execution.PREP Socrates.GEN
i ksenofont tože
and Xenophon too
'Plato wrote about the execution of Socrates and Xenophon too.'

b. *ksenofont (tože)[86] i platon napisal o kazni
Xenophon too and Plato write.PST.SG.M about execution
sokrata
Socrates
'*Xenophon too and Plato wrote about the execution of Socrates.'

A Pol-sluicing remnant may be deeply embedded (187a), however, in Russian this is possible for remnants of stripping as well (187b).

(187) a. manul obmanul kovo-to i ja dumaju
Pallas'.cat deceived who.ACC-IDF and I I.think
što ja znaju ulana=li
COMP I I.know uhlan.ACC=Q
'The Pallas' cat deceived somebody and I think that I know whether (it deceived) the uhlan.'

b. manul obmanul ulana i ja dumaju
Pallas'.cat deceived uhlan.ACC and I I.think
[što kulan sčitaet [što ulara tože]]
COMP onager assumes COMP snowcock.ACC too
'The Pallas' cat deceived the uhlan and I think that the onager assumes that (the cat deceived) the snowcock too.'

[86] The presence or absense of 'too' does not affect grammaticality of this sentence.

Movement in Russian is subject to all the standard island constraints, see e.g. Zaliznjak & Paducheva (1979); Pesetsky (1982); and Testelec (2001). As is known since Ross (1969/2012), sluicing ameliorates island violations, and it is natural to expect this property from any generalization of sluicing. Pol-sluicing indeed ameliorates island violations, as an example consider extraction out of an NP[87].

(188) safo utopilas^{j} ot=l^{j}ubvi k=kakomu=to junoše
Sappho drowned.herself from=love to-what=IDF youth.DAT
no=ja ne=pomn^{j}u k=faonu=li
but=I NEG=I.remember to=Phaon.DAT=Q
'Sappho drowned herself out of love to some youth, but I don't remember whether (she drowned herself out of love) to Phaon.'

The following pair of sentences show that an NP is indeed an island in Russian with respect to wh-movement, (189a) and scrambling, (189b):

(189) a. *k=komu safo utopilas^{j} ot=l^{j}ubvi?
to=who.DAT Sappho she.drowned.herself from=love
'Out of love to whom did Sappho drown herself?' (intended)

b. *k=faonu safo utopilas^{j} ot=l^{j}ubvi
to=Phaon.DAT Sappho she.drowned from=love
'Sappho drowned herself out of love to Phaon.' (intended)

Finally, sprouting, the presence of a sluice in the absence of an overt correlate is possible for Pol-sluicing (190).

[87] For the purposes of the current discussion, the distinction between DPs and NPs is immaterial.

(190) vasʲa pʲjot no ja ne znaju vodku=li ~~on pʲjot~~
Vasya drinks but I NEG I.know vodka=q he drinks
'Vasya drinks but I don't know whether (he drinks) vodka.'

To recapitulate, Pol-sluicing in Russian exhibits all the properties that the regular sluicing can be expected to.

5.2.2 Alt-sluicing: Georgian

Georgian embedded alternative questions do not carry an overt complementizer: the interrogative complementizer *tu*, which is optional in embedded wh-questions (191a) and obligatory in embedded polar questions (191b), is homophonous with the interrogative 'or'.

(191) Georgian Erschler (2015)

a. rezo mixvda <tu> rat'om <*tu> c'avida
Rezo.NOM s/he.realized Q why Q s/he.left
manana
Manana.NOM
'Rezo realized why Manana left.'

b. ar vici <*tu> ciq'vebi tu k'argad daprinaven
NEG I.know Q squirrels Q well they.would.fly
'I don't know whether squirrels fly well.'

In (192), *tu* occurs in an embedded alternative question.

(192) ar vici (*tu) tamari tu manana raɣacas
NEG I.192 Q.COMP Tamar.NOM or.Q Manana.NOM something.DAT
amzadebs
cooks
'I don't know whether Tamar or Manana cooks something.'

Georgian allows Alt-sluicing – in (193a), 'Rusudan or Tamar' serves as a remnant – but disallows Pol-sluicing, (193b).

(193) a. tornik'e-m viɣaca ako magram
Thornike-ERG somebody.NOM praise.AOR.3SG but
ar maxsovs **rusudan-i** **tu** **tamar-i**
NEG I.remember Rusudan-NOM or.Q Thamar-NOM
'Thornike praised someone but I don't remember whether (he praised) Rusudan or Tamar.'

b. *tornik'e-m viɣaca ako magram
Thornike-ERG somebody.NOM praise.AOR.3SG but
ar maxsovs **tu** **rusudan-i**
NEG I.remember Q Rusudan-NOM
'Tornike praised someone but I don't remember whether (he praised) Rusudan.' (intended)

The same battery of tests that we used in the preceding section for Pol-sluicing in Russian is applicable to Alt-sluicing in Georgian. Georgian has a rich case system (nominative, ergative, dative, genitive, instrumental, and adverbial, Boeder (2005); the vocative case by its nature does not occur in contexts of relevance to us). That makes case matching under sluicing easy to illustrate. In (194a), the correlate *raɣac* 'something' stands in the nominative, and accordingly the sluice *p'ur-i tu q'vel-i* 'bread or cheese' must stand in the nominative as well. In (194 b-c), the same effect is illustrated for the genitive.

(194) a. manana-m gušin raγac iq'ida,
Manana-ERG yesterday something.NOM s/he.bought
magram ar mitxra p'ur-i tu q'vel-i
but NEG s/he.told.me bread-NOM or.Q cheese-NOM
'Manana bought something yesterday, but she didn't tell me whether (she bought) bread or cheese.'

b. manana-s viγac-is ešinia
Manana-DAT someone-GEN fears
magram ar vici ʤaγl-is tu gvel-is
but NEG I.know dog-GEN or snake-GEN
'Manana is afraid of something, but I don't know whether (she is afraid) of dogs or of snakes.'

c. tornik'e-m c'aik'itxav viγac-is leks-i
Tornike-ERG s/he.read someone-GEN poem-NOM
magram ar vici važa pšavela-s
but NEG I.know Vazha Pshavela-GEN
tu nik'oloz baratašvil-is
or.Q Nikoloz Baratashvili-GEN
'Tornike recited someone's poem, but I don't know wether (he recited a poem of) Vazha Pshavela's or Nikoloz Baratashvili's[88].'

Georgian Alt-sluices may be deeply embedded. In (195), the sluice 'Rusudan or Tamar' is embedded under the verb *icis* 'knows', which in its turn is embedded under *mgonia* 'it seems to me'.

(195) tornik'-em viγaca ako da me mgonia
Tornike-ERG someone.NOM s/he.praised and I seems.to.me
[rom manana-m icis [rusudani tu tamari]]
COMP Manana-ERG knows Rusudan-NOM or Tamar-NOM
'Tornike praised someone, and it seems to me that Manana knows whether (he praised) Rusudan or Tamar.'

Normally, long distance movement is very restricted in Georgian, Harris (1981), Erschler (2015), a property of the Georgian grammar that provides us with a wealth

[88] Two major Georgian poets.

of islands. However, this does not affect the grammaticality of respective Alt-sluices: they are invariably grammatical. This unifies Alt-sluices with regular sluices, which ameliorate island violations in Georgian, Erschler (2015).

(196) a. Complex NP constraint

mat	unda-t	rom	daikiraon	viγac	
they.ERG	want-PL	COMP	PRV-hire	someone.NOM	
vin=c	i-ci-s	ertert-i	k'avk'aziur-i	ena,	
who=REL	knows	some-NOM	Caucasian-NOM	language.NOM	
magram	ar	vici	svanur-i	tu	megrul-i
but	NEG	1SG-know	Svan-NOM	or	Mingrelian-NOM

'They want to hire someone who knows one of the Caucasian languages, but I don't know whether Svan or Mingrelian.' (Supine)

b.

sapo-m	tav-i	moik'la	viγac-is		
Sapho-ERG	self-NOM	killed	someone-GEN		
siq'varul-is=tvis	magram	ar	vici	paon-is=tvis	
love-GEN=for	but	NEG	I.know	Phaon-GEN=for	
tu	sopokles=tvis				
or	Sophocles.GEN=for				

'Sapho killed herself out of love to somebody, but I don't know whether (she did so) out of love to Phaon or to Sophocles.'

c. Coordinate structure constraint

tornik'e-m	da-p'at'iž-a	uča	da	viγac	sxva	
Tornike-ERG	PRV-invite-AOR.3SG	Ucha	and	someone.NOM	other	
magram	ar	vici	zurab-i	tu	gia	
but	NEG	I.know	Zurab-NOM	or	Gia.NOM	

'Tornike invited Ucha and someone else, but I don't know whether (he invited) Zurab or Gia.'

Adjunct constraint

d.

uča	kalak=ši	c'avida	sadac	misi	megobar-i	
Ucha	city=LOC	went.to	where	his	friend-NOM	
cxovrobs	magram	ar	vici	dato	tu	nik'o
lives	but	NEG	I.know	Dato	or	Niko

'Ucha went to the city where a friend of his lives, but I don't know whether Dato or Niko.'

d. uča c'avida q'vavilebis saq'idlad viγaca
Ucha went flowers.GEN for.buying some
gogo-s=tvis
girl-GEN=for
magram ar vici nino-s=tvis tu rusudan=tvis
but NEG I.know Nino-GEN=for or Rusudan=for
'Ucha went to buy flowers for some girl, but I don't know for Nino or for Rusudan.' (a non-finite purpose clause)

e. uča c'avida rom viγaca gogostvis q'vavileb-i
Ucha went COMP someone girl-GEN=for flowers-NOM
eq'ida magram ar vici ninos=tvis
bought but NEG I.know Nino-GEN=for
tu rusudan=tvis
or Rusudan.GEN=for
Idem (a finite purpose clause)

Besides Georgian (193b), other examples of languages that forbid Pol-sluicing but allow the other two types of sluicing are, for instance, Digor and Iron Ossetic. It was shown in Erschler (2014) that Alt-sluicing in Ossetic also exhibits all the properties considered here.

5.3. Relation between the 3 types of sluicing

A priori, different types of ellipsis in a given language do not need to be related in any way. This is spectacularly not the case for the varieties of sluicing under discussion. To repeat, the following implicational universal holds:

(a) **Pol ⇒ Alt**
If a language allows Pol-sluicing, it will allow Alt-sluicing.

(b) **Alt ⇒ wh**
If a language allows Alt-sluicing, it will also allow regular sluicing.

As of now, the universal has been verified on a sample of about 60 languages. They are listed in Table 5 below. The sample is neither genetically nor geographically balanced: all accessible languages were included.

A small questionnaire was used to gather these data. The speakers were provided with three sentences with complete embedded questions (i.e. ones where ellipsis was not applied) and were asked to translate them into their native language, and then variants with ellipsis were attempted – using schematic prompts in English or French, grammatical sentences with sluicing in Russian or Spanish, or, when attempts to get the desired response failed, constructed by myself on the basis of the unreduced sentences.

When the respective construction is grammatical in the native speaker's language, the ungrammaticality of English schematic prompts did not create significant difficulties. It should be added that a significant number of speakers consulted were professional linguists. Whenever possible, more sentences (with different types of sluices) were elicited.

Table 5 shows that languages break into four classes: Class I languages allow all the three types of sluicing, Class II languages, Pol-sluicing and wh-sluicing, Class III languages, only wh-sluicing, and Class IV languages, no sluicing at all.

Table 5. Types of generalized sluicing cross-linguistically

Language	Genetic Affiliation and Location	Pol-sluicing	Alt-sluicing	wh-sluicing
Class I				
Polish	Slavic, IE, Europe	✓	✓	✓
Russian	Slavic, IE, Europe	✓	✓	✓

Serbian	Slavic, IE, Europe	✓	✓	✓
Latvian	Baltic, IE, Europe	✓	✓	✓
Lithuanian	Baltic, IE, Europe	✓	✓	✓
Hebrew	Semitic, Afroasiatic, Israel	✓	✓	✓
Satmar Yiddish	Germanic, IE, US	✓	✓	✓
Hungarian	Uralic, Europe	✓	✓	✓
Romanian[89]	Romance, IE	✓	✓	✓
Tyvan	Turkic, South Siberia	✓	✓	✓
Yakut (Sakha)	Turkic, NE Siberia	✓	✓	✓
Turkish	Turkic, Turkey	✓	✓	✓
Noghay	Turkic, The North Caucasus	✓	✓	✓
Japanese	Isolate, Japan	✓	✓	✓
Lingala[90]	Bantu, Congo (Kinshasa)	✓	✓	✓
Spanish	Romance, IE, Spain	✓	✓	✓
German[91]	Germanic, IE	✓	✓	✓
Pokomchi	Mayan, Guatemala	✓	✓	✓
Bezhta	Northeast Caucasian, Russia	✓	✓	✓
Kunbarlang	Arnhem, Australia	✓	✓	✓
Moroccan Arabic	Semitic, Afroasiatic, Morocco	✓	✓	✓
Buli	Gur, Niger-Congo; Ghana	✓	✓	✓
Class II				
Hindi	Indoarian, IE, India	*	✓	✓
Persian	Iranian, IE, Iran	*	✓	✓
Ossetic	Iranian, IE, The Caucasus	*	✓	✓
Italian	Romance, IE, Italy	*	✓	✓
French	Romance, IE, France	*	✓	✓
Braz. Portuguese	Romance, IE, Brazil	*	✓	✓
Basque	Isolate, Spain	*	✓	✓
Slovenian	Slavic, IE	*	✓	✓
Albanian	Albanian, IE	*	✓	✓
Bulgarian	Slavic, IE	*?	✓	✓
Georgian	South Caucasian, The Caucasus	*	✓	✓
Svan	South Caucasian, The Caucasus	*	✓	✓
Kannada	Dravidian, South India	*	✓	✓
Syrian Arabic	Semitic, Afroasiatic, Syria	*	✓	✓

[89] Todorescu & Hoyt (2012) report that what is Pol-sluicing in our terms is grammatical in Romanian. Sentences that show non-wh-sluicing are reported to be somewhat degraded compared to those with wh-sluicing.

[90] Data from Miller (2014).

[91] For some speakers of German, Pol-sluicing is ungrammatical. In this chapter, I use data from those who find it acceptable. All the speakers of German I have consulted find Alt-sluicing and wh-sluicing grammatical.

Its'ari Dargwa	Northeast Caucasian, Russia	*	✓	✓
Samoan	Austronesian, Samoa	*	✓	✓
Class III				
English	Germanic, IE	*	*	✓
Dutch	Germanic, IE	*	*	✓
West Frisian	Germanic, IE	*	*	✓
Danish	Germanic, IE	*	*	✓
Swedish	Germanic, Europe	*	*	✓
Icelandic	Germanic, IE	*	*	✓
Finnish	Uralic, Finland	*	*	✓
Modern Greek	IE, Greek	*	*	✓
Wolof (adjuncts)		*	*	✓
Class IV				
Amharic	Semitic, Ethiopia	*	*	*
Chechen	NE Caucasian, The Caucasus	*	*	*
Lezgian	NE Caucasian, The Caucasus	*	*	*
Kalmyk	Mongolic, Russia	*	*	*
Degema	Niger-Congo, Nigeria	*	*	*
Twi/Akan	Kwa, Niger-Congo, Ghana	*	*	*
Igbo	Igboid, Niger-Congo, Nigeria	*	*	*
Kaingang	Gê, Brazil	*	*	*
Mandarin	Sino-Tibetan, China	*	*	*
Khmer	Austroasiatic, Cambodia	*	*	*
Wolof (arguments)	Atlantic, Niger-Congo, Senegal	*	*	*
Chatino	Oto-Manguean, Mexico	*	*	*
Cochabamba Quechua	Quechuan, Bolivia	*	*	*

Additionally, two more languages, Adyghe (Northwest Caucasian) and Vietnamese, can be added to either the first or the fourth group, depending on the analysis of the morphemes found in sluicing-like sentences: if they are treated as "particles" or complementizers, the languages will belong to the first class; otherwise, if they are verb-like entities, these languages should be assigned to the fourth class.

To illustrate the pictures obtained in the languages of each of the four groups, in addition to the Polish and German sentences in (180), repeated here as (197), which illustrate the situation in languages of the first group, consider data from Digor

Ossetic, which allows wh-sluicing and Alt-sluicing, but not Pol-sluicing, Greek, which only allows wh-sluicing, and Kaingang (Gê, Brazil), which does not allow any kind of reduced embedded questions.

(197) Polish (Stanisław Dunin-Horkawicz, p.c.)

a. Zosia coś ugotowała, ale nie wiem,
Zosia something she.cooked but NEG I.know
co.
what
'Zosia cooked something, but I don't know what.'

b. Zosia coś ugotowała, ale nie wiem,
Zosia something she.cooked but NEG I.know
(czy) ryż czy kasz-ę
whether rice whether porridge-ACC[92]
grzyczan-ą.
of.buckwheat-ACC
'Zosia cooked something, but I don't know whether (she cooked) rice or buckwheat.'

c. Zosia coś ugotowała, ale nie wiem,
Zosia something she.cooked but NEG I.know
czy ryż.
whether rice
'Zosia cooked something, but I don't know whether (she cooked) rice.'

[92] Glosses: ABL ablative; ACC accusative; ALL allative; ASP aspect; AUX auxiliary; COMP complementizer; DAT dative; ERG ergative; FOC focus marker; GEN genitive; IND indicative; INST instrumental; INT interrogative; NEG negation; NOM nominative; Q interrogative particle; REL relativizer; SM subject marker;

German

d. (Der) Hans hat jemandem geschmeichelt, aber ich
DEF Hans has someone.DAT flatter.PRTC but I
weiß nicht **wem**
know.PRS.1SG NEG who.DAT
'Hans flattered someone, but I don't know who.'

e. (Der) Hans hat jemandem geschmeichelt, aber ich
DEF Hans has someone.DAT flatter.PRTC but I
weiß nicht ob **(dem)** **Uwe**
know.PRS.1SG NEG Q DEF.DAT U.
oder **(dem)** **Jan**
or DEF.DAT J.
(~~der) Hans geschmeichelt hat~~.
'Hans flattered someone, but I don't know whether (it is) Uwe or Jan (that Hans flattered).'

f. ?(Der) Hans hat jemandem geschmeichelt,
DEF Hans has someone.DAT flatter.PRTC
aber ich weiß nicht ob **(dem)** **Uwe**
but I know.PRS.1SG NEG Q DEF.DAT U.
(~~der) Hans geschmeichelt hat~~.
'Hans flattered someone, but I don't know whether (it is) Uwe (that Hans flattered).'

(198) Digor Ossetic

a. Sluicing
mɐdinɐ fid balχɐdta ɐma čidɐr iskodta
Madina meat bought and something made
fal nɐ=zonun či
but NEG=I.know what
'Madina bought meat and cooked something, but I don't know what.'

b. Alt-sluicing
soslan alan-i ɐma=ma kedɐr ɐrbaχudta
S Alan-OBL and=more someone.OBL invited
fal nɐ=zonun χetɐg-i ɐvi kermen-i
but NEG=I.know Khetag-OBL Q.or Kermen-OBL
'Soslan invited Alan and someone else, but I don't know whether (he invited) Khetag or Kermen.'

c. Embedded polar question: No sluicing
soslan kɐmɐdɐr ɐnɹɐlmɐ kɐsuj fal nɐ=zonun
S. someone.ALL waiting looks but NEG=I.know
mɐdinɐ-mɐ *(ɐnɹɐlmɐ kɐsuj)
Madina-ALL waiting looks
'Soslan is waiting for somebody, but I don't know whether he is waiting for Madina.'

(199) Modern Greek

a. i ʝinaika mu maʝirepse kati alla
DEF wife my cooked something but
ðen ksero ti
NEG I.know what
'My wife cooked something, but I don't know what.'

b. Embedded alternative question: No sluicing
i ʝinaika mu maʝirepse kati alla
DEF wife my cooked something but
ðen ksero an *(maʝirepse) ridʒi i fasolia
NEG I.know whether cooked rice or beans
'My wife cooked something, but I don't know whether she cooked rice or beans.'

c. Embedded polar question: No sluicing
i ʝinaika mu maʝirepse kati alla
DEF wife my cooked something but
ðen ksero an *(maʝirepse) ridʒi
NEG I.know whether cooked rice
'My wife cooked something, but I don't know whether she cooked rice.'

(200) Kaingang[93] (Gê, Brazil; Márcia Nascimento, p.c.)

a. Embedded wh-question
mỹnh fi tỹ nén ũ nénh hãra inh pi
mother she SM something cook but I NEG
fi ne *(nénhja) kinhra nĩ
she what cook ASP know ASP
'Mother cooked something but I don't know what she cooked.'

[93] The Kaingang data are given in the standard orthography. The macron denotes nazalization.

b. Embedded alternative question

mȳnh	fi	tóg	nén	ū	nénh	hāra	inh	pi
mother	she	SM	something		cook	but	I	NEG
kinhra nī	aroj	ketūrūkȳ		regro	*(nénhja)		ti	
know ASP	rice	or		beans	cook	ASP	Q	

'Mother cooked something but I don't know whether she cooked rice or beans.'

c. Embedded polar question

mȳnh	fi	tóg	nén	ū	nénh	hāra	inh	pi
mother	she	SM	something		cook	but	I	NEG
kinhra nī	aroj							
know ASP	rice							

'Mother cooked something but I don't know whether she cooked rice.'

Sluices that strand a bare 'whether' in the sentence-final position are, however, ungrammatical even in languages that allow Pol-sluicing, as illustrated for German and Polish in (201). Their ungrammaticality in English was first noticed in Ross (1969/2012).

(201) a. German

*Es	ist	möglich	daß	Paul	getanzt	hat	
it	is	possible	COMP	Paul	danced	has	
aber	ich	weiß	nicht	**ob**	~~er~~	~~getanzt~~	~~hat~~
but	I	know	NEG	whether	he	danced	has

'It is possible that Paul danced but I don't know whether (he danced)' (intended)

b. Polish

*Być	może	Janek	tańczył	s	kimś
be	may	Janek	danced	with	somebody
ale	nie	wiem	**czy**	~~Janek~~	~~tańczył~~
but	NEG	I.know	whether	Janek	danced

'Perhaps Janek danced with somebody, but I don't know whether (he danced).' (intended)

Plausibly, this is due to a prosodic requirement for 'whether'-like elements that prevents them from appearing utterance-finally. An alternative explanation could be that 'whether' needs to associate with an overt focus, which is missing from the sentences in in (201). However, in coordinations with wh-questions[94], stranded 'whether' sometimes fares quite well, as illustrated in (202). In such examples, 'whether' still does not associate with an overt focus, but it is no longer utterance-final.

(202) German

a. Es ist möglich daß Paul getanzt hat
it is possible COMP Paul danced has
aber ich weiß nicht **ob** **und** **mit** **wem**
but I know NEG whether and with whom
~~er getanzt hat~~
he danced has
'It is possible that Paul danced but I don't know whether and with whom (he danced)'

b. Ich bin nicht sicher **ob** **und** **wann**
I am not sure whether and when
der Wolf das Rottkäpchen getroffen hat
the wolf the Red.riding.hood met has
'I'm not sure whether and when the wolf met Red Riding Hood.'

Polish

c. Być może Janek tańczył s kimś
be may Janek danced with somebody
ale nie wiem **czy** **i** **s** **kim**
but NEG I.know whether and with whom
~~Janek tańczył~~
'Perhaps Janek danced with somebody, but I don't know whether and with whom (he danced).'

[94] I owe the idea to consider such coordinations to Andreas Haida.

Remarkably, acceptability of such examples decreases if the order of a wh-sluice and a Pol-sluice is reversed, as shown by the contrast between (202c) and (203).

(203) Polish

?Być	może	jednorożce	gdzieś	żyją
be	may	unicorns	somewhere	live
ale	nie	wiem **gdzie**	i	**czy**
but	NEG	I.know where	and	whether

'Perhaps unicorns live somewhere, but I don't know where and whether (they live somewhere at all).'

How solid is the empirical evidence in favor of the proposed universal? Although, if taken to be representative of the genetic and areal diversity of the world's languages, the sample in Table 5 is admittedly very small, it still allows to argue that the observed universal is not spurious.

Indeed, it could have been the case that an implication of the form "X implies Y" holds just because the phenomenon Y is extremely common. For instance, "A language has sluicing if it has VP ellipsis" is in all likelihood a correct generalization, but an entirely spurious one because of the extreme typological rarity of the VPE. In our case, however, we see that quite a substantial number of diverse languages lack wh-sluicing, so the fact that the existence of Alt-sluicing implies wh-sluicing is unlikely to be epiphenomenal. Likewise, a substantial number of languages lack Alt-sluicing, so the fact that existence of Pol-sluicing implies existence of Alt-sluicing cannot be spurious either.

It is worth noting that fairly closely related language can exhibit different sluicing patterns: for instance, Dutch only allows wh-sluicing, while German also allows Alt-sluicing, and, for some speakers, even Pol-sluicing; Moroccan Arabic allows

all the three varieties of sluicing, and Syrian Arabic, only wh-sluicing and Alt-sluicing, and so on.

For German and Dutch, one natural conjecture might be that the differences between them lie in the richness of case morphology: morphology of Dutch is rather impoverished compared to that of German. However, if we bring Icelandic into the picture, the connection with morphology turns out to be not tenable: with case morphology even richer than in German, Icelandic still only allows wh-sluicing.

5.4. How to make sense of these facts?

The persistent parallels between generalized sluicing and regular sluicing that we have seen in Sections 5.2.1 and 5.2.2 suggest that the treatment of these phenomena should be essentially the same. Namely, the arguments developed for treating of sluicing as result of ellipsis, Ross (1969/2012), Merchant (2001), and the ensuing literature, are applicable to the two new varieties of generalized sluicing introduced here. Accordingly, generalized sluicing is a result of fronting of the remnant-to-be to some position high in the clause and feature-triggered deletion of the rest.

Languages may vary in what projection is involved in (regular) sluicing, that is, the projection whose specifier hosts the remnant and whose complement gets deleted. At least the interrogative CP and the FocP have appeared in analyses, see, e.g., Merchant (2001) for the former and Toosarvandani (2008) for the latter. Potentially, other projections might be implicated in yet unanalyzed languages.

Potentially, the differences in grammaticality between the three varieties of sluicing, and the universal we found, may result either from the varying availability of structures that feed the deletion, or on the variation in deletion licensing. As I am going to argue, the observed implication indeed has to do with deletion licensing.

5.4.1 Failure to front as an obstacle to sluicing

Indeed, in some languages fronting is impossible in embedded questions that would feed Pol-sluicing or Alt-sluicing. For instance, by default, polar questions in Finnish are verb-initial:

(204) ajoi=ko Tarja illalla kaupunkiin?
went=Q Tarja night.LOC[95] city.ALL
'Did Tarja go to the city tonight?' (based on Holmberg (2013))

Still, in matrix polar questions the focus may be fronted.

(205) Finnish
Tarja=ko ajoi illalla kaupunkiin?
Tarja=Q went night.LOC city.ALL
'Is it Tarja who went to the city tonight?'

In embedded polar questions focus fronting becomes impossible[96] (206a). Thus, the structure that would feed sluicing in polar questions is ungrammatical, and, if we

[95] The case nomenclature in the Finnish glosses is simplified.
[96] When adjuncts rather than arguments are fronted, such sentences improve somewhat, Seppo Kittilä, p.c.

expect that a feeding grammatical structure must exist in order for ellipsis to proceed, we would predict that ellipsis will not be grammatical either (206b).

(206) Finnish

a. *En tiedä Tarja=ko ajoi illalla kaupunkiin
NEG.1SG know Tarja=Q went night.LOC city.ALL
'I don't know whether it's Tarja who went to the city.' (intended)

b. * (…) en tiedä Tarja=ko
NEG.1SG know Tarja=Q
'(…) I don't know whether (it's) Tarja.' (intended)

It should be noted, however, that non-existence of a construction that would feed ellipsis does not necessarily make the latter impossible, see the discussion in Merchant (2003) and Arregi (2010), which provides even a stronger motivation to discuss the licensing of deletion in the narrow sense. I am leaving aside proposals that no movement at all occurs in sluices, for instance, that of Abe (2015).

5.4.2 Failure to elide

Lack of fronting is definitely unable to explain for the entire extent of cross-linguistic variation: there are languages where fronting of would-be remnants is possible, while some varieties of generalized sluicing are still ungrammatical. This, for instance, is the case in Georgian and Ossetic as shown in (207).

The Georgian sentence in (207a) shows that the focus of an embedded polar question, the direct object *γom-s* 'grits' in this particular case, may be fronted in Georgian. Georgian has basic SOV order, see e.g. Borise & Polinsky (2018) and

references there, so the direct object must indeed be fronted in (207a). However, Pol-sluicing is still impossible in this sentence (207b). The same effect is illustrated in (207 c-d) for the adjunct *cxen-it* 'with a horse'. In the Iron Ossetic sentence in (207e) the direct object *fəččən* 'meat pie' is fronted – again, the basic word order in Ossetic is SOV, Erschler (2012a). As (207f) shows, Pol-sluicing is impossible here.

(207) Georgian

a. ar vici [ɣom-s tu amzadebs manana]
NEG I.know grits-DAT Q.COMP cooks Manana
'I don't know whether it's grits that Manana cooks/is cooking.'

b. *manana raɣaca-s amzadebs magram
Manana something-DAT cooks but
ar vici [ɣom-s tu] /[tu ɣoms]
NEG I.know grits-DAT Q.COMP
'Manana is cooking something, but I don't know whether (she is cooking) grits.'

c. ar vici [cxen-it tu čadis uča]
NEG I.know horse-INS Q.COMP goes Ucha
'I don't know whether Ucha is riding a horse.' (lit. 'goes with a horse')

d. *uča rit čadis magram ar vici
Ucha what.INS goes but NEG I.know
<tu> cxen-it <tu>
Q.COMP horse-INS Q.COMP
'Ucha is riding something, but I don't know whether (he's riding) a horse.' (intended)

Iron Ossetic

e. nɐ=jɐ qʷədə kɐnən [fəččən škodta mɐdinɐ]
NEG=it thought I.do meat.pie s/he.did Madina
'I don't remember whether it's a meat pie that Madina made.'

f. *mɐdinɐ sədɐr škodta fɐlɐ nɐ=jɐ qʷədə
Madina something s/he.did but NEG=it thought
kɐnən fəččən ~~škodta~~
I.do meat.pie s/he.did
'Madina made something but I don't remember whether (she made) a meat pie.' (intended)

Accordingly, we are bound to conclude that it is the deletion licensing that is ultimately responsible for the observed universal.

5.4.3 Role of embedding in sluicing

Ellipsis in questions is possible in a variety of environments. However, the universal is valid only for embedded questions. In this section, I describe possible environments for sluicing and discuss the reasons why the universal does not hold for non-embedded questions.

At least three instantiations of what looks like sluicing and generalized sluicing are known: **FRAGMENT QUESTIONS** (also often called **ROOT SLUICES**), (208a-c); **EMBEDDED FRAGMENT QUESTIONS** (208d-e), and parts of **SPLIT QUESTIONS** (the latter only serve as environment for generalized sluices), (208g-h). In this chapter, I will only discuss embedded fragment questions (as was done originally in Ross 1969/2012, and unlike Lasnik 2001 and Ginzburg & Sag 2000: 321). Unlike fragment answers, fragment questions, except wh-fragments, have received relatively little attention in the literature.

(208) Root sluices

a. Who*?* b. Rice or beans? c. Rice*?*

Embedded sluices

Hebrew

d. rina bišla mašehu aval ani lo jodea ma
Rina cooked something but I NEG know what
'Rina cooked something but I don't know what.'

e. rina medaberet ejzo safa zara
Rina speaks some language foreign
aval ani lo jodea (im) jevanit o carfatit
but I NEG know Q Greek or French
'Rina speaks some foreign language, but I don't know whether (she speaks) Greek or French.'

f. rina medaberet ejzo safa balkanit
Rina speaks some language Balkanian
aval ani lo jodea im jevanit
but I NEG know Q Greek
'Rina speaks some Balkanian language, but I don't know whether (she speaks) Greek.'

Split questions

g. Who broke this vase, **you or the cat**?

h. What have you cooked, **rice**?

English and Dutch allow fragment Y/N and alternative questions as root clauses or parts of split questions, but disallow to embed them.

(209) English

a. rice or beans? b. rice*?*

Dutch

c. rijst of bonen? d. rijst*?*

Like embedded sluices, these fragment questions cannot originate in clefts. One piece of evidence that shows this has to do with modification by 'even': it is possible in fragment questions, but not in clefts:

(210) English

a. rice or beans? b. rice?

Dutch

A:	Ik	heb	alles	op(gegeten)	B:	(*Is	het)	zelf	rijst?
	I	have	all	eaten.up		is	it	even	rice
	'I have eaten everything.'					'Even rice?'			

But even root fragment questions are ungrammatical in some languages:

(211) Wolof (argument questions)

a. A: amnalu samba di lɛkk
there.exists.something Samba AUX.3SG eats
B: lan *(la)?
what is
A: 'Samba is eating something.' B: 'What is it? /*What?'

b. B: čɛ:b *(la)?
rice is
'Is it rice? / *Rice?'

c. B: čɛ:b *(la) wala arikɔ (la)?
rice is or beans is
'Is it rice or beans? / *Rice or beans?'

On the other hand, split questions are grammatical even in Wolof:

(212) Wolof

a. kan mo: ñɛw samba?
who CLEFT.3SG arrive Samba
'Who arrived, Samba?'

b. lan la lɛkk čɛ:b wala ñɛbɛ?
what CLEFT.3SG eat rice or bean
'What did he eat, rice or beans?'

While the behavior of split questions is a puzzle that I have to leave for future research, the difference between matrix and embedded sluices can be captured in the

following manner. To be felicitous, fragment questions need to be licensed by preceding discourse. I propose that a fragment question needs to carry an operator that is anaphoric to the preceding discourse, and that it is this operator that carries the ellipsis licensing feature.

As opposed to the sensitivity to whether or not the question is embedded[97], the nature of the embedding verb seems to be of lesser importance. For instance, deletion is NOT sensitive to the difference between selected and unselected questions in the sense of Adger & Quer (2001) and earlier literature. Unselected questions are ones embedded under predicates that may embed assertions as well, such as 'tell' or 'know', the sluicing matrix verb *par excellence*. Sentences in (213) are from examples (9) and (10) of Adger and Quer.

(213) a. Embedded question
The bartender told me who was drunk/whether I was drunk.

b. Embedded assertion
The bartender told me that/∅ I was drunk.

It is easy to see that unselected embedded questions may undergo sluicing:

(214) a. Tell me why.

[97] Even for wh-questions in English, there is a difference between embedded and non-embedded questions. As an informal survey showed, for some speakers of English (of both British and US varieties) embedded questions with *how come* are degraded, with or without ellipsis.

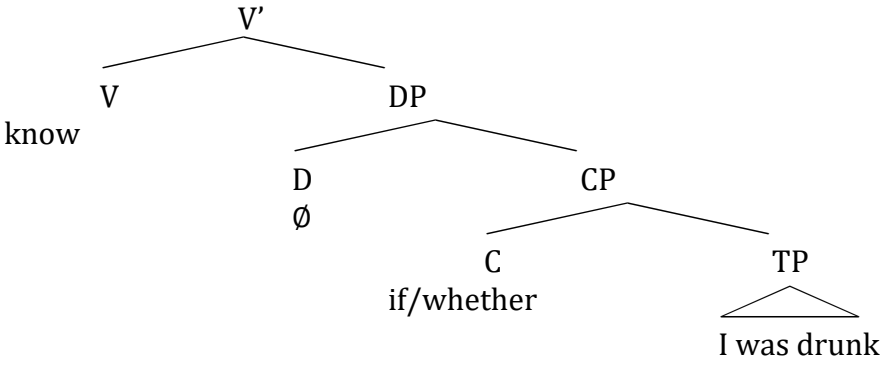
b. Dutch

Saskia	bracht	iets	maar	ze	vertelde	mij
Saskia	brought	something	but	she	told	me
niet	wat					
not	what					

'Saskia brought something, but she didn't tell me what.'

Based on subtle contrasts in English, Catalan, and Basque, Adger & Quer (2001) propose that unselected embedded questions are headed by a D head (215).

(215)



The fact that the possibility of sluicing in a given embedded question is independent of whether it is selected or not, the locus of the licensing feature must be lower than the mediating D head in (215).

To summarize the discussion of this section, (generalized) sluicing is sensitive to whether or not the interrogative clause is embedded, but not to the nature of the selecting verb. It remains to be seen whether the varieties of fragment questions discussed in this section are amenable to a uniform treatment[98]. Moreover, nothing in the structure of questions in a given language allows us to predict whether different varieties of generalized sluicing will be grammatical there.

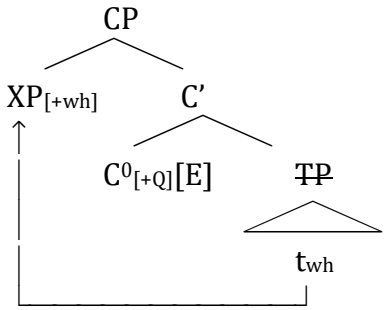
[98] Cross-linguistically, there occur differences between matrix sluices and embedded sluices: for instance, in Japanese, the former, but not the latter are able to repair island violations, Hasegawa (2008).

5.5. Feature-triggered deletion

In this section I recall the overall approach to ellipsis licensing which I am going to use in my analysis, as it was laid out in Chapter 2. The key technical ingredients are using a dedicated feature that licenses ellipsis, and that the licensing may be mediated by agreement.

In the accounts of Lobeck (1995) and Merchant (2001) the licensing feature was placed on the head whose complement is to be deleted. Accordingly, in (216), where the application of this approach to standard wh-sluicing is illustrated, the remnant moves into Spec CP, whereas the feature [E] triggers deletion of the complement of C.

(216)

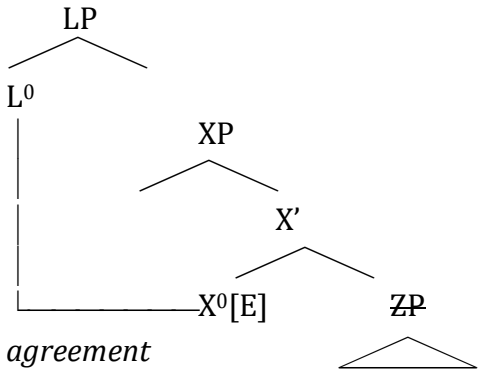


Built into this approach is the assumption that the licensing feature, whatever its precise content, is optional; that is to say, the heads that are able to carry such features come in two varieties – with and without the ellipsis-triggering feature merged.

In the tree in (216) the feature is located on the sister of the material to be elided. As we will see in Section 5.7.2, this condition is not necessarily fulfilled in

alternative questions. However, as Aelbrecht (2010) has shown, deletion is sometimes licensed by a head which is somewhat higher in the clause than the ellipsis site. Her proposal is that the licensing feature is then located low, that is, on the head whose complement is to be deleted, but the low head must agree with the higher licensing head in order for the deletion to proceed.

(217)



Her motivation for replacing licensing directly by the head whose complement is deleted by agreement comes from situations when the licenser is non-adjacent to the ellipsis site. The basic illustrations are given in (218). In (218a), the licenser is *should*, and in (218b), *mag* 'may'. They are both separated from the respective ellipsis sites by extra material.

(218) a. I hadn't been thinking about that. -- Well, you **should** have been ~~[thinking about that]~~. Aelbrecht (2010: 92)

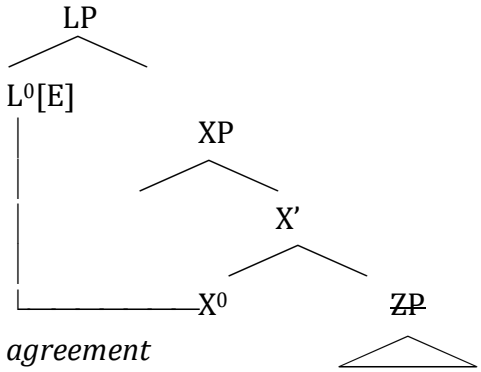
b. Dutch

Gisteren	mocht	Tyl	volgende	week	zijn	nieuwe	auto	
yesterday	could	Tyl	next	week	his	new	car	
gaan	halen,	en	vandaag	[ModP	**mag**	hij	[TP	pas
go.INF	retrieve.INF	and	today		may	he		only
over	een	maand	[TP [T'	~~zijn~~	~~nieuwe~~	~~auto~~	~~gaan~~	~~halen]~~
in	a	month		his	new	car	go.INF	retrieve.INF

'Yesterday Tyl was allowed to go get his new car next week and today he's only allowed to go get it in a month.' Aelbrecht (2010)

The original proposal of Aelbrecht's involves a non-standard technical ingredient: probing upwards. To repeat, I propose to do away with this and situate the feature on the licensing head and make it agree with the head whose complement is to be deleted (219).

(219)



Now, it will be the category of the head X^0 that will be part of the information encoded in E. I take the E-feature to be uninterpretable, and the matching interpretable feature to be the category of X^0 (or, equivalently, of the XP it projects). I assume that this agreement operation satisfies some locality conditions, at the very least that it cannot cross a CP boundary; and a relativized minimality condition, namely, that the agreement will proceed with the closest head of the given type.

To flesh out this approach, we need to determine the precise contents of the licensing feature, the nature of the head(s) that can host it, and the nature of the head(s) whose complements are elided under sluicing. I turn to these questions in the next section.

5.6. Deriving the universal

Once the general tenets of the feature-based approach to ellipsis are adopted, the explanation for the hierarchy one might pursue can be either syntactic or semantic in nature. In this section, I will discuss both possibilities, and opt for a syntactic explantation.

By a **SYNTACTIC EXPLANATION** I mean one where the observed effects derive from the variation in the locus of the E-feature. The semantic condition(s) that the E-feature verifies will be assumed to be constant across questions and languages.

On a **SEMANTIC EXPLANATION**, the contents of the feature, on the other hand, will be allowed to systematically vary cross-linguistically. The licensing feature will be sensitive to whether the embedded question is a polar question, an alternative question, or a wh-question. The variation in the locus of E-feature will not be assumed relevant.

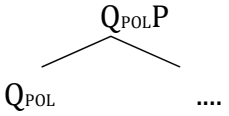
A priori, a semantic explanation seems more attractive: it is easier to entertain the idea that the semantics of the relevant classes of questions is cross-linguistically uniform rather than the idea that it is so for their syntax. However, as we will see, it is rather difficult to come up with a purely semantic condition that will divide questions in the way relevant for sluicing licensing. This makes me opt for the syntactic explanation.

5.6.1 A syntactic explanation of the universal: a hierarchy of interrogative heads

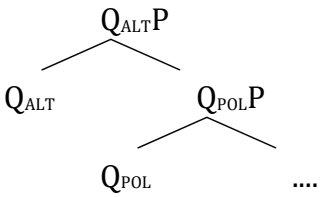
I will first lay out the analysis I propose and then discuss the evidence in its favor and the challenges it faces. I will discuss the syntax of polar and alternative questions in more detail in Section 5.7 below.

Suppose that separate types of interrogative complementizers exist for different types of questions: Q_{WH} for wh-questions, Q_{ALT} for alternative questions, and Q_{POL} for polar questions. Furthermore, in polar questions, only Q_{POL} is merged (220a). In alternative questions, Q_{ALT} is merged on top of Q_{POL} (220b), and in wh-questions, Q_{WH} is merged on top of them both (220c).

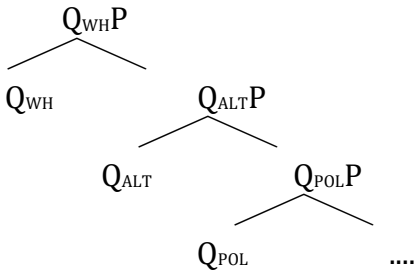
(220) a.



b.



c.



Now, I propose that languages can vary in the height of the location of the licensing feature: in a given language, it can only be hosted by a given type of Q. I will argue that this allows us to derive the universal.

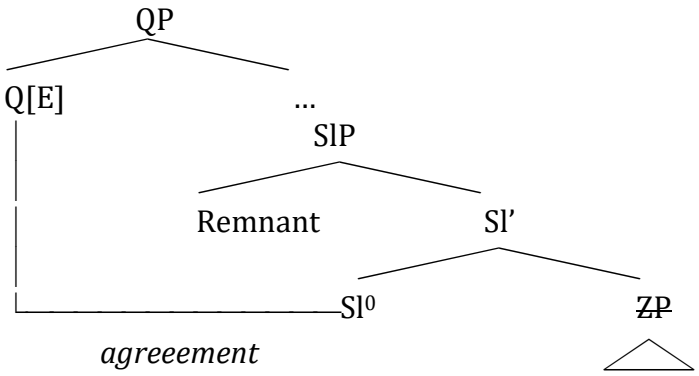
For the sake of simplicity, assume that in a given language all would-be remnants move into the same position in the left periphery. Let SlP denote the respective projection. Furthermore, assume that the sequence of Q's is situated higher in the clause than the SlP.

Under this approach, the content of the E-feature will always be the same. Namely, let the E-feature be specified to agree with Sl^0, and check the semantic identity condition (which goes back to Merchant (2001)) discussed below in 5.6.2.1.

Now, if the E-feature is hosted in the given language by Q_{POL}, deletion in all the three types of question will be licensed, because Q_{POL} is merged in all the three types of questions. If it is hosted by Q_{ALT}, deletion will be only possible in alternative questions and wh-questions. Finally, if it is located on Q_{WH}, only the regular sluicing will be possible, because Q_{WH} is only merged in wh-questions. This is precisely the implicational hierarchy we are striving to derive.

This argument is independent of the nature of the SlP, as far as it is situated lower than the sequence of Q's (221). I will address the semantic import of the Qs later in this section.

(221)



Thus, positing the hierarchy of heads (220) allows us to derive the implicational universal.

While a systematic exploration of semantics of the proposed heads is well beyond the scope of the current work, I will very briefly sketch here a possible approach to their semantics. I assume that Q_{POL} marks its complement as a question; Q_{ALT} performs the role of an alternative generator, while Q_{WH} contributes quantificational semantics in wh-questions. Insofar as generation of alternatives is involved in the calculation of semantics for polar questions, I assume that it is achieved by a separate mechanism than in alternative and wh-questions.

Another possible approach to the semantics of the proposed Q heads would be to place the interrogative operator above the sequence of Q's making them semantically vacuous.

Let us now turn to a possible alternative analysis, one that places the onus of explanation on the semantics of the licensing feature.

5.6.2 A semantic explanation of the universal: The Contents of the E-feature

On a purely semantic approach, the licensing feature must track the type of embedded question. Accordingly, the challenge is to provide semantic conditions that would distinguish polar questions, alternative questions, and wh-questions.

On this view, the semantic part of the E feature has two subcomponents, E_1 and E_2. The first component, E_1, is responsible for a semantic identity between the antecedent and the ellipsis site. The second one, E_2, controls for the type of the complement where ellipsis is to proceed. It is the makeup of this second subfeature that explains the universal on this approach.

5.6.2.1 Identity with the antecedent

As an identity condition to hold between the antecedent and the sluice, as in the proposal of Merchant (2001) and the ensuing literature, E-givenness condition should be imposed on the deleted material.

Recall that E-givennes is defined in the following manner, Merchant (2001: 14, 31): an expression φ is E-given, if it has a salient antecedent α, and modulo ∃-type shifting[99], the F-closures of φ and α entail each other. The F-closure of an expression φ is the result of replacement of all focus-marked parts of φ by ∃-bound variables of appropriate type, modulo ∃-type shifting.

[99] See Merchant (2001: 14). ∃-type shifting is an operation that raises expressions to type <t> and existentially binds unfilled arguments.

As has been argued recently, E-givenness might need to be replaced by a more sophisticated condition, see the discussion in AnderBois (2010) and Barros (2014). Their arguments are applicable to non-wh-sluicing as well, but here I have used the traditional condition for the sake of simplicity: the issue of how to correctly formulate the identity condition is orthogonal to our present purposes. Likewise, I do not consider application of the approach to fragment licensing based on the notion of the question under discussion, Weir (2014): cross-linguistic differences between the three types of questions do not seem to be able to be captured this way.

5.6.2.2 Conditions on the embedded question

In this section, I will show that the standard Hamblin-Karttunen semantics of a question does not divide embedded questions into the classes relevant for sluicing licensing.

A natural first move is to make the feature compute the standard Hamblin-Karttunen semantics of the complement. Informally speaking, the Hamblin-Karrtunen semantics of a question identifies it with the set of propositions that can serve as answers to the question, for a formal definition see e.g. the discussion in Dayal (2016).

Under this view, polar questions are indistinguishable from alternative questions with the second alternative "or not". For a polar question, schematically, '*Is it the case that p?*', where *p* is a proposition, the propositions will be *p* and its negation. For an alternative question, schematically '*Is it the case that p or Is it not the case that*

p?' the set of alternatives will be the same. Likewise, a D-linked wh-question is indistinguishable from an alternative question, compare (222a) and (222b).

(222) a. Which of the two pencils do you want?

b. Do you want the red or the blue pencil?

However, sluicing treats Alt-questions and D-linked wh-questions as different. If a language allows Alt-sluicing, but disallows Pol-sluicing, it will allow sluicing in "or not" alternative questions, as illustrated in (223) for Ossetic and Georgian. See also Huddleston (1994) for a discussion of some relevant English facts[100].

(223) Georgian

a. *uča rit čadis magram ar vici
Ucha what.INS goes but NEG I.know
<tu> cxen-it <tu>
Q.COMP horse-INS Q.COMP
'Ucha is riding something, but I don't know whether (he's riding) a horse.' (intended)

b. uča rit čadis magram ar vici
Ucha what.INS goes but NEG I.know
cxen-it tu **ara**
horse-INS Q.or NEG
'Ucha is riding something, but I don't know whether (he's riding) a horse or not.'

[100] Furthermore, the difference that polar question and alternative question show with respect to sluicing, provides a new cross-linguistic argument in an old discussion (which mostly used English facts) about whether or not polar questions are reducible to alternative questions, see e.g. Bolinger (1978).

Iron Ossetic

c. *mɐdinɐ sədɐr škodta fɐlɐ nɐ=jɐ qʷədə
Madina something s/he.did but NEG=it thought
kɐnən fəččən
I.do meat.pie
'Madina made something but I don't remember whether (she made) a meat pie.' (intended)

d. mɐdinɐ sədɐr škodta fɐlɐ nɐ=jɐ qʷədə
Madina something s/he.did but NEG=it thought
kɐnən fəččən **ɐvi** **nɐ**
I.do meat.pie Q.or NEG
'Madina made something but I don't remember whether (she made) a meat pie.'

Likewise, if a language allows wh-sluicing, but disallows Alt-sluicing, it will still allow sluicing in D-linked questions, as the English data in (224) illustrate.

(224) Context: Somebody broke the window. I reasonably suspect that it was Andy, Barry, or Chris.

a. *One of the boys broke the window, but I don't know whether Andy, Barry, or Chris.

b. One of the boys broke the window, but I don't know which one / which of the three.

Accordingly, even if it is possible to derive the universal from purely semantic considerations, a more complex approach than the standard Hamblin-Karttunen semantics is necessary to describe the relevant classes of questions. I leave this issue for further research.

5.7. Syntax of questions

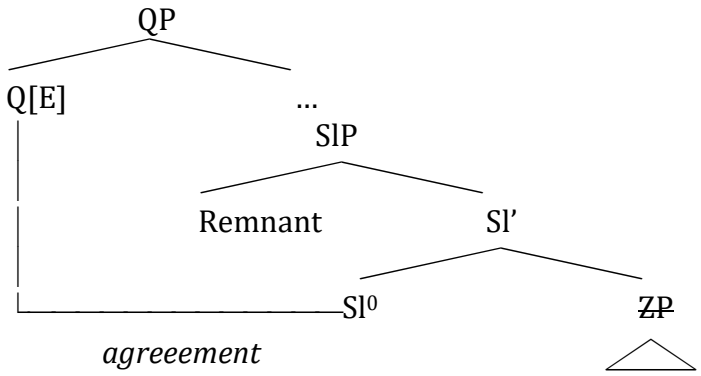
To fully implement the analysis of sluicing, we need to investigate the syntax of alternative and polar questions. Admittedly, we cannot directly verify that the syntax of questions, and of question embedding, is uniform across the sample, let alone across all the languages of the world – the task of checking this is unfortunately unrealistic. I will restrict the discussion here to case studies.

The discussion of syntax will follow the order of complexity of the structures: I will first treat polar questions and then proceed to discuss alternative questions.

5.7.1 Sluicing in polar questions

For sluicing in polar questions, I adopt Merchant's (2001) and Van Craenenbroeck & Lipták's (2006, 2013) theory (almost) wholesale: the focus of the question is fronted, and then the rest is deleted. The same idea has been recently implemented for Russian by Shlomina (2016). In a given language, the landing site need not be the specifier of $C_Q P$ – it well could be lower in the structure. This is fully compatible with the agreement-based approach to ellipsis adopted here, with deletion licensed by agreement between the interrogative complementizer and the head whose specifier is the sluicing remnant, as was shown in (221) repeated here as (225).

(225)



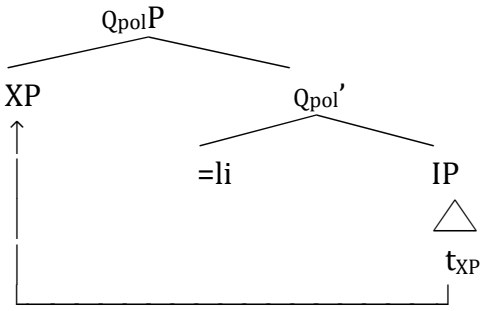
To work out such an analysis in a specific case, let us return to Pol-sluicing in Russian, whose properties we examined in Section 5.2.1. For the analysis of the Russian interrogative 2P clitic *li* as a complementizer, and the fronting as movement into its specifier, see Franks & King (2000). Note that Merchant's (2001: 62) Sluicing-COMP generalization is violated here. The latter claims that no non-operator material (in other words, nothing except wh-phrases) may appear in the Comp of a sluice. However, it is not clear how this generalization should be extended to generalized sluicing in the first place. Moreover, it is not infrequently violated even in the case of wh-sluicing, see, for instance, examples in Van Craenenbroeck (2010) and Marušič et al. (2015).

(226) a. Non-reduced interrogative

ja	ne=znaju	sofokl=li	napisal	elektru
I	NEG=I.now	Sophocles=Q	wrote	Electra

'I don't know whether it's Sophocles who wrote *Electra*.'

b.



c. A sluicing example

kakoj-to	drevnij	grek	napisal	elektru
some	ancient	Greek	wrote	Electra
no ja	ne	znaju	sofokl=li	
but I	NEG	I.know	Sophocles=Q	

'Some ancient Greek wrote Electra, but I don't know whether Sophocles (wrote it).'

A natural question is whether Pol-sluicing is not a subvariety of the embedded stripping, i.e. stripping that proceeds in embedded questions[101]. The parallel between gapping and stripping is obvious. In both ellipsis varieties, the remnant is a single XP lacking interrogative force of its own that must be fronted before deletion, see analyses of embedded stripping (aka embedded fragments) in Merchant (2003), Wurmbrand (2013), Temmerman (2013), and Weir (2014). However, cross-linguistic distribution of Pol-sluicing and embedded non-interrogative stripping is not the same. In Georgian, for instance, as we have seen in Section 5.2.2, Pol-sluicing is ungrammatical. Embedded stripping, on the other hand, is fully possible in Georgian, see a detailed discussion of the latter construction in Erschler (2015), where it is

[101] This is what is assumed by Konietzko (2016).

compared with wh-sluicing in Georgian. In (227), the remnant is 'Manana', which is part of an embedded declarative.

(227) A: viɣaca tevzs amzadebs
someone fish.DAT cooks
B: vpikrob [rom manana ~~tevzs amzadebs~~]
I.think COMP Manana fish.DAT cooks
'A: Someone is cooking fish. B: I think that Manana (is doing so).'

Consequently, although the syntax of stripping and Pol-sluicing might be fairly similar, presence or absence of an interrogative complementizer considerably influences the syntax of ellipsis.

In terms of the approach adopted here, Pol-sluicing and stripping are licensed by different E-features. The E-feature responsible for sluicing may only be hosted by an interrogative complementizer. I must leave a systematic exploration of stripping long these lines to future research.

5.7.2 Sluicing in alternative questions

5.7.2.1 Derivation of alternative questions

I will only discuss here genuine alternative questions. "Disjunctive polar question" readings of a question with disjunction, illustrated in (228), (the term of Biezma & Rawlins (2012)), dealt with in much of the literature on alternative and polar questions, are not available for Alt-sluices. The reasons for this are unknown to me at present, in the rest of the chapter I will only deal with true alternative questions.

(228) Do you belong to a tribe or a clan? [from the US visa application form]

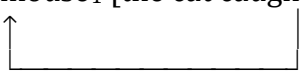
A plausible analysis of alternative questions, Han & Romero (2004), (see also Gračanin-Yüksek (2016a, 2016b) and Uegaki (2014a, 2014b) for more case studies), proposes that they are obtained by disjunction of polar questions and ellipsis in the second disjunct, as schematically shown in (229). This is part of a large family of proposals invoking ellipsis to analyze a variety of syntactic phenomena: see, for instance, Merchant (2004) for fragment answers, Pérez-Jiménez & Moreno-Quibén (2012) for free exceptives; Ott (2014) for contrastive left dislocation, and Sailor & Thoms (2014) for non-constituent coordination. Another component of Han & Romero's proposal, which goes back to Larson (1985) and Schwarz (1999) is that an interrogative operator undergoes movement in alternative questions. This seems to be orthogonal to our purposes.

(229) [The cat caught a bird] or [~~[the cat caught]~~ a mouse$_1$]?

For the sake of concreteness, I assume that the disjuncts in an alternative question are TPs and the interrogative complementizers discussed in 5.6.1 dominate the disjunction. Nothing changes substantially if they are actually somewhat smaller, say, vPs.

Together with Arregi (2010), I assume that the remnant, that is, the focus of a polar question, undergoes fronting prior to deletion.

(230) [The cat caught a bird] or [a mouse$_1$ ~~[the cat caught t$_1$]~~]?



To the best of my knowledge, the nature and location of the feature that would license this deletion has not been discussed in the literature so far. Deletion in the second disjunct of an alternative question appears to be universally available, even in languages that lack any kind of sluicing. As (231) illustrates, Wolof allows alternative questions with (ostensible) disjunction of a clause and a DP, *ñɛbɛ* 'bean' in (231a), but it disallows Alt-sluicing. In (231b), it is impossible to drop the copula *la* in the coordinands.

(231) Wolof

a. ndax čɛ:b lej lɛkk wala ñɛbɛ?
Q rice AUX eat or bean
'Does he eat rice or beans?'

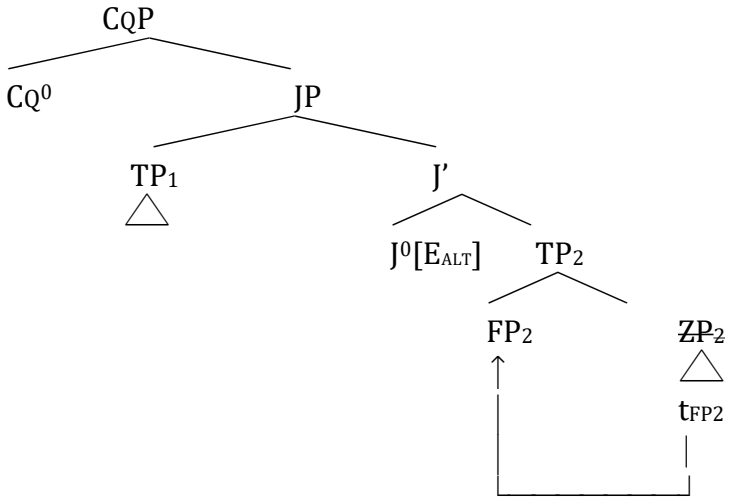
b. amnalu samba di lɛkk xamu
there.exists.something Samba AUX eat know.NEG.1SG
ma ndax čɛ:b *(la) wala arikɔ (la)
I Q rice is or bean is
'Samba is eating something, but I don't know whether it is rice or beans.'

I conclude that formation of alternative questions is a separate process unrelated to Alt-sluicing. Provisionally, I propose that the feature that triggers, E_{ALT}, is hosted by the (interrogative) 'or'.

For the sake of concreteness, and to be consistent with the assumptions of Chapter 3, I use the asymmetric X-bar structure for coordination. Using the notation JP for the disjunction phrase, I follow Den Dikken (2006). I ignore here the possible

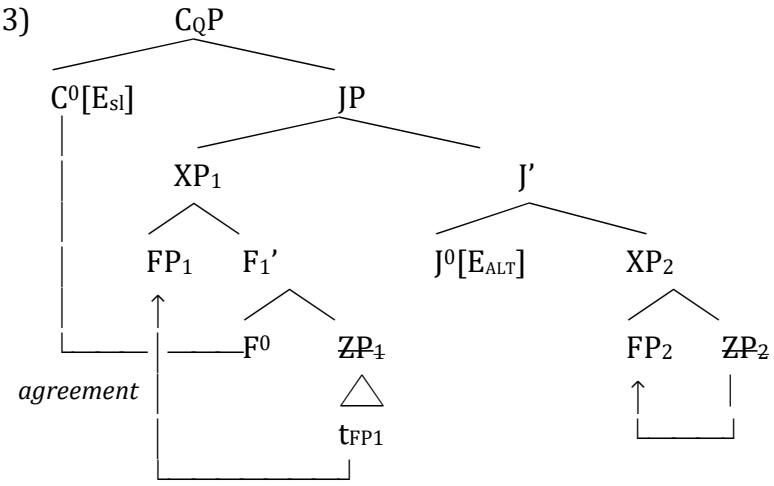
finer structure of the CQP that was proposed in Section 5.6.1, as it is irrelevant for the purposes of the present discussion.

(232)



The structure of an Alt-sluice then has to be as shown in (233). Deletion in the second conjunct is triggered by a feature on the disjunction J^0, whereas the deletion in the first conjunct is triggered by the sluicing feature E_{sl} hosted on the interrogative C. FP_i stand in (233) for the foci, i.e. the (ostensible) disjuncts of the resulting sluice *FP_1 or FP_2*.

(233)



This picture, however, leaves an option for ellipsis to only proceed in the first conjunct (I thank Kyle Johnson for pointing out this problem to me). This would have occurred if the E_{ALT} feature were absent from the numeration on which the derivation is based. This option is not attested, as (234) illustrates: only ellipsis in the first disjunct is attempted there, stranding the focus *ris* 'rice'. Therefore, it needs to be ruled out somehow.

(234) Russian

*maša	što-to	svarila		
Masha	something	boiled		
no	ja	ne=znaju	ris	~~maša svarila~~ t_{rice}
but	I	NEG=know	rice	Masha boiled
ili	maša	svarila	boby	
or	Masha	boiled	beans	

'Masha cooked something, but I don't know whether (Masha cooked) rice or Masha cooked beans.'

To rule out (234) it is enough to assume that fronting of the foci must proceed in both disjuncts. Observe that, in order for deletion in the first disjunct to proceed, the focus,

ris 'rice' in this case, must front. Ungrammaticality of (234) is due to the fact that the focus of the second disjunct, *boby* 'beans' did not front. If it fronts, the result will be grammatical, as (235) shows.

(235) Russian
maša što-to svarila
Masha something boiled
no ja ne=znaju ris ~~maša svarila~~ t_{rice}
but I NEG=know rice Masha boiled
ili boby maša svarila t_{beans}
or beans Masha boiled
'Masha cooked something, but I don't know whether (Masha cooked) rice or Masha cooked beans.'

Finally, it should be mentioned that it might be the case that, in some languages, alternative questions indeed involve disjunction of the respective DPs rather than of larger constituents. This has been proposed for Sinhala by Slade (2011), and maybe also obtains in Tamil (Jyoti Iyer, p.c.) and Yoruba (Anna Howell, p.c.). As of now, I do not have data on any variety of sluicing in either of these languages, but, if it occurs, it can be straightforwardly accounted for following the scheme we used for wh-sluicing and Pol-sluicing.

5.8. Conclusions

On the descriptive level, my findings show that a phenomenon closely resembling sluicing in non-wh-questions is relatively common cross-linguistically, contrary to what is suggested by the English facts. On the other hand, my typological data show that the classical sluicing is less wide-spread than it might be expected to be on the

basis of data from more commonly studied languages: it is absent from quite a few languages of Africa, the Caucasus, East Asia, and Americas.

On the theoretical level, I have argued that examination of the case of sluicing shows that typological hierarchies can be an outcome of the structure of features in syntax. Furthermore, the discussion in this chapter shows that the fronting of the remnant in generalized sluicing and the deletion are not necessarily triggered by the same feature, contrary to was proposed in the work of Van Craenenbroeck and Lipták (2006, 2013).

Additionally, existence of non-trivial cross-linguistic variation among languages of the world in the realm of generalized sluicing militates against "non-structural" approaches to ellipsis, such as advocated in Culicover & Jackendoff (2005), Ginzburg & Sag (2000), and Sag & Nykiel (2011): if the only thing at stake were the semantic recoverability of the deleted material, we would not have expected to observe any variation: indeed, if it is possible to recover the deleted material in some languages, there is no reason to expect that this cannot occur in other languages.

As part of a bigger picture, the findings presented here show that a search for Greenbergian universals can go hand in hand with formal linguistic analysis. Moreover, phenomena well studied within the formal syntactic tradition but largely disregarded by typologists, as was illustrated here by sluicing, can provide material for fruitful typological research.

REFERENCES

Abbott, Barbara. 1976. Right Node Raising as a test for constituenthood. *Linguistic Inquiry* 7: 639–642.

Abe, Jun. 2015. *The in-situ approach to sluicing.* Amsterdam: John Benjamins.

Abe, Jun. 2016. Make short answers shorter: Support for the in situ approach. *Syntax* 19: 223-255.

Abe, Jun & Hoshi, Hiroto. 1997. Gapping and P-Stranding. *Journal of East Asian Linguistics* 6(1): 101–136.

Abe, Jun & Christopher Tancredi. 2013. *Non-Constituent Deaccenting and Deletion: A Phase-Based Approach*. Manuscript, Tohoku Gakuin University and Keio University.

Abeillé, Anna, Bîlbîie, Gabriela, F. Mouret. 2011. A Romance perspective on gapping constructions. In H. Boas & F. Gonzalvez Garcia, *Romance in Construction Grammar*. Amsterdam: John Benjamins.

Abels, Klaus. 2005. Remarks on Grimshaw's clausal typology. In *Proceedings of Sinn und Bedeutung 9*, ed. Emar Maier, Corien Bary, and Janneke Huitink, 1–15.

Ackema, Peter & Szendrői, Kriszta. 2002. Determiner sharing as an instance of dependent ellipsis. *The Journal of Comparative Germanic Linguistics* 5: 3-34.

Adger, David & Quer, Josep. 2001 The syntax and semantics of Unselected Embedded Questions. *Language* 77:107-133.

Aelbrecht, Lobke. 2007. Movement and ellipsis: An analysis of gapping. Handout from a talk at the 2nd Student Conference on Formal Linguistics. Adam Mickiewicz University, Poznań, April 21-22, 2007. http://www.gist.ugent.be/file/21

Aelbrecht, Lobke. 2010. *The syntactic licensing of ellipsis*. Amsterdam/New York: John Benjamins.

Aelbrecht, Lobke. 2012. Modal complement ellipsis: VP ellipsis in Dutch? In Peter Ackema, Rhona Alcorn, Caroline Heycock, Dany Jaspers, Jeroen van Craenenbroeck and Guido Vanden Wyngaerd (eds.) *Comparative Germanic Syntax: The state of the art*. 1–34. Amsterdam/Philadelphia: Benjamins.

Agafonova, Irina. 2011. On syntax, alternative semantics, and computation in coordination. Michigan State University PhD dissertation.

Agbayani, Brian, and Zoerner, Edward (2004). Gapping, pseudogapping and sideward movement. *Studia Linguistica* 58(3): 185–211.

Ai, Ruixi. 2014. Topic-comment structure, focus movement, and gapping formation. *Linguistic Inquiry* 45(1): 125-145.

Almeida, Diogo & Yoshida, Masaya. 2007. A problem for the preposition stranding generalization. *Linguistic Inquiry* 38: 349-362.

AnderBois, Scott. 2011. Issues and alternatives. PhD Thesis, UC Santa Cruz.

AnderBois, Scott. 2014. The semantics of sluicing: Beyond truth-conditions. *Language* 90. 887–926.

Aoun, Joseph. and Elabbas Benmamoun. 1999. Gapping, PF Merger, and patterns of partial agreement. In *Fragments: Studies in ellipsis and gapping*, ed. Shalom Lappin and Elabbas Benmamoun, 170 - 187. Oxford: Oxford University Press.

Arregi, Karlos. 2010. Ellipsis in split questions. *Natural Language & Linguistic Theory* 28. 539-592. https://doi.org/10.1007/s11049-010-9097-x

Arregi, Karlos & Andrew Nevins. 2012. *Morphotactics: Basque auxiliaries and the structure of spellout.* Dordrecht: Springer.

Arsenijević, Boban. 2009. Clausal complementation as relativization. *Lingua* 119(1): 39-50.

Authier, Jean-Marc. 2011. A movement analysis of French Modal Ellipsis. *Probus 23(2).* 175-216.

Bachrach, Asaf & Ronnie Katzir. 2007. Spelling out QR. In Proceedings of Sinn und Bedeutung 11, ed. E. Puig-Waldmüller, 63–75. Barcelona: Universitat Pompeu Fabra.

Bachrach, Asaf & Ronnie Katzir. 2009. Right node raising and delayed Spell-Out. In *InterPhases: Phase-theoretic investigations of linguistic interfaces*, ed. K. K. Grohmann. 283–316. Oxford: Oxford University Press.

Bailyn, John Frederik. 2012. *The syntax of Russian*. Cambridge: Cambridge University Press.

Baker, Mark C. 2005. *Lexical categories: Verbs, nouns and adjectives*. Cambridge: Cambridge University Press.

Baker, Mark C. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.

Baker, Mark C. 2015. *Case: Its principles and parameters*. Cambridge: Cambridge University Press.

Baltin, Mark. 2003. The interaction of ellipsis and binding: implications for the sequencing of Principle A. *Natural Language & Linguistic Theory* 21: 215-246.

Baltin, Mark. 2012. Deletion versus pro-Forms: An overly simplistic dichotomy. *Natural Language & Linguistic Theory* 30: 381-423.

Barbiers, Sjef. 2000. The right-periphery in SOV-languages: English and Dutch. In P. Svenonius (Ed.), *The derivation of VO and OV*. 181-218. Amsterdam: John Benjamins Publishing Company.

Barbiers, Sjef. 2002. Remnants stranding and the theory of movement. In Alexiadou, Artemis et al. (eds.) *Dimensions of movement: From features to remnants*. 47-67. Amsterdam: Benjamins

Barros, Matthew. 2014. *Sluicing and identity in ellipsis*. Rutgers University dissertation.

Barros, Matt & Vicente, Luis. 2011. Right Node Raising requires both ellipsis and multidomination. *University of Pennsylvania Working Papers in Linguistics*: Vol. 3: Iss. 1, Article 15.

Barros, Matthew; Elliott, Patrick David & Thoms, Gary. 2014. There is no island repair. Ms.

Bartos, Huba. 2001. Sound-form non-insertion and the direction of ellipsis. *Acta Linguistica Hungarica* 48. 3-24.

Beck, Sigrid & Kim, Shin Sook. 2006. Intervention effects in alternative questions. *Journal of Comparative Germanic Linguistics* 9: 165–208.

Béjar, Susana & Rezac, Milan. 2009. Cyclic Agree. *Linguistic Inquiry* 40(1): 35-73.

Bhatt, Rajesh & Keine, Stefan. 2017. Long-distance agreement. In: M. Everaert & H. van Riemsdijk (eds.), *The Companion to Syntax*, 2nd Edition. Blackwell-Wiley.

Biezma, María & Kyle Rawlins. 2012. Responding to alternative and polar questions. *Linguistics & Philosophy* 35. 361–406.

Bîlbîie, Gabriella. 2011. Grammaire des constructions elliptiques: une étude comparative des phrases sans verbe en roumain et en français. Ph. D., Université Paris Diderot.

Bjorkman, Bronwyn & Zeijlstra, Hedde. 2014. Upward Agree is superior. Ms, University of Toronto; Göttingen University. lingbuzz/002350

Boeder, Winfried. 2005. The South Caucasian languages. *Lingua* 115(1-2): 5-89.

Bolinger, Dwight. 1978. Yes-No Questions are not Alternative Questions. In Hiż, Henry (ed.) *Questions*. 87-106. Dordrecht/Boston: Reidel.

Boone, Enrico. 2014. *The syntax and licensing of gapping and fragments*. Leiden University PhD dissertation. Utrecht: LOT.

Borise, Lena & Polinsky, Maria. 2018. Focus without movement: syntax-prosody interface in Georgian. *Proceedings of North-East Linguistic Society (NELS) 48*.

Bošković, Željko. 1998. Multiple wh-fronting and economy of derivation. In *Proceedings of the West Coast Conference on Formal Linguistics 16*. Stanford: CSLI, pp. 49-63

Bošković, Željko. 2007. On the locality and notivation of Move and Agree: An even more minimal theory. *Linguistic Inquiry* 38(4): 589-644.

Bošković, Željko. 2009. More on the no-DP analysis of article-less languages. *Studia Linguistica* 63: 187-203.

Bošković, Željko. 2014. Now I'm a phase, Now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45.1: 27-89.

Browne, Wayles. 1972. Conjoined question words and the limitation on English surface structure. *Linguistic Inquiry* 3(2): 223-226.

Camacho, José. 2003. *The structure of coordination: Conjunction and agreement phenomena in Spanish and other languages.* Dordrecht: Kluwer Academic Press.

Carrera Hernández, Ana. 2007. Gapping as a syntactic dependency. *Lingua* 117: 2106–2133.

Centeno, Naiara. 2011. Gapping and determiner sharing in Spanish. University of the Basque Country Doctoral Dissertation. Vitoria-Gasteiz: University of the Basque Country.

Chaves, Rui. 2014. On the disunity of Right-Node Raising phenomena: extraposition, ellipsis, and deletion. *Language* 90. 834–886. https://doi.org/10.1353/lan.2014.0081

Chomsky, Noam. 1981. *Lectures on government and binding: The Pisa lectures*. Dordrecht: Foris.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Martin, Roger David Michaels, Juan Uriagereka & Samuel Jay Keyser (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–155. Cambridge, MA: The MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In Michael J. Kenstowicz (ed.), *Ken Hale: A life in language*, 1–52. Cambridge: MIT Press.

Chung, Sandra. 2006. Sluicing and the lexicon: The point of no return. In *Annual Meeting of the Berkeley Linguistics Society (BLS) 31*, eds. Rebecca T. Cover and Yuni Kim, 73–91. Berkeley: Berkeley Linguistics Society.

Chung, Sandra. 2013. Syntactic identity in sluicing: How much and why. *Linguistic Inquiry* 44(1): 1–44.

Chung, Sandra, William A. Ladusaw, and James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3: 239–282.

Chung, Sandra, William A. Ladusaw, and James McCloskey. 2010. Sluicing(:) Between structure and inference. In *Representing language: Essays in honor of Judith Aissen*, ed. Line Mikkelsen, Eric Potsdam, and Rodrigo Gutiérrez-Bravo. Santa Cruz, Calif.: Linguistics Research Center Publications.

Citko, Barbara. 2015. The gapping that could Δ. In *Formal approaches to Slavic linguistics: The first Berkeley meeting 2014*, ed. M. Szajbel-Keck, R. Burns & D. Kavitskaya, 36–55. Ann Arbor, MI: Michigan Slavic Publications.

Citko, Barbara. 2017. Right node raising. In Martin Everaert & Henk van Riemsdijk (eds.), *The Wiley Blackwell companion to syntax*, ed. 2, 1–33. New York: Wiley. https://doi.org/10.1002/9781118358733.wbsyncom020

Citko, Barbara. 2018. On the Relationship between Forward and Backward Gapping. *Syntax* 21(1): 1–36.

Coppock, Elizabeth. 2001. Gapping: In defense of ellipsis. In: Mary Andronis, Christopher Ball, Heidi Elston & Sylvain Neuvel, eds. CLS 37: The Main Session, 138-148.

Corver, Norbert & Van Koppen, Marjo. 2009. Let's focus on noun phrase ellipsis. Groninger Arbeiten zur Germanistischen Linguistiek (GAGL) 48: 3–26.

Corver, Norbert & Van Koppen, Marjo. 2011. NP-ellipsis with adjectival remnants: a micro-comparative perspective. *Natural Language & Linguistic Theory* 29: 371–421.

Craenenbroeck, Jeroen van. 2010a. *The syntax of ellipsis: Evidence from Dutch dialects*. New York: Oxford University Press.

Craenenbroeck, Jeroen van. 2010b. Invisible Last Resort. A note on clefts as the underlying source for sluicing. *Lingua* 120:7, 1714–1726

Craenenbroeck, Jeroen van. 2012. How do you sluice when there is more than one CP? In: J. Merchant & A. Simpson (eds.), *Sluicing. Cross-Linguistic Perspectives*, 40–67. Oxford: Oxford University Press.

Craenenbroeck, Jeroen van and Lipták, Anikó. 2005. On the Interaction between Verb Movement and Ellipsis: New Evidence from Hungarian. In: *Proceedings of the 26th West Coast Conference on Formal Linguistics*, ed. Charles B. Chang and Hannah J. Haynie, 138-146. Somerville, MA: Cascadilla Proceeding Project.

Craenenbroeck, Jeroen van & Lipták, Anikó. 2006. The cross-linguistic syntax of sluicing: evidence from Hungarian relatives. *Syntax* 9(3): 248-274.

Craenenbroeck, Jeroen van & Merchant, Jason. 2013. Ellipsis phenomena. In. M. den Dikken (ed.), *The Cambridge Handbook of Generative Syntax*, 701–745. Cambridge: Cambridge University Press.

Sailor, Craig and Gary Thoms. 2014. On the non-existence of non-constituent coordination and non-constituent ellipsis. In *Proceedings of WCCFL 31*, edited by Robert LaBarge.

Culicover, Peter, and Ray Jackendoff. 2005. *Simpler syntax*. New York: Oxford University Press.

Dagnac, Anne. 2016. Gapping also needs vP-coordination: An argument from French NPI licensing. *The Linguistic Review* 33(4): 503–530

Dayal, Veneeta. 2016. *Questions*. Oxford: Oxford University Press.

de Cuba, Carlos and Jonathan E. MacDonald. 2013. Referentiality in Spanish CPs. In: *Information structure and agreement*. Ed. by Victoria Camacho-Taboada et al. 117–140Amsterdam: John Benjamins.

Depiante, Mrcela. 2000. The syntax of deep and surface anaphora: A study of null complement anaphora and stripping/bare argument ellipsis. UConn PhD Thesis.

Dikken, Marcel den. 2006. Either-float and the syntax of co-or-dination. *Natural Language & Linguistic Theory* 24: 689-749. https://doi.org/10.1007/s11049-005-2503-0

Di Sciullo, Anna Maria & Edwin Williams. 1987. *On the definition of word.* Cambridge, MA: MIT Press.

Embick, David. 2010. *Localism versus globalism in morphology and phonology*. Cambridge, MA: MIT Press.

Embick, David & Rolf Noyer. 2001. Movement after syntax. *Linguistic Inquiry* 23: 555-595. https://doi.org/10.1162/002438901753373005

Epstein, Samuel & T. Daniel Seely. 2006. *Derivations in minimalism*. Cambridge: Cambridge University Press.

Erschler, David. 2010. Modularity and 2P clitics: Arguments from Digor Ossetic. Online proceedings of IATL 25. http://linguistics.huji.ac.il/IATL/25/TOC.html

Erschler, David. 2012a. Suspended Affixation and the structure of syntax-morphology interface. *Studia Linguistica Hungarica* 59. 153–175. https://doi.org/10.1556/ALing.59.2012.1-2.7

Erschler, David. 2012b. From preverbal focus to preverbal "left periphery": On diachronic and typological aspects of the Ossetic clause structure. *Lingua* 122. 673–699. https://doi.org/10.1016/j.lingua.2012.01.009

Erschler, David. 2014. Sluicing and the location of CP in Ossetic. In: Cohen, Evan (ed.) The Proceedings of the 28th Conference of the Israeli Association for Theoretical Linguistics, MITWPL 68.

Erschler, David. 2015. Embedded questions and sluicing in Georgian and Svan. *Languages of the Caucasus* 1: 38-74. http://escholarship.org/uc/item/64s9p3tk

Erschler, David. 2017. Typology of sluicing in wh- and non-wh questions. In Kantarovich, Jessica; Truong, Tran and Xheria, Orest (eds.) Proceedings of CLS 52. 187-202.

Erschler, David. 2018. Suspended affixation as morpheme ellipsis: Evidence from alternative questions in Ossetic. *Glossa: a journal of general linguistics*, 3(1), 12. https://www.glossa-journal.org/articles/10.5334/gjgl.501/

Erschler, David. to appear. Ossetic. In Haig, Geoffrey & Khan, Geoffrey. (eds.) *The languages and linguistics of Western Asia: An areal perspective*. Berlin: Mouton de Gruyter.

Erschler, David & Volk, Vitaly. 2011. On negation, negative concord, and negative imperatives in Digor Ossetic. In Haig, Geoffrey; Karimi, Simin; Korn, Agnes, and Samvelian, Pollet. (eds.) *Topics in Iranian Linguistics*. Beiträge zur Iranistik. Bd. 34. Wiesbaden: Reichert. 135-152.

Erteschik-Shir, Nomi, Lena Ibnbari, and Sharon Taube. 2013. Missing objects as topic drop. *Lingua* 136: 145-169.

Esipova, Masha. 2017. Contrast and distributivity in the semantics of alternation. In Lamont, Andrew & Katerina Tetzloff (eds.), *Proceedings of NELS 47*, Vol. 1, pp. 309--322. Amherst, MA: GLSA.

Farudi, Annahita. 2013. Gapping in Farsi: A crosslinguistic investigation. Amherst, MA: University of Massachusetts dissertation.

Fernández-Sánchez, Javier. 2016. Embedded gaps as embedded fragment answers. Paper presented at *Ellipsis across Borders*, Sarajevo.

Franks, Steven & Tracy Holloway King. 2000. *A Handbook of Slavic clitics*. Oxford: Oxford University Press.

Frazier, Lyn, and Charles Clifton, Jr. 2006. Ellipsis and discourse coherence. *Linguistics & Philosophy* 29:315–346.

Frazier, Lyn, and Charles Clifton, Jr. 2010. Imperfect ellipsis: Antecedents beyond syntax? *Syntax* 13(4), 279-297.

Gengel, Kirsten. 2013. *Pseudogapping and ellipsis*. Oxford: OUP.

George, Benjamin. 2011. Question embedding and the semantics of answers. UCLA PhD Thesis.

Giannakidou, Anastasia, 2006. N-words and negative concord. In *the Blackwell Companion to Syntax*, edited by Martin Everaert et al. Volume III: chapter 45: 327-391.

Ginzburg, Jonathan. 1994. An Update Semantics for dialogue. In Harry Bunt, Reinhard Muskens & Gerrit Rentier (eds.), *Proceedings of the 1st International Workshop on Computational Semantics.* Tilberg, The Netherlands.

Ginzburg, Jonathan, and Ivan A. Sag. 2000. *Interrogative investigations*. Stanford, Calif.: CSLI Publications.

Gleitman, Lila. 1965. Coordinating conjunctions in English. *Language* 41(2): 260-293.

Goldberg, Lotus. 2005. Verb-Stranding VP Ellipsis: A Cross-Linguistic Study. McGill University PhD Thesis.

Gračanin-Yüksek, Martina. 2007. About sharing. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge.

Gračanin-Yüksek, Martina. 2013. Linearizing multidominance structures. In *Challenges to linearization*, ed. Theresa Biberauer & Ian Roberts, 269–294. Berlin: Mouton de Gruyter.

Gračanin-Yüksek, Martina. 2016a. Size matters: The syntax of disjunctive questions. *Linguistic Inquiry* 47: 283-305. https://doi.org/10.1162/LING_a_00211

Gračanin-Yüksek, Martina. 2016b. Alternative questions in Turkish. *Dilbilim Arastirmalari* 2016/1: 39-68. https://doi.org/10.18492/dad.98860

Grebenyova, Lydia. 2006. Multiple interrogatives: Syntax, semantics, and learnability. University of Maryland PhD dissertation.

Grebenyova, Lydia. 2012. *Syntax, semantics and acquisition of multiple interrogatives*. Amsterdam: Benjamins.

Gribanova, Vera. 2013. Verb-stranding verb phrase ellipsis and the structure of the Russian verbal complex. *Natural Language & Linguistic Theory* 31(1): 91-136.

Gribanova, Vera. 2017. Head movement and ellipsis in the expression of Russian polarity focus. *Natural Language & Linguistic Theory*. 35(4): 1079–1121. DOI 10.1007/s11049-017-9361-4

Gribanova, Vera & Manetta, Emily. 2016. Ellipsis in wh-in-situ languages: deriving apparent sluicing in Hindi-Urdu and Uzbek. *Linguistic Inquiry* 47(4): 631-668.

Griffiths, James & Lipták, Anikó. 2014. Contrast and Island Sensitivity in Clausal Ellipsis. *Syntax* 17: 189–234.

Grinder, John & Postal, Paul. 1971. Missing antecedents. *Linguistic Inquiry* 2: 269–312.

Grosz, Patrick. 2015. Movement and agreement in Right-Node Raising Constructions. *Syntax* 18: 1-38.

Gunlogson, Christine. 2003. *True to form: Rising and falling declaratives as questions in English*. New York: Routledge.

Ha, Seungwan. 2008. Ellipsis, Right Node Raising, and Across-The-Board Movement. PhD Dissertation, Boston University.

Han, Chung-Hye, and Maribel Romero. 2004a. The syntax of whether/Q... or questions: Ellipsis combined with movement. *Natural Language & Linguistic Theory* 22. 527–564. https://doi.org/10.1023/B:NALA.0000027674.87552.71

Han, Chung-Hye, and Maribel Romero. 2004b. Disjunction, focus, and scope. *Linguistic Inquiry* 35: 179-217. https://doi.org/10.1162/002438904323019048

Hankamer, Jorge. 1979. *Deletion in coordinate structures*. New York: Garland.

Hankamer, Jorge & Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7: 391–428.

Harbour, Daniel. 2016. *Impossible persons*. Cambridge MA: MIT Press.

Hardt, Daniel. 1993. Verb phrase ellipsis: Form, meaning and processing. PhD dissertation, University of Pennsylvania, Philadelphia.

Harris, Alice. 1981. *Georgian syntax*. Cambridge: Cambridge University Press

Harris, Alice. 1985. *Diachronic syntax: The Kartvelian case*. Orlando FL :Academic Press.

Hasegawa, Nobuko. 2008. Wh-Movement in Japanese: Matrix Sluicing is different from Embedded Sluicing. *The proceedings of the Workshop on Altaic Formal Linguistics 4*: 63-74. MITWPL, MIT.

Haspelmath, Martin. 2007. Coordination. In Timothy Shopen (ed.), *Language typology and syntactic description*, *vol. 2: Complex constructions*, 1-51. Cambridge: Cambridge University Press.

Hartmann, Katharina. 2000. *Right Node Raising and Gapping*. Amsterdam & Philadelphia: Benjamins.

Hayashi, Makoto. 2010. An overview of the question–response system in Japanese. *Journal of Pragmatics* 42(10): 2685-2702.

Hermann, Elena. 1984. Untersuchungen zu einem Typ der Verbellipse in symmetrischen Konstruktionen - Gapping - im modernen Russischen. University of Leipzig Doctoral Dissertation.

Hermann, Elena. 1985. Zur verbal(phrasen)ellips im modernen Russischen. In: Meyer-Hermann, Reinhard & Rieser, Hannes (eds.) *Ellipsen ind fragmentarische Ausdruecke.* Bd. 1. 110-125 Tuebingen: Niemeyer

Herbeck, Peter. 2016. Controlling subject pronouns in Romance pro-drop languages. Colloquium talk at the Linguistics Department at the Ben Gurion University, Beer Sheva, March 29, 2016.

Houser, Michael John. 2010. The Syntax and Semantics of Do So Anaphora. PhD Dissertation, UC Berkeley.

Huddleston, Rodney. 1994. The contrast between interrogatives and questions. *Journal of Linguistics* 30: 411-439.

İnce, Atakan. 2009. Non-Wh phrases in sluicing in Turkish. University of Maryland Working Papers in Linguistics 16, ed. A. Omaki, I. Ortega-Santos, J. Sprouse and M. Wagers, pp. 1-22. College Park, MD: UMWPiL.

İnce, Atakan. 2012. Fragment answers and islands. *Syntax* 15: 181–214.

Jackendoff, Ray. 1971. Gapping and Related Rules. *Linguistic Inquiry* 2(1): 21-35.

Jayaseelan, K. A. 1990. Incomplete VP deletion and Gapping. *Linguistic Analysis* 20: 64–81.

Jiménez Juliá, Tomas. 1987. La construccion coordinativa en español. *Verba: Anuario galego de filoloxia* 14: 271-345.

Johanessen, Janne Bondi. 1998. *Coordination*. Oxford: Oxford University Press.

Johnson, Kyle. 2001. What VP ellipsis can do, what it can't, but not why. in *The handbook of contemporary syntactic theory,* Mark Baltin and Chris Collins (eds.) Blackwell Publishers, pp. 439-479.

Johnson, Kyle. 2009. Gapping is not (VP) Ellipsis. *Linguistic Inquiry* 40 (2): 289–328.

Johnson, Kyle. 2014. Gapping. Ms, UMass Amherst.

Jung, Wonsuk. 2016. The non-unity of gapping. University of the Basque Country Doctoral Dissertation. Vitoria-Gasteiz: University of the Basque Country.

Katz, Jerrold J. & Postal, Paul M. 1964. *An integrated theory of linguistic descriptions*. Cambridge Ma: MIT Press.

Kazenin, Konstantin. 2010. Russian Gapping: Against ATB. In: Zybatow, Gerghild et al. (eds.) *Formal Studies in Slavic Linguistics. Proceedings of FDSL 7.5*. Peter Lang. 85-100.

Kehler, Andrew. 2002. *Coherence, reference, and the theory of grammar*. Stanford: CSLI.

Kempson Ruth, Eleni Gregoromichelaki, Arash Eshgh & Julian Hough. 2015. Ellipsis in dynamic syntax. In: In Van Craenenbroeck, Jeroen & Temmerman, T. (editors), *The Oxford Handbook of Ellipsis*. Oxford University Press.

Kemspon, Ruth, Ronnie Cann, Eleni Gregoromichelaki & Stergios Chatzikyriakidis. 2016. Language as mechanisms for interaction. *Theoretical Linguistics* 42(3-4): 203-275.

King, Tracy Holloway. 1995. *Configuring Topic and Focus in Russian*. Standford: CLSI Publications.

É. Kiss, Katalin. 1998. Identificational Focus versus Information Focus. *Language* 74, 245-273.

É. Kiss, Katalin. 2002. *The Syntax of Hungarian*. Cambridge: Cambridge University Press.

É. Kiss, Katalin. 2012. Patterns of agreement with coordinate noun phrases in Hungarian. *Natural Language & Linguistic Theory* 30:1027–1060.

Kornfilt, Jaklin. 1997. *Turkish*. London: Routledge.

Koster, Jan. 1987. *Domains and dynasties: the radical autonomy of syntax*. Dordrecht: Forris.

Kotek, Hadas. *to appear*. *Composing questions*. Cambridge, Ma: MIT Press.

Kotek, Hadas & Matthew Barros. 2018. Multiple sluicing, scope, and superiority: Consequences for ellipsis identity. *Linguistic Inquiry* 49(4).

Kolokonte, Marina. 2008. Bare argument ellipsis and information structure. PhD Dissertation, Newcastle University.

Konietzko, Andreas. 2016. *Bare argument ellipsis and focus*. Amsterdam/Philadelphia: Benjamins.

Koutsoudas, Andreas. 1971. Gapping, Conjunction Reduction, and Coordinate Deletion. *Foundations of Language* 7: 337-386.

Kubota, Yusuke & Levine, Robert. 2015. Against ellipsis: Arguments for the direct licensing of 'non-canonical' coordinations. *Linguistics & Philosophy* 38:521--576.

Kubota, Yusuke & Levine, Robert. 2016. Gapping as hypothetical reasoning. *Natural Language & Linguistic Theory* 34:107--156.

Kuno, Susumu. 1976. Gapping: A functional analysis. *Linguistic Inquiry* 7(2): 300-318.

Kush, Dave. 2016. Notes on gapping in Hindi-Urdu: Conjunct size and focus-parallelism. *Linguistic Analysis* 40: 255-296.

Laka, Etziar. 1990. Negation in syntax. PhD dissertation, MIT.

Lakoff, Robin. 1968. *Abstract syntax and Latin complementation*. Cambridge MA: MIT Press.

Lakoff, George. 1974. Syntactic amalgams. Galy, M., R. Fox & A. Bruck (eds.), Papers from the 10th regional meeting of the Chicago Linguistic Society. 321-344.

Larson, Richard K. 1985. On the syntax of disjunction scope. *Natural Language & Linguistic Theory* 3: 217–164.

Landau, Idan. 2018. Missing objects in Hebrew: Argument ellipsis, not VP ellipsis. *Glossa: a journal of general linguistics*, 3(1), 76. DOI: http://doi.org/10.5334/gjgl.560

Lasnik, Howard. 1995. A note on pseudogapping. In Papers on Minimalist syntax, ed. by Rob Pensalfini and Hiroyuki Ura, 143–163. MIT Working Papers in Linguistics 27. Cambridge, MA: MIT, MIT Working Papers in Linguistics.

Lasnik, Howard. 1999. Pseudo-gapping puzzles. In *Fragments: Studies in ellipsis and gapping*, ed. by Shalom Lappin and Elabbas Benmamoun, 141–174. Oxford: Oxford University Press.

Lasnik, Howard. 2001. When can you save a structure by destroying it? In *Proceedings of the North Eastern Linguistic Society 31*, Kim, M. & Strauss, U. (eds.) 301-320: Amherst, MA: GLSA.

Lasnik, Howard & Mamoru Saito. 1991. Some curious correlations between Gapping and Heavy NP Shift. Ms, University of Connecticut.

Lin, Vivian. 2001. A way to undo A-movement. In WCCFL 20, ed.by Karine Megerdoomian and Leora Bar-el, 358–371. Somerville, MA: Cascadilla Press.

Lin, Vivian. 2002. Coordination and sharing at the interfaces. MIT Doctoral dissertation.

Lechner, Winfried. 2004. *Ellipsis in comparatives*. Berlin: Mouton de Gruyter.

Legate, Julie Ann. 2008. Morphological and abstract case. *Linguistic Inquiry* 39. 55–101. https://doi.org/10.1162/ling.2008.39.1.55

Leung, Tommi. 2014. The Preposition Stranding Generalization and conditions on sluicing: Evidence from Emirati Arabic. *Linguistic Inquiry* 45(2): 332-340.

Levin, Nancy. 1986. *Main Verb Ellipsis in Spoken English*. New York: Garland.

Lewis, Geoffrey L. 1967 *Turkish grammar*. Oxford: Oxford University Press.

Lobeck, Anne. 1993. Strong agreement and identification: Evidence from ellipsis in English. *Linguistics* 31: 777–811.

Lobeck, Anne. 1995. *Ellipsis: functional heads, licensing and identification*. Oxford: Oxford University Press.

López, Luis & Susanne Winkler. 2002. Variation at the syntax-semantics interface: Evidence from gapping. In: Schwabe, Kerstin & Susanne Winkler (eds.) *The Interfaces: Deriving and interpreting omitted structures*, 227-250. Amsterdam/Philadelphia: John Benjamins.

Maling 1972. On "Gapping and the Order of Constituents". *Linguistic Inquiry* 3(1): 101-108.

Martin, Roger. 1996. A minimalist theory of PRO and control. PhD dissertation. University of Connecticut, Storrs CT.

Marušič, Franc & Žaucer, Rok. 2013. A note on sluicing and island repair. In Steven Franks (ed.) *Annual Workshop on Formal Approaches to Slavic Linguistics, The Third Indiana Meeting 2012*, (Michigan Slavic Materials, vol. 59). Ann Arbor: Michigan Slavic Publications, 2013, pp. 176-189.

Marušič, Franc, Petra Mišmaš, Vesna Plesničar, Tina Razboršek & Tina Šuligoj. 2015. On a potential counter-example to Merchant's Sluicing-COMP generalization. lingbuzz/002805.

Maysak, Timur. 2014. *Agul'skie teksty 1900-1960-x godov*. [Aghul texts from the 1900s-1960s.] Moscow: Academia.

McCawley, James. 1982. Parentheticals and discontinuous constituents. *Linguistic Inquiry* 13:91–106.

McShane, Marjorie. 2005. *A Theory of ellipsis*. Oxford: Oxford University Press.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis.* Oxford: Oxford University Press.

Merchant, Jason. 2003. Remarks on stripping. Ms., U Chicago.

Merchant, Jason. 2005. Fragments and ellipsis. *Linguistics & Philosophy* 27: 661-738. https://doi.org/10.1007/s10988-005-7378-3

Merchant, Jason. 2006. Sluicing. In: Everaert, Martin, Riemsdijk, Henk van, Goedemans, Rob, and Hollebrandse, Bart. (eds.) *The Blackwell Companion to Syntax*. v. 4. Oxford et al.: Blackwell.

Merchant, Jason. 2008. Variable island repair under ellipsis. 2008. In Kyle Johnson (ed.), *Topics in ellipsis*, 132-153. Cambridge University Press: Cambridge.

Merchant, Jason. 2010. Three kinds of ellipsis: Syntactic, semantic, pragmatic? In Francois Recanati, IIsidora Stojanovic & Neftali Villanueva (eds.), *Context-Dependence, Perspective, and Relativity*. 141-192. Berlin: Mouton de Gruyter.

Merchant, Jason. 2013a. Diagnosing ellipsis. In Lisa Lai-Shen Cheng and Nobert Corver (eds.), *Diagnosing syntax*, 537-542. Oxford University Press: Oxford.

Merchant, Jason. 2013b. Voice and ellipsis. *Linguistic Inquiry* 44(1): 77–108.

Merchant, Jason. (to appear) Ellipsis: A survey of analytical approaches. 2016. Ms., University of Chicago. For Jeroen van Craenenbroeck and Tanja Temmerman (eds.), *Handbook of ellipsis*. Oxford: Oxford University Press.

Merchant, Jason and Simpson, Andrew (eds.). 2012. *Sluicing: Cross-linguistic perspectives.* Oxford: Oxford University Press.

Munn, Alan. 1993. *Topics in the syntax and semantics of coordinate structures.* College Park, MD: University of Maryland dissertation.

Neeleman, Ad & Van de Koot, Hans. 2002. Configuration matrix. *Linguistic Inquiry* 33(4): 529-574.

Neijt, Anneke. 1979. *Gapping*. Dordrecht: Forris.

Nevins, Andrew. 2008. Sluicing ≠ Stripping: Evidence from P-Stranding. Handout of a talk at MSCL3.

Noyer, Rolf. 1997. *Features, positions and affixes in autonomous morphological structure*. New York: Garland Publishing.

Nunes, Jairo. 2004. *Linearization of chains and sideward movement*. Cambridge MA: The MIT Press.

Ogihara, Toshiyuki & Sharvit, Yael. 2012. Embedded tenses. In R. Binnick (ed.), *Handbook of Tense and Aspect*, 638-668. Oxford: Oxford University Press.

Ott, Dennis. 2014. An ellipsis approach to Contrastive Left-Dislocation. *Linguistic Inquiry* 45: 269-303.

Ott, Dennis & Volker Struckmeier. 2018. Particles and deletion. *Linguistic Inquiry* 92(2): 393–407.

Panhuis, Dirk. 1980. Gapping in Latin. *The Classical Journal* 75(3): 229-241.

Pérez-Jiménez Isabel, and Moreno-Quibén, Norberto. 2012. On the syntax of exceptions. Evidence from Spanish. *Lingua* 122(6):582–607.

Pesetsky, David. 1982. Paths and categories. MIT doctoral dissertation. Cambridge Ma: MIT.

Pounder, Amanda. 2006. Broken forms in morphology. In Claire Gurski & Milica Radišić (eds.), *Proceedings of the 2006 annual conference of the Canadian Linguistics Association*. http//cla-acl.ca/actes-2006-proceedings/

Potter, David; Frazier, Michael & Yoshida, Masaya. 2017. A two-source hypothesis for Gapping. *Natural Language & Linguistic Theory* 35 (4), 1123-1160.

Preminger, Omer. 2014. *Agreement and its failures*. Linguistic Inquiry Monographs 68. Cambridge, MA: MIT Press.

Preminger, Omer & Polinsky, Maria. 2015. Agreement and semantic concord: a spurious unification. Ms., University of Maryland College Park.

Pruitt, Kathryn & Floris Roelofsen. 2013. The interpretation of prosody in disjunctive questions. *Linguistic Inquiry* 44. 632–650. https://doi.org/10.1162/LING_a_00141

Pulte, William. 1971. Gapping and word order in Quechua. In: D. Adams et al. (Eds.) Papers from CLS7. University of Chicago, Chicago, Illinois.

Pulte, William. 1973. A note on gapping. *Linguistic Inquiry* 4: 100-101.

Reeve, Matthew. 2014. A unified analysis of gapping and cleft ellipsis. In: N. Melnik (ed.), *MIT Working Papers in Linguistics* 72 *(Proceedings of IATL 29)*, 141–168. Cambridge, MA: MIT Working Papers in Linguistics.

Rennison, John. 1997. *Koromfe*. New York: Routledge

Repp, Sophie. 2009. *Negation in gapping*. New York / Oxford: Oxford Uuniversity Press.

Rizzi, Luigi & Cinque, Guglielmo. 2016. Functional categories and syntactic theory. *Annual Review of Linguistics* 2: 139-163.

Roberts, Craige. 2012. Information structure in discourse: Towards an integrated formal theory of pragmatics. *Semantics & Pragmatics* 5: 1–69.

Rodrigues, Celine, Andrew Nevins & Luis Vicente. 2009. Cleaving the interactions between sluicing and preposition stranding. In Danièle Torck & W. Leo Wetzels (eds.), *Romance Languages and Linguistic Theory 2006* (Current Issues in Linguistic Theory 303), 175–198. Amsterdam: John Benjamins.

Rosenbaum, Harvey. 1977. Zapotec gapping as counterevidence to some universal proposals. *Linguistic Inquiry* 8(2): 379-395.

Ross, John R. 1967. *Constraints on variables in syntax*. Doctoral dissertation, MIT.

Ross, John R. 1969[2012]. Guess who? In Jason Merchant & Andrew Simpson (eds.), *Sluicing. Cross-linguistic perspectives*, 14-39. Oxford: Oxford University Press.

Ross, John R. 1970. Gapping and the order of constituents. In Manfred Bierwisch & Karl E. Heidolph (eds.), *Progress in linguistics,* 249–259. The Hague: Mouton.

Rouveret, Alain. 2012. VP ellipsis, phases and the syntax of morphology. *Natural Language & Linguistic Theory.* 30: 897–963.

Saab, Andrés. 2009. Hacia una teoría de la identidad parcial en la elipsis. Doctoral Dissertation, University of Buenos Aires.

Saab, Andrés. (to appear) Nominal ellipses. To appear in van Craenenbroeck & Temmerman (eds.) lingbuzz/002216

Sabbagh, Joseph. 2007. Ordering and linearizing rightward movement. *Natural Language & Linguistic Theory* 25:349–401.

Sabbagh, Joseph. 2014. Right node raising. *Language and Linguistics Compass* 8: 24–35. https://doi.org/10.1111/lnc3.12058

Sag, Ivan. 1976. *Deletion and logical form*. Doctoral dissertation, Dept. of Linguistics, MIT.

Sag, Ivan, Nykiel, Joanna. 2011. Remarks on Sluicing. In Müller, Stefan (ed.) *Proceedings of the HPSG11 Conference*. http://csli-publications.stanford.edu/

Schwarz, Bernhard. 1999. On the Syntax of either...or. *Natural Language & Linguistic Theory* 17. 339-370. https://doi.org/10.1023/A:1006046306942

Shlomina, Anna. 2016. Focus trigger and sluicing in Russian Y/N questions: Unified sluicing analysis and machine translation application in ABBYY Compreno. *Proceedings of FASL 25*. Ann Arbor Mi: Michigan Slavic Publications.

Shlonsky, Ur & Gabriela Soare. 2011. Where's 'why'? *Linguistic Inquiry* 42(4): 651-669.

Shopen, Timothy. 1972. A generative theory of ellipsis. UCLA PhD Dissertation.

Siegel, Muffy. 1984. Gapping and interpretation. *Linguistic Inquiry* 15(3): 523-530.

Sigurðsson, Halldór Ármann. 2011. Conditions on argument drop. *Linguistic Inquiry* 42. 267–304. https://doi.org/10.1162/LING_a_00042

Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19(2): 425-451.

Sridhar, Shikaripur Narayanarao. 1990. *Kannada*. London; New York: Routledge

Steedman, Mark. 1990. Gapping as constituent coordination. *Linguistics and Philosophy* 13: 207-264.

Stepanov, Arthur. On wh-fronting in Russian. In: Tamanji, Pius Ngwa, Kusumoto, Kiyomi, (eds). *Proceedings of the North East Linguistic Society 28*. 453-467. Amherst: GLSA.

Takahashi, Shoichi. 2004. Pseudogapping and cyclic linearization. In Proceedings of NELS 34. Amherst, Mass.: GLSA, 571–85.

Takahashi, Daiko. 2008. Noun phrase ellipsis. In: Miyagawa, Shigeru & Saito, Mamoru. (eds.) *The Oxford Handbook of Japanese Linguistics*. Oxford: OUP.

Tang, Sze-Wing. 2001. The (non-) existence of gapping in Chinese and its implications for the theory of gapping. *Journal of East Asian Linguistics* 10:201–224.

Teleman, Ulf, Hellberg, Stafan & Andersson, Erik. 1999. *Svenska Akademiens grammatik. 4. Satser och meningar.* Stockholm: Norsteds Ordbok.

Temmerman, Tanja. 2013. On the syntax of Dutch embedded fragment answers: on the PF-theory of islands and the WH/sluicing correlation. *Natural Language & Linguistic Theory* 31: 235-285.

Testelets, Yakov. 1999. Ellipsis imennyx grupp i nulevaja anafora. [Ellipsis of noun phrases and null anaphora.] In Kibrik, Alexander & Testelets, Yakov (eds.) *Elementy caxurskogo yazyka v tipologičeskom osveščenii*. [Elements of Tsakhur from a typological viewpoint.] 674-690. Moscow: Nasledie.

Testelets, Yakov. 2001. *Vvedenie v obščij sintaksis*. [Introduction to general syntax.] Moscow: RGGU.

Thoms, Gary. 2016. Pseudogapping, parallelism and the syntax of focus. *Syntax* 19 (3): 286-307.

Timberlake, Alan. 2004. *A reference grammar of Russian*. Cambridge: Cambridge University Press.

Toosarvandani, Maziar. 2008. Wh-movement and the syntax of sluicing. *Journal of Linguistics* 44: 677-722.

Toosarvandani, Maziar. 2016. Embedding the antecedent in gapping: Low coordination and the role of parallelism. *Linguistic Inquiry* 47(2): 381-390.

Uegaki, Wataru. 2014a. Japanese alternative questions are disjunctions of polar questions. In: Todd Snider, Sarah D'Antonio and Mia Weigand (eds.). *Proceedings of SALT 24,* 42–62*.*

Uegaki, Wataru. 2014b. Cross-linguistic variation in the derivation of alternative questions: Japanese and beyond. In Uli Sauerland & Luka Crnič (eds.), *The art and craft of semantics: A Festschrift for Irene Heim*, 251-274. Cambridge, MA: MIT Working Papers in Linguistics.

Vanden Wyngaerd, Guido. 2007. Gapping Constituents. HUB Research paper.

Vendler, Zeno. 1967. *Linguistics in Philosophy*. Ithaca, NY: Cornell University Press.

Vicente, Luis. 2010. A note on the movement analysis of gapping. *Linguistic Inquiry* 41(3), 509-517.

Vikner, Sven. 1995. *Verb Movement and Expletive Subjects in the Germanic Languages.* Oxford: Oxford University Press.

Wei, Ting-Chi. 2011. Subordinate gaps in Mandarin Chinese. *Taiwan Journal of Linguistics* 9(1): 51-88.

Weir, Andrew. 2014. *Fragments and clausal ellipsis.* Amherst, MA: University of Massachusetts dissertation.

Weir, Andrew. 2017. Cointensional questions and their implications for fragment answers. In Proceedings of Sinn und Bedeutung 21. University of Edinburgh.

Wilder, Chris. 1999. Right node raising and the LCA. In Proceedings of the 18th West Coast Conference on Formal Linguistics, ed. S. Bird, A. Carnie, P. Haugen & P. Norquest, 586–598. Somerville, MA: Cascadilla.

Wilder, Chris. 2008. Shared constituents and linearization. In *Topics in ellipsis*, ed. K. Johnson, 229–258. Cambridge: Cambridge University Press.

Williams, Edwin. 1997. Blocking and Anaphora. *Linguistic Inquiry* 28.4: 577–628.

Winkler, Susanne. 2005. *Ellipsis and focus in generative grammar*. Berlin/New York: Mouton de Gruyter.

Woolford, Ellen. 1999. More on the Anaphor-Agreement Effect. *Linguistic Inquiry* 30: 257-287.

Woolford, Ellen. 2006. Lexical Case, Inherent Case, and argument structure. *Linguistic Inquiry* 37(1): 111–130.

Wurmbrand, Susi. 2012. The syntax of valuation in auxiliary–participle constructions. In: Coyote Working Papers: Proceedings of the 29th West Coast Conference on Formal Linguistics (WCCFL 29), ed. by Jaehoon Choi et al., 154-162. University of Arizona, Tucson.

Wurmbrand, Susi. 2017. Stripping and topless complements. *Linguistic Inquiry* 48.2: 341-366.

Zaliznjak, Andrej & Padučeva, Elena. 1979. Sintaksičeskie svojstva mestoimenija kotoryj. [Syntactic properties of the pronoun *kotoryj*.] in T.M. Nikolaeva, *Kategorija Opredelennosti-Neopredelennosti v Slavjanskix i Balkanskix Jazykax*. [The category of definiteness in Slavic and Balkan languages.] Moscow: Nauka.

Zagona, Karen. 1982. Government and Proper Government of Verbal Projections. PhD dissertation, University of Washington.

Zagona, Karen. 1988a. Proper government of antecedentless VPs in English and Spanish. *Natural Language and Linguistic Theory* 6: 95–128.

Zagona, Karen. 1988b. *Verb Phrase Syntax: A Parametric Study of English and Spanish*. Dordrecht: Kluwer.

Zanon, Ksenia. 2014. Two Russian hybrids. *Journal of Slavic Linguistics* 22(2): 215-258.

Zeijlstra, Hedde. 2012. There is only one way to agree. *The Linguistic Review* 29(3): 491-539.

van Zonnenveld, Ron. 1991. The syntax of gapping. In in: Frank Drijkoningen — Ans van Kemenade (eds.), *Linguistics in the Netherlands 1991*. 161–170. Amsterdam, Philadelphia: John Benjamins.

Zubizarreta, Maria Luisa. 1987. *Levels of representation in the lexicon and in the syntax*. Dordrecht: Foris Publications.

Zwart, Jan-Wouter. 2011. *The Syntax of Dutch*. Cambridge: Cambridge University Press.